PO1. Acellular matrix

<u>01-P001</u>: Nasal cartilage reconstruction using decellularized extracellular cartilage matrix: Long-term comparison of subcutaneous and intranasal biocompatibility in a rabbit model

Achim von Bomhard, Alexander Elsaesser, Ricarda Riepl, Katharina Pippich, Joseph Faust, Silke Schwarz, Ludwig Koerber, Roman Breiter, Nicole Rotter

Department of Maxillo-facial surgery, Technical University of Munich, Germany

<u>01-P002</u>: The acceleration of angiogenesis into inactivated dermis by high hydrostatic pressure using the sustained release basic fibroblast growth factor

Tien Minh Le, Naoki Morimoto, Natsuo Kakudo, Toshihito Mitsui, Sharon Claudia Notodihardjo, Kenji Kusumoto

Department of Plastic and Reconstructive Surgery, Kansai Medical University, Hirakata, Japan

<u>01-P003:</u> IL-33 as a key signaling molecule for the therapeutic effects of ECM bioscaffolds for muscle repair

George S Hussey, Jenna L Dziki, Heth R Turnquist, Stephen F Badylak McGowan Institute for Regenerative Medicine, University of Pittsburgh / Department of Surgery, University of Pittsburgh, USA

<u>01-P004:</u> Animal Liver Matrix Obtained by Decelularization procedure Viorel Nacu. Mariana Jian, Ivan Moghildea, Vitalie Cobzac, Ludmila

Nacu, Victor Popescu Laboratory of Tissue Engineering an Cells Cultures, State University of Medicine and

Pharmacy Nicolae Testemitanu, Moldova

<u>01-P005</u>: Surface topology of decellularized aorta and its synthetic replica affected cell behavior

Tsuyoshi Kimura, Mayuka Kondo, Yoshihide Hashimoto, Naoko Nakamura, Akio Kishida

Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University, Tokyo, Japan

<u>O1-P006:</u> Characterization of EmDerm – a novel hierarchically structured bio-intelligent scaffold for tissue regeneration

Xuxin Lim, Matthew Potter, Zhanfeng Cui, Julian F Dye Department of Engineering Science, University of Oxford, Oxford, UK

<u>01-P007</u>: Characterization of decellularized testis matrix

Elias Kargar Abarghouei, Taherh Talaei-khozani, Zahra vojdani, Sanaz Alaei, Ashraf Hassanpour

Department of anatomy, university of medical science, Shiraz, Iran

<u>01-P008</u>: Development of the optimal decellularization protocol for respiratory mucosa and evaluation of its feasibility for treating partial mucosal defect

Soo Yeon Jung, Ha yeong Kim, An Nguyen-Thuy Tran, Hyun Ju Oh, Min Ji Lee, Sojeong Kim, Han Su Kim

Department of Otorhinolaryngology-Head and Neck Surgery, College of Medicine, Ewha Womans University, Korea

<u>01-P009:</u> Crosslinking of Collagen or Collagen-like Hydrogels by Fenton's Reagent for Ocular Applications

Mehmet Nizamoglu, Jöns Hilborn, Ayan Samanta Polymer Chemistry, Department of Chemistry-Angstrom, Uppsala University, Uppsala, Sweden

<u>O1-PO10:</u> 3D printing of highly stable hydrogels composited of gelatin and dopamine-modified alginate

Quan Wang

Department of Orthopaedics, The Second Affiliated Hospital and Yuying Childrens Hospital of Wenzhou Medical University, Wenzhou, China

<u>O1-PO11:</u> Investigation of Bone Reconstruction Using Attenuated Immunogenicity Xenobone Composite Graft Fabricated by 3D Printing Huaqiong Li, Qiongxi Pan, Yingying Wang, Allan Zijian Zhao

School of Biomedical Engineering, School of Ophthalmology & Optometry and Eye Hospital, Wenzhou Medical University, Wenzhou, China / Wenzhou Institute of Biomaterials and Engineering, CAS, Wenzhou, China / Engineering Research Center of Clinical Functional Materials and Diagnosis & Treatment Devices of Zhejiang Province, Wenzhou Institute of Biomaterials and Engineering, CAS, Wenzhou, China

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01-P012: Nanomaterials for tissue engineering of heart valve bioprosthesis – the use of acoustic wave and laser ablation methods for the preparation of bioactive scaffold

Piotr Wilczek, Roman Major, Marek Sanak, Marek Strzelec, Roman Ostrowski, Antoni Rycyk, Aleksandra Niemiec Cyganek, Anna Baranska-Lesiak

Heart Prosthesis Institute, Bioengineering Laboratory, Wolnosci Zabrze, Poland

<u>01-P013:</u> Microscopic Challenges to Understand Structural Characteristics of Protein Based Biomaterials for Research and Translational Applications in Skin Tissue Engineering

Vaibhav Sharma, Dale Moulding, Nupur Kohl, Elena García-Gareta, Lilian Hook

Regenerative Biomaterials Group, RAFT Institute, Mount Vernon Hospital, Northwood, UK / Smart Matrix Ltd, Leopold Muller Building, Mount Vernon Hospital, Northwood, UK

<u>01-P014:</u> Novel Approach for Quantification of Pore-size for Scaffolds (>16 cm²) Using ImageJ Software for Quality Control

Vaibhav Sharma, Dale Moulding, Elena García-Gareta, Lilian Hook Regenerative Biomaterials Group, RAFT Institute, Mount Vernon Hospital, Northwood, UK / Smart Matrix Ltd, Leopold Muller Building, Mount Vernon Hospital, Northwood, UK

01-P015: Human Decellularized Dermis as Biological Scaffold for Myocardial Regeneration: Mechanical Characterization

Diana Massai, Mara Terzini, Alessandra Aldieri, Veronica Romano, Clotilde Castaldo, Franca Di Meglio, Daria Nurzynska, Gianpaolo Serino, Cristina Bignardi, Alberto Audenino Department of Mechanical and Aerospace Engineering, Politecnico di Torino, Torino,

Italy 01-P016: Tissue Decellularization Bioreactors – Medical Grade vs. Basic

Science Maximilian Grah, Espiso Koopig, Jossico Emrich, Christian Hagi

Maximilian Grab, Fabian Koenig, Jessica Emrich, Christian Hagl, Nikolaus Thierfelder

Department of Cardiac Surgery, Ludwig Maximilians University, Munich, Germany / Institute of Medical and Polymer Engineering, Technical University, Munich, Germany

<u>01-P017</u>: Fabrication of Hydrogel Materials for Wound Healing

Jen Ming Yang, Yi-Fan Lu, Yen-Hsiang Chang, Chih Chin Hsu Department of Chemical and Materials Engineering, Chang Gung University, Taiwan / Department of General Dentistry, Chang Gung Memorial Hospital, TaoYuan, Taiwan / Division of Pediatric Ingectious Diseases, Department of Pediatrics, Chang Gung Memorial Hospital, Taoyuan, Taiwan

01-P018: Application of cell-free human allodermis and skin grafts for lower extremity reconstruction

Sang Wha Kim, Youn Hwan Kim

Department of Plastic and Reconstructive Surgery, College of Medicine, Seoul National University, Seoul National University Hospital, Seoul, Korea

<u>01-P019:</u> Melanin pigments in the melanocytic nevus regress spontaneously after inactivation by high hydrostatic pressure

Michiharu Sakamoto, Naoki Morimoto, Chizuru Jinno, Atsushi Mahara, Shuichi Ogino, Kenji Kusumoto, Tetsuji Yamaoka Department of Plastic and Reconstructive Surgery, Kyoto University Graduate School of Medicine, Kyoto, Japan

<u>01-P020:</u> Bioinspired scaffolds for tissue engineering applications Franck Cleymand, Charles Roux-Pertus, Solenne Fleutot, João Mano Institut Jean Lamour (IJL), Universite de Lorraine, Nancy, France

01-P021: Perfusion Decellularization of Cadaveric Porcine Kidney Using Chemical Methods with Sonication

Nathaniel P. Dugos, Sreypich Say, Tosha Mae Manalastas, Joseph Rey Sta. Agueda, Sigrid M. Agcaoili, Julie Anne M. Nana Chemical Engineering Department, De La Salle University, Manila, Philippines

01-P022: Preparation of neural stem cell-derived decellularized matrices as a stem cell niche model

Takashi Hoshiba, Yuki Sugano, Natsumi Yokoyama Frontier Center for Organic Materials, Yamagata University, Yonezawa, Japan / Innovative Flex Course for Frontier Organic Material Systems, Yamagata University, Yonezawa, Japan / National Institute for Materials Science, Tsukuba, Japan

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01-P023: Effects of RGDSP-derived Extracellular Signaling in Threedimensional Polyethylene Glycol (PEG)-based Hydrogel on Maintaining Undifferentiation of Spermatogonial Stem Cells in Pig

Min Hee Park, Hyun Lee, Jung Im Yun, Kimyung Choi, Eunsong Lee, Seung Tae Lee

Department of Animal Life Science, Kangwon National University, Chuncheon, Korea <u>01-P024:</u> Effects of TTSWSQ-derived Extracellular Signaling in

3-dimensional Polyethylene Glycol (PEG)-based Hydrogel on Maintaining Undifferentiation of Spermatogonial Stem Cells derived from Porcine Testes

Hye Jin Park, Min Hee Park, Song Baek, Jung Im Yun, Kimyung Choi, Eungsong Lee, Seung Tae Lee

Department of Animal Life Science, University of Kangwon National University, Chuncheon, Korea

<u>01-P025:</u> Effects of PEILDVPSTV-derived Extracellular Signaling in Three-dimensional Polyethylene Glycol (PEG)-based Hydrogel on Maintaining Undifferentiation of Spermatogonial Stem Cells in pig

Na Rae Han, Min Hee Park, Jung Im Yun, Kimyung Choi, Eunsong Lee, Seung Tae Lee

Department of Animal Life Science, Kangwon National University, Chuncheon, Korea

<u>01-P026</u>: Degradation rate defines *in situ* cell reprogramming efficiency of the active chitosan implants

Andrey Mikhailov, Yoshiyuki Sankai

University of Tsukuba, Center for Cybernics Research, Japan

<u>01-P028:</u> Staged tumorigenesis-mimicking matrices for mechanisms analysis of chemoresistance acquisition

Takashi Hoshiba

Frontier Center for Organic Materials, Yamagata University, Yonezawa, Japan / Innovative Flex Course for Organic Material Systems, Yamagata University, Yonezawa, Japan / National Institute for Materials Science, Japan

<u>01-P029</u>: Sterile acellular tissues developed by a CO₂-philic detergent and supercritical carbon dioxide

Jens Antons, Matteo Gregorio Modesto Marascio, Pierre Arnaud Aeberhard, Giulia Weissenberger, Nathalie Hirt-Burri, Lee Ann Applegate, Pierre Etienne Bourban, Dominique P Pioletti Laboratory of Biomechanical Orthopedics, Institute of Bioengineering, EPFL, Lausanne, Switzerland / Regenerative Therapy Unit, Lausanne University Hospital (CHUV), Lausanne, Switzerland

<u>01-P030:</u> A multifunctional porcine peritoneum matrix for musculoskeletal regenerative medicine

Hector Capella-Monsonis, Andrea De Pieri, Dimitrios I. Zeugolis Regenerative, Modular Developmental Engineering Laboratory (REMODEL), Galway, Ireland / SFI Centre for Research in Medical Devices (CURAM), National University of Ireland, Galway (NUIG), Galway, Ireland

01-P031: Matrix-derived Materials for Mediating Inflammation and EMT

Tim J Keane, Conor C Horgan, Isaac J Pence, Molly M Stevens Department of Materials, Imperial College London, London UK / Department of Bioengineering, Imperial College London, London UK / Institute of Biomedical Engineering, Imperial College London, London UK

01-P032: Engineering of Cardiac Patch By Using Acellular Scaffolds To Repair A Myocardial Defect

Kezban Ulubayram, Sukru Ozturk, Reza Shahbazi, Naciye Dilara Zeybek, Baris Kurum, Merve Gultekinoglu, Eda Ayse Aksoy, Metin Demircin

Department of Basic Pharmaceutical Sciences, Faculty of Pharmacy, Hacettepe University, Ankara, Turkey / Department of Bioengineering, Graduate School of Science and Engineering, Hacettepe University, Ankara, Turkey / Department of Nanotechnology and Nanomedicine, Graduate School of Science and Engineering, Hacettepe University, Ankara, Turkey

<u>01-P033:</u> Development of a Biological Liver Scaffold for Organ Replacement

Tanya Debnath, Lakshmi Kiran Chelluri

Global Medical Education and Research Foundation, Hyderabad, Telangana, India

01-P034: A Word of Caution – Challenging Decellularization with Established and Modified Treatment Protocols

Maximilian Grab, Simone Mueller, Fabian Koenig, Christian Hagl, Nikolaus Thierfelder

Department of Cardiac Surgery, Ludwig Maximilians University, Munich, Germany / Institute of Medical and Polymer Engineering, Technical Unviersity, Munich, Germany

<u>01-P035</u>: Decellularized Fetal Membranes: Naturally-derived materials improve *ex-vivo* expansion of mesenchymal stem cells and form injectable gels for cell delivery

Aida Shakouri, Zak Reynolds, Andrea Janet O'Connor, Bill Kalionis, Daniel Edward Heath

Department of Biomedical Engineering, University of Melbourne, Australia / Departmeny of Fetal-Maternal Medicine, The Royal Women's Hospital, Australia

<u>01-P036:</u> Harnessing the native extracellular matrix for Periodontal Tissue Engineering

Fanny Blaudez, Cedryck Vaquette, Saso Ivanovski, Dietmar Hutmacher, Stephen Hamlet Griffith University, Gold Coast, QLD, Australia

01-P037: The Development of a Decellularisation Protocol for the Intervertebral Disc for Disc Replacement

Halina Teresa Norbertczak, Eileen Ingham, Hazel Fermor, Ruth Wilcox Institute of Medical and Biological Engineering, University of Leeds, Leeds, UK

<u>01-P038</u>: Porcine acellular dermal matrix potentiate the paracrine function of adipose derived stem cells: An innovative view of synergy between PADM and ADSC

Zhu Zhu, XuSong Luo, Cheng Huang

Department of Plastic and Reconstructive Surgery, Shanghai 9th People's Hospital, Shanghai Jiao Tong University School of Medicine, Shanghai Key Laboratory of Tissue Engineering, Shanghai, PR China

<u>01-P039:</u> Optimisation of Decellularisation of Human Saphenous Vein for Coronary Arterial Grafting

Nadiah Sulaiman, Andrew Bond, Daniel Baz-Lopez, John Joseph, Vito Domenico Bruno, Saadeh Suleiman, Sarah George, Raimondo Ascione Bristol Medical School, University of Bristol, RFLS, BRI, Bristol, UK / Tissue Engineering Centre, Universiti Kebangsaan Malaysia Medical Centre, Cheras, Kuala Lumpur, Malaysia

01-P040: Decellularized Extracellular Matrix Based Bio-ink having an enhanced 3D printability

Min Kyeong Kim, Won Woo Jeong, Sang Min Lee, Hyun-Wook Kang Department of Life Science, UNIST, Ulsan, Korea

01-P041: An adipose tissue extraction method from decellularized cancerous bone for exploring hematopoietic-related extracellular matrix

Naoko Nakamura, Shunya Shiba, Satoshi Shinohara, Shogo Suzuki, Tsuyoshi Kimura, Akio Kishida

College of Systems Engineering and Science, Shibaura Institute of Technology, Japan

<u>01-P042:</u> Mechanically reinforced ECM scaffold for cartilage tissue engineering

Sang-Hyug Park, Sung-Han Jo, Nahyeon Kim, Seonhwa Kim, Hyun Ju Oh, Byoung-Hyun Min

Department of Biomedical Engineering, Pukyong National University, Busan, Korea

01-P043: An injectable hydrogel derived from porcine articular cartilage for delivery system

Tae Woong Kang, Joon Yeong Park, Seung Hun Park, Byoung Hyun Min, Moon Suk Kim

Department of Molecular Science and Technology, Ajou University, Suwon, Korea

<u>01-P044:</u> Epidural Fat Regeneration by Decellularized Matrix Scaffold-Riched Adipose Stromal Cell to Prevent Epidural Scar Tissue Formation Dina Aprilya, Ahmad Jabir Rahyussalim university indonesia, Indonesia

<u>01-P045</u>: Fabrication and anti-adhesion feasibility test of cross-linked cartilage acellular matrix film with adjustable mechanical properties Joon Yeong Park, Jin Woo Lee, Tae Woong Kang, Hee-Woong Yun,

Byoung Hyun Min, Moon Suk Kim Department of molecular science and technology, Ajou University, Suwon, Korea

01-P046: Kidney Regeneration Using Acellular Bio-scaffold After Partial Nephrectomy

Kazuki Tajima, Hiroshi Yagi, Hisanobu Higashi, Kazuya Hirukawa, Naho Murakawa, Rie Kinoshita, Kohei Kuroda, Sakiko Ito, Yuko Kitagawa Department of Surgery, Keio University School of Medicine, Tokyo, Japan

<u>01-P047:</u> Effects Of Sterilisation Strategies On The Biological And Physical Properties Of Decellularised Nerve Grafts

James DR Holland, Georgina Webster, Louise M Jennings, Paul Rooney, Helen E Berry, Stacy-Paul Wilshaw Institute of Medical and Biological Engineering, Leeds, UK

<u>01-P048:</u> Preclinical Evaluation of the Silk-Based Sheath for Enhanced Osteointegration of Tendon Graft in Anterior Cruciate Ligament Reconstruction

Thomas Kok Hiong Teh, Si-Ning Png, Pujiang Shi, Xiafei Ren, James Hoi Po Hui, Jun Li, James Cho Hong Goh

Department of Biomedical Engineering, National University of Singapore, Singapore

<u>01-P049:</u> A Novel Pro-Angiogenic Fibrin-Alginate Technology for Repair and Regeneration of Multiple Tissues

Vaibhav Sharma, Stuart Brown, Nupur Kohli, Lilian Hook, Elena Garcia-Gareta

Regenerative Biomaterials Group, RAFT Institute, Mount Vernon Hospital, Northwood, UK / Smart Matrix Ltd, Leopold Muller Building, Mount Vernon Hospital, Northwood, UK

<u>01-P050</u>: An Ultrapurified Alginate gel on an Acellular Scaffold for Cartilage regeneration: a Pre-clinical Animal Study

Tomohiro Onodera, Rikiya Baba, Masatake Matsuoka, Norimasa Iwasaki

Hokkaido University Graduate School of Medicine, Japan

<u>01-P051:</u> Histo-morphological analysis of acellular dermal matrix after implantation in the human body

Martin Bohac, Ivan Varga, Lubos Danisovic, Jan Koller Plastic surgery department, Faculty of Medicine, Comenius University in Bratislava, Slovakia

01-P052: Mid- and long-term evaluation of REDV-modified smalldiameter acellular grafts

Atsushi Mahara, Kentaro Kojima, Yoshiaki Hirano, Tetsuji Yamaoka Department of Biomedical Engineering,National Cerebral and Cardiovascular Center Research Institute, Japan

<u>01-P053:</u> Investigate biocompatibility of decellularized porcine coronary artery for vascular tissue engineering

Chih-Hsun Lin, Chi-Han Tsai, Kai Hsia, Yun-Chu Kao, Jen-Her Lu, Hsu Ma, Ruey-Yug Tsay

Department of Plastic Surgery, Taipei Veterans General Hospital, Taipei, Taiwan / School of Medicine, National Yang-Ming University, Taipei, Taiwan

<u>01-P054</u>: Development of decellularized nerve allograft using detergent and nuclease

Suk Young Park, Chang Hyun Jeong, Jae Kwang Kim Department of Orthopedic Surgery, Asan Medical Center, University of Ulsan college of Medicine, seoul, Korea

01-P055: The Effect of Gamma Irradiation Dose on the

Histoarchitectural and Physical Properties of Decellularised Heart Valve Roots

Helen E Berry

Institute of Medical and Biological Engineering, School of Biomedical Sciences, University of Leeds, Leeds, UK

<u>01-P056</u>: A toolbox of single factors and their influence on successful decellularization processes

Maximilian Grab, Fabian Koenig, Evelyn Kienle, Elena Kuster, Fabian Starnecker, Simone Müller, Linda Grefen, Marie Kilzer, Barbara Steinl, Bettina Wimmer, Christian Hagl, Nikolaus Thierfelder

Department of Cardiac Surgery, Ludwig Maximilians University, Munich, Germany / Institute of Medical and Polymer Engineering, Technical University, Munich, Germany

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PO2. Bioinspired materials

01-P057: Designer Leucine-Zipper hydrogel for Tissue Repair and Regeneration

Anne George, Sriram Ravindran, Chun-Chieh Huang University of Illinois at Chicago, USA

<u>01-P058</u>: Engineered phage nanofibers induce Angiogenesis

So Young Yoo, Su-Nam Jeong, Kshitiz Raj Shrestha, Jeong-In Kang BIO-IT Foundry Technology Institute, Pusan National University, Busan, Korea / Research Institute for Convergence of Biomedical Science and Technology, Pusan National University Yangsan Hospital, Yangsan, Korea

<u>01-P059</u>: Hydrogel control the amount and distribution of host myeloid cells for vesculogenesis and angiogenesis

Shin Yan Wei, Chi Shuo Chen, Ying Chieh Chen

Deprtment of Biomedical Engineering and Environmental Sciences, National Tsing-Hua University, Hsinchu, Taiwan

<u>01-P060:</u> Therapeutic Hind Limb Regeneration Using a Non-Regenerative Ischemic Mice Model

Lynn L.H. Huang, Zih-Fei Cheng, Yi Lee, May Chien Department of Biotechnology and Bioindustry Sciences, National Cheng Kung University, Tainan, Taiwan / Institute of Clinical Medicine, National Cheng Kung University, Tainan, Taiwan / Research Center of Excellence in Regenerative Medicine, National Cheng Kung University, Tainan, Taiwan

<u>01-P061:</u> Temperature-dependent Affinity Binding of Heparin-binding Growth Factors and Cells with a Heparin-immobilized Thermoresponsive Surface

Jun Kobayashi, Yoshikatsu Akiyama, Masayuki Yamato, Teruo Okano Institute of Advanced Biomedical Engineering and Science, Tokyo Women's Medical University, Tokyo, Japan

<u>01-P062</u>: Stem cell spheroids incorporating functionalized fragmented fibers for effective bone regeneration

Jinkyu Lee, Jin Ki Lee, Sang-min Lee, Heungsoo Shin Department of bioengineering, Hanyang University, Seoul, Korea / Brain Korea 21 Plus Future Biopharmaceutical Human Resources Training and Research Team, Seoul, Korea

<u>01-P065</u>: Differential Release of BMP2 and VEGF from a Biomimetic Nanofibrous Scaffold Enhances Bone Regeneration in Critical Sized Calvarial Defects

Shruthy Kuttappan, Jun-ichiro Jo, Deepthy Menon, Manitha B Nair, Yasuhiko Tabata

Amrita Center for Nanosciences and Molecular Medicine, Amrita Institute of Medical Sciences and Research Center, Cochin, India

<u>01-P066:</u> Platelet Lysate-based Nanocomposite Bioinks for 3D Printing in Tissue Engineering

Manuel Gomez-Florit, Barbara B Mendes, Alex Hamilton, Rui M.A. Domingues, Michael S. Detamore, Rui L. Reis, Manuela E. Gomes 3B's Research Group, University of Minho, Portugal / ICVS/3B's - PT Government Associate Laboratory, Portugal

<u>01-P067:</u> Bioprinting Meets Macromolecular Crowding: A Facile Approach to fabricate 3D Hierarchical Collagen-based Hydrogels

Wei Long Ng, Chee Kai Chua Singapore Centre for 3D Printing (SC3DP), Singapore

01-P068: Engineered Phage Matrix Stiffness-Modulating Osteogenic Differentiation

So Young Yoo, Jeong-In Kang, Seung-Wuk Lee BIO-IT Foundry Technology Institute, Pusan National University, Busan Korea / Research Institute for Convergence of Biomedical Science and Technology, Pusan National University Yangsan Hospital, Yangsan, Korea

<u>01-P069</u>: Dynamic modulation of hydrogels to mechanically manipulate cells in a reversible manner

Yashoda Chandorkar, Arturo Castro Nava, Tamas Haraszti, Marcel Van Dongen, Jens Koehler, Hang Zhang, Ahmed Mourran, Martin Moeller, Laura De Laporte

DWI Leibniz Institut fuer Interaktiv Materialien, Aachen, Germany

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<u>01-P070:</u> Bioinspired engineering of artificial heart valve constructs using natural protein fibers

Xing Zhang, Chang Liu, Tao Jin, Qian Li, Feng Guo, Yun Bai Institute of Metal Research, Chinese Academy of Sciences / University of Science and Technology of China, China

01-P071: Nature-inspired Biomaterial Instructs Cells Behaviour: 3D Microenvironmental Interaction Between Mesenchymal Stem Cells And Endothelial Cells explored In Bioreactor

Silvia Panseri, Monica Montesi, Andrea Ruffini, Alberto Ballardini, Simone Sprio, Anna Tampieri

Institute of Science and Technology for Ceramics - National Research Council of Italy, Italy

<u>01-P072:</u> Tissue-engineered Descemet's stripping endothelial keratoplasty

Karl David Brown, Jean-Pierre Scheerlinck, Penelope McKelvie, Hong Zhang, Greg Qiao, Mark Daniell Surgical Research Unit, Centre for Eye Research Australia, Australia

01-P073: A mechanobiologically inspired platform for therapeutic T-cell activation

Matthew H. W. Chin, Marc-Olivier Coppens, Eileen Gentleman, Richard Dav

Division of Medicine, University College London, London, UK

01-P074: Adhesive Hydrogel Sponge Based on Biomaterials Derived from Marine Life for Topical Hemostatic Dressing

Jaeyun Lee, Hyo Jeong Kim, Eun Young Jeon, Tae Yoon Park, Geunho Choi, Kye Il Joo, Bong-Hyuk Choi, Hyung Joon Cha Department of Chemical Engineering, Pohang University of Science and Technology, Pohang, Korea

01-P075: Novel Porous Calcium Phosphate Nanoparticles As A Drug/ion Delivery Platform And Primary Precursor Of Bone Mineral Formation Iman Roohani

University of New South Wales Sydney, Australia

<u>01-P076:</u> Natural polyphenol-based fast-forming hydrogel system for versatile biomedical applications

Eun Je Jeon, Jung Ho Cho, Jung Seung Lee, Soohwan An, Seung-Woo Cho

Department of Biotechnology, Yonsei University, Seoul, Korea

<u>O1-P077:</u> Serum Derived Exosomes for the Delivery of Small Molecules and Peptides

Hyejung Mok, Gyeonghui Yu, Heesun Jung, Yoon Young Kang, Eun Seo Choi, Ok Park, Jihyeon Song

Department of bioscience and biotechnology, Konkuk University, Seoul, Korea

<u>01-P078:</u> Surface biofunctionalization through step-by-step build-up of covalent poly(ethylene oxide) nanogel films

Philippe Lavalle, Sarah Zahouani, Louise Hurman, Loïc Jierry, Pierre Schaaf

Institut Charles Sadron, CNRS UPR 22, Strasbourg, France

<u>01-P079:</u> Bioinspired Extracellular Matrix Hydrogel Doped with Polyelectrolyte Nanoparticles for Endogenous Stem Cell Regulation in Brain Tissue Regeneration

Tzu-Wei Wang, Hsi-Chin Wu

Department of Materials Science and Engineering, National Tsing Hua University, Taiwan

<u>01-P080</u>: Polydopamine nanoparticles modulating poly(vinyl alcohol)tannic acid hydrogels with excellent mechanical properties and tissue adhesiveness

Quan Wang

Department of Orthopaedics, The Second Affiliated Hospital and Yuying Childrens Hospital of Wenzhou Medical University, Wenzhou, China

<u>01-P081:</u> Diamond like internal structure based 3D printed thermoplastic polyurethane scaffold with biomimetic mechanical property for breast reconstruction

Muran Zhou, Jinfei Hou, Zhenxing Wang, Jiaming Sun Department of Plastic surgery.Union Hospital,Tongji Medical College, Huazhong University of Science and Technology(HUST),Wuhan,China

01-P082: Nanofibrous Scaffolds from Elastin-Like Block Polypeptides

Ayae Sugawara-Narutaki, Shunsuke Nara, Jin Nakamura, Chikara Ohtsuki

Department of Materials Chemistry, Nagoya University, Nagoya, Japan

<u>01-P083:</u> Blue inspired tissue engineering: marine origin compounds on the development of biomaterials for regenerative medicine and advanced therapies

Tiago H. Silva, Rui L. Reis

3B's Research Group – Biomaterials, Biodegradables and Biomimetics, University of Minho, Headquarters of the European Institute of Excellence on Tissue Engineering and Regenerative Medicine, AvePark – Parque de Ciência e Tecnologia, Zona Industrial da Gandra, Barco-Guimarães, Portugal / ICVS/3B's - PT Government Associate Laboratory, Braga/Guimarães, Portugal

01-P084: Catechol-based freestanding multilayer membranes as an adhesive and functional scaffold to treat superficial cartilage damage

Maria P. Sousa, Marian Fürsatz, Sylvia Nürnberger, **João F. Mano** CICECO, Aveiro Institute of Materials, Department of Chemistry, University of Aveiro, Aveiro, Portugal / Ludwig Boltzmann Institute for Experimental and Clinical Traumatology, AUVA Research Center, Donaueschingenstraße, Vienna, Austria / Department of Orthopedics and Trauma Surgery, Austrian Cluster for Tissue Regeneration, Medical University of Vienna, Währinger Gürtel, Vienna, Austria

<u>01-P085:</u> Porosity-controlled Catechol Modified-Chitosan Matrices for Tissue Adhesives

Seunghyun Lee, Hong Hee Jung, Sung-Hyun Jeon Department of Advanced medical device research, Hansbiomed, Seoul, Korea

<u>01-P086</u>: Effect of pore microarchitecture in extracellular matrix derived scaffolds on chondrogenesis of mesenchymal stem cells Pedro J Diaz-Payno, Dave C Browe, Daniel J Kelly

Trinity Centre for Bioengineering, Trinity Biomedical Science Institute, Trinity College Dublin, Dublin, Ireland / Department of Mechanical and Manufacturing Engineering, School of Engineering, Trinity College Dublin, Dublin, Ireland

<u>01-P087</u>: Bioactive Materials of Immobilized EphrinB2/EphB4 Signals Regulate Arterial Venous Differentiation of Pluripotent Stem Cells

Guohao Dai, Taylor Dorsey Department of Bioengineering, Northeastern University, Boston, MA, USA

<u>01-P088:</u> Magnetically Actuated Mussel Protein-based Microgels for Site-directed and On-demand Stem Cell Delivery

Hyunsun Choi, Yunkee Jo, HyungJoon Cha

Department of Chemical Engineering, Pohang University of Science and Technology, Pohang, Korea

01-P089: Engineered phage matrices facilitate angiogenic differentiation of adipose derived stem cells

So Young Yoo, Kshitiz Raj Shrestha, Jeong-In Kang, Do Hoon Lee, Byung Yang Lee

BÍO-IT Foundry Technology Institute, Pusan National University, Busan, Korea / Research Institute for Convergence of Biomedical Science and Technology, Pusan National University Yangsan Hospital, Yangsan, Korea

<u>01-P090:</u> Synthetic Coral Scaffold as a Microenvironment to Induce MSC Differentiation Into Osteoblast

Ika Dewi Ana, Erlina Sih Mahanani, Indra Bachtiar Universitas Gadjah Mada, Yogyakarta, Indonesia

<u>01-P091:</u> Surface-initiated atom transfer polymerization of glycidyl methacrylate on electrospun nanofibrils for surface-immobilization of decellularized extracellular matrix

Hyuksang Yoo, Hyesung Kim, Yougju Son, **Wei Mao**, Sol Lee, Jiun Shin, Juwon Lee

kangwon national university, Korea

<u>01-P092:</u> Biomimetic Approaches for Cardiomyocyte Cell Sourcing and Cardiac Patch Fabrication

Ennio Tasciotti, Christopher J Tsao, Xin Wang, Francesca Taraballi Center for Biomimetic Medicine, Houston Methodist Research Institute / Orthopedics & Sports Department, Houston Methodist Hospital, USA



01-P093: Physiological-like fibronectin (nano)networks induced by materials: effect of crosslinking on the protein organization From 2D to 3D microenvironments

Roser Sabater i Serra, Laia León, Antonio Sánchez-Laosa, Luis Gómez-Estrada, José Luis Gómez-Ribelles, Manuel Salmeron-Sanchez, Gloria Gallego-Ferrer

Centre for Biomaterials and Tissue Engineering. Universitat Politecnica de Valencia / Biomedical Research Networking Center in Bioengineering, Biomaterials and Nanomedicine (CIBER-BBN), Spain

01-P094: Gelatin based stretchable biopolymer

Amit Panwar, Tan Lay Poh, Bae Hoon Lee

School of Material science and Engineering, Nanyang Technological University, Singapore

01-P095: SOMEWHERE BETWEEN INNOVATIVE PRECLINICAL MODELS AND NEW TREATMENTS FOR OSTEONECROSIS OF THE KNEE: IS THAT THE WAY?

Melania Maglio, Elena Della Bella, Alice Roffi, Gopal Krishnakumar, Huibert Albertus van Boxtel, Sebastian Gerardus Johannes Maria Kluijtmans, Jonhatan Knychala, Gianluca Giavaresi, Giuseppe Filardo, Elizaveta Kon, Milena Fini

Laboratory of Preclinical and Surgical Studies, Rizzoli Orthopaedic Institute, Bologna, Italy

<u>01-P096:</u> Immunemodulatory biomimetic scaffold to heal critical size chondral defect

Francesca Taraballi, Guillermo Bauza, Misha Hopson, Fernando Cabrera, Aaron Sih, Patrick Mcculloch, Ennio Tasciotti Houston Methodist Research Institute / Orthopedics & Sports Department Houston Methodist Hospital, USA

<u>01-P097:</u> Mussel-Inspired Hydrogel based on Polyphenol Oxidation for Wet Tissue Adhesion and Immune Modulation

Su-Hwan Kim, Kyungmin Kim, Byung-Gee Kim, Nathaniel Suk-Yeon Hwang

Interdisciplinary Program of Bioengineering, Seoul National University, Seoul, Korea / School of Chemical and Biological Engineering, Seoul National University, Seoul, Korea

<u>01-P098</u>: Jellyfish Collagen with Covalently Bound Marine Natural Sunscreens: A Viable Protection from UV Induced Skin Damage

Sujit Narayanan Kootala. Susana CM Fernandes CNRS/Université de Pau et des Pays de l'Adour, Institut des Sciences Analytiques et de

Universite of Partie Part of the Partie Part

<u>01-P099:</u> Nanoengineering Bioinspired Supramolecular Multilayered Biomaterials encompassing Marine-Origin Polysaccharides and Self-Assembling Peptide Amphiphiles toward Tissue Engineering Strategies

Joao Borges, Maria P. Sousa, Goksu Cinar, Sofia G. Caridade, Mustafa O. Guler, João F. Mano

Department of Chemistry, CICECO - Aveiro Institute of Materials, University of Aveiro, Aveiro, Portugal / 3B's Research Group – Biomaterials, Biodegradables and Biomimetics, University of Minho, Headquarters of the European Institute of Excellence on Tissue Engineering and Regenerative Medicine, Avepark – Parque de Ciência e Tecnologia, Zona Industrial da Gandra, Barco, Guimarães, Portugal / ICVS/3B's – PT Government Associate Laboratory, Braga/Guimarães, Portugal

<u>01-P100:</u> Dynamic supramolecular hydrogels for tissue engineering: from materials design to tissue growth

Matthew B. Baker

Department of Complex Tissue Regeneration, MERLN Institute, Maastricht University, Maastricht, the Netherlands

<u>01-P101:</u> Bioinspired medical adhesives based on tough hydrogels

Adam Celiz, Jianyu Li, Jiawei Yang, Quansan Yang, Isaac Wamala, William Whyte, Bo-Ri Seo, Nikolay Vasilyev, Joost Vlassak, Zhigang Suo, David Mooney

Department of Bioengineering, Imperial College London, UK / Wyss Institute for Biologically Inspired Engineering, Harvard University, Cambridge, MA, USA / Advanced Materials and Healthcare Technologies Division, School of Pharmacy, University of Nottingham, Nottingham, UK

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01-P102: Blood Repellency on Slippery, Liquid-Immobilized Surface Coatings

Anna Waterhouse, Sally Gao

Central Clinical School, Sydney Medical School, University of Sydney, Sydney, Australia / Heart Research Institute, Newtown, Australia

01-P103: Bio-inspired adhesive protein-based swellable microneedle patch for regenerative wound closure

Eun Young Jeon, Jung Ho Lee, Guenbae Lim, Hyung Joon Cha Department of Chemical Engineering, Pohang University of Science and Technology (POSTECH), Pohang, Korea

<u>01-P104:</u> *In vitro* synthesis of bone-like tissue using cell nanofragments Mst Nahid Akhter, Emilio Satoshi Hara, Masahiro Okada, Takuya Matsumoto

Department of Biomaterials, Okayama University Graduate School of Medicine Dentistry and Pharmaceutical Sciences, Japan

<u>01-P105:</u> Biocompatible interpenetrated scaffolds for wound healing processes with bioadhesive properties

María Puertas-Bartolomé, Lorena Benito-Garzón, Stephanie Fung, Joachim Kohn, Blanca Vázquez-Lasa, Julio San Román Institute of Polymer Science and Technology, ICTP-CSIC. Juan de la Cierva 3, Madrid, Spain / CIBER-BBN, Institute of Health Carlos III. Monformte de Lemos 3-5 (11), Madrid, Spain

PO3. Biomaterials

<u>01-P106</u>: The role of fibrinolysis inhibition in engineered vascular networks derived from endothelial cells and adipose-derived stem cells

Severin Muehleder, Karoline Pill, Mira Schaupper, Krystyna Labuda, Eleni Priglinger, Pablo Hofbauer, Verena Charwat, Uwe Marx, Heinz Redl, Wolfgang Holnthoner

Kompetenzzentrum für MechanoBiologie (INTERREG V-A AT-CZ ATCZ133) / Ludwig Boltzmann Institute for Experimental and Clinical Traumatology, Vienna, Austria / Austrian Cluster for Tissue Regeneration, Vienna, Austria

<u>01-P107:</u> Synergistic angiogenic effects enabled by combined release of ion and growth factor

Khandmaa Dashnyam, Chinmaya Mahapatra, Hae-Hyoung Lee, Hae-Won Kim

Institute of Tissue Regeneration Engineering (ITREN), Dankook University, Cheonan, Korea. / Department of Nanobiomedical Science & BK21 PLUS NBM Global Research Center for Regenerative Medicine, Dankook University, Korea

01-P108: DEGRADATION PROCESS OF 3D PRINTED BIOINKS TO DEVELOP PREDICTION MODEL FOR OPTIMIZING MECHANICAL BEHAVIOUR OF SCAFFOLD

Mario D. Monzon, Noelia Diaz, Ricardo Donate, Chaozong Liu, **Rubén** Paz, Sara Ajami, Zaida Ortega

Departamento de Ingeniería Mecánica.Universidad de Las Palmas de Gran Canaria. Las Palmas GC. Spain

<u>01-P109</u>: A Proof of Concept for Biomaterial Testing: *Ex Ovo* Chorioallantoic Membrane Assay for Pre-Screening Biomaterials intended for Clinical Application

Nupur Kohli, Prasad Sawadkar, Sonia Ho, Vaibhav Sharma, Martyn Snow, Sean Powell, Maria Woodruff, Lilian Hook, Elena García-Gareta Regenerative Biomaterials Group, RAFT Institute, Mount Vernon Hospital, Northwood, Lik

<u>01-P110:</u> Intravital longitudinal imaging of peri-implant endosseous wound healing reveals the role of nanotubular surfaces in regulating neovascular morphogenesis *in vivo*

Niloufar Khosravi, Azusa Maeda, Ralph S. DaCosta, John E. Davies Faculty of Dentistry, University of Toronto, ON, Canada / Princess Margaret Cancer Institute, University Health Network, Toronto, ON, Canada

<u>01-P111:</u> A Clinically Relevant Rabbit Surgical Model of Pelvic Reconstruction to Evaluate the Regenerative Immune Response to Novel Surgical Materials

Aimon Iftikhar, Alexis Nolfi, Pamela Moalli, Bryan Brown McGowan Institute for Regenerative Medicine / Department of Bioengineering, University of Pittsburgh, USA

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<u>01-P112:</u> Tissue responses following implantation of hydroxyapatitecoated PMMA optical cylinder in a rabbit model

Andri K Riau, Nyein C Lwin, Bo Liedberg, Subbu S Venkatraman, Jodhbir S Mehta

Tissue Engineering and Stem Cell Group, Singapore Eye Research Institute, Singapore / School of Materials Science and Engineering, Nanyang Technological University, Singapore

<u>01-P113:</u> Intraarticular Administration of the Simvastatin-Conjugated Gelatin Hydrogel Attenuates Osteoarthritis Progression in Mice

Toshikazu Tanaka, Takehiko Matsushita, Kyohei Nishida, Koji Takayama, Kanto Nagai, Daisuke Araki, Tomoyuki Matsumoto, Yasuhiko Tabata, Ryosuke Kuroda

Department of Orthopaedic Surgery, Kobe University Graduate School of Medicine, Kobe, Japan

<u>01-P114:</u> Comparative evaluation of maxillary sinus augmentation using dehydrated human amnion/chorion membrane and resorbable collagen membrane to repair the perforated schneiderian membrane

Jeong-Ho Yun, Yun-Young Chang, Seok-Yeong Ko, Yang-Hun Jung Department of Periodontology, Chonbuk National University College of Dentistry, Jeonju, Korea / Biomedical Research Institute, Chonbuk National University Hospital, Jeoniu, Korea

01-P115: Synthesis And Characterization Of Injectable In Situ Enzymatically Serum Hydrogel

Shiun Yu Mao, Ying Chieh Chen, Chi Shuo Chen Deprtment of Biomedical Engineering and Environmental Sciences, National Tsing-Hua University, Hsinchu, Taiwan

<u>01-P116:</u> Blood prefabrication subcutaneous small animal model for bone substitute materials evaluation

Runheng Liu, Guanqi Liu, Shiyu Wu, Yixiong Lin, Zhuofan Chen, Zetao Chen

Guanghua School of Stomatology, Hospital of Stomatology, Sun Yat-sen University , Guangzhou, China

01-P117: Effect of PRP treatment on wound healing in radiation induced skin injury

Sehwan Shim, Hyosun Jang, Hyunwook Myung, Janet Lee, Jae Kyung Myung, Won-Suk Jang, Sun-Joo Lee, Hyewon Kim, Young-Woo Jin, Sunhoo Park

Laboratory of Radiation Exposure & Therapeutics, National Radiation Emergency Medical Center, Korea Institute of Radiological and Medical Sciences, Seoul, Korea

01-P118: Sutureless Fixation of thin transparent collagen film in *ex vivo* corneal model

Sukhyon Jeon, Se Eun Kim, Kwangsik Jang, SeungHyun Kim, Kyung Mi Shim, Chunsik Bae, Seong Soo Kang

College of Veterinary Medicine, BK21 Plus Project Team, and Biomaterial R&BD Center, Chonnam National University, Gwangju, Korea

<u>01-P119:</u> Repair of rabbit radial bone defects using bone morphogenetic protein-2 combined with 3D porous silk fibroin/ β -tricalcium phosphate hybrid scaffolds

Byung-Jae Kang, Jaeyong Song, Junhyung Kim, Heung-Myung Woo, Byungil Yoon, Hyunjung Park, Chanhum Park

College of Veterinary Medicine and Institute of Veterinary Science, Kangwon National University, Korea

<u>01-P120:</u> Functionalization of spider silk with basic fibroblast growth factor and its implication for cell culture and tissue engineering applications

Naresh Thatikonda, Adam Lundin, Linnea Nilebäck, Selina Parvin, Mona Widhe, My Hedhammar

Department of Protein Science, Division of Protein Technology, KTH Royal Institute of Technology, Stockholm, Sweden

01-P121: Relevance of Hyaluronate Molecular Weight for Regenerative Medicine Applications

Miroslava Rysova, Lenka Martinova

Institute for Nanomaterials, Novel Technologies and Innovation, Technical University of Liberec, Liberec, Czech Republic

01-P122: Hydrogels that Promote Cell-Cell Interactions Enhance Therapeutic Activity of Mesenchymal Stromal Cells

Taimoor H Qazi, David J Mooney, Georg N Duda, Sven Geissler Julius Wolff Institute, Charité Universitätsmedizin Berlin, Berlin, Germany

01-P123: Evaluation of nanoclay gel mediated Bone Morphogenetic Protein delivery in an ovine femoral condyle defect

David Mark Gibbs, Cameron Black, Josephine McEwan, Janos Kanczler, Jonathan Ian Dawson, Richard Oreffo Bone and Joint Research Group, University of Southampton, UK

01-P124: M-CSF-treated PLLA Modulates Inflammatory Cytokine Expression and Promotes Angiogenesis

Nianji Yang, Richard P. Tan, Alex H.P. Chan, Juichien Hung, Bob S.L. Lee, Marcela M. Bilek, Shisan Bao, Steven G. Wise The Heart Research Institute, Sydney, Australia / Sydney Medical School, University of Sydney, Sydney, Australia

01-P125: Controllable Preparation of SB-3CT Loaded PLGA

Microcapsules for Traumatic-Brain-Injury Pharmaco-therapy Jumei Xu, Xiaobin Hua, Zhenhao Xi, Liang Shen, Hong Chen, Lian Cen School of Chemical Engineering, East China University of Science and Technology, China

01-P126: Fluorescent Tagging of Interleukin-4 for Visualizing In-Vivo Release from Coated Polypropylene Mesh

Alexis Lauren Nolfi, Daniel Hachim, **Aimon Iftikhar**, Bryan N Brown Department of Bioengineering, University of Pittsburgh, Pittsburgh, Pennsylvania, USA / McGowan Institute for Regenerative Medicine, Pittsburgh, Pennsylvania, USA

<u>01-P127:</u> 4-Hexylresorcinol increased level of MMPs in the macrophages and accelerated proteolysis of silk sutures

KwangGill Lee, Yongchan Lee, Ansook Kim, Yuri Jeong, Jihye Jung Spenser Biomedical technology, Korea

<u>01-P128:</u> Extracellular matrix mimetic injectable hydrogel that stabilize recombinant human bone morphogenetic protein-2 and improve bone formation in vivo

Oommen Varghese, Jons Hilborn, Shujiang Wang, Tommaso Casalini Department of Chemsitry-Angstrom Laboratory, Uppsala University, Sweden

<u>01-P129:</u> Spatiotemporal release of growth factors by localized hydrogel embedding and chemical decoration for enhanced vascularization and bone regeneration

Guocheng Wang, Wei Tang, Dandan Ye Shenzhen Institutes of Advanced Technology, CAS, China

<u>01-P130:</u> Carbodiimide bioconjugation of platelet-rich plasma releasate to sodium alginate

Emily Ann Growney Kalaf, Houston Linder, John G Bledsoe, Frank P Barry, Scott A Sell

Regenerative Medicine Institute, National University of Ireland Galway, Ireland

01-P131: PVA-Heparin Hydrazone Crosslinked Hydrogels for Prolonging Growth Factor Release

Penny Martens, Justine Roberts, Brooke Farrugia, Rylie Green, **Jelena** Rnjak-Kovacina

UNSW Sydney, Australia

<u>01-P132:</u> Heparin-modified Type I-Collagen Gel for Controlled Release of Pleiotrophin for vascular medicine

Francesco Copes, Pascale Chevallier, Caroline Loy, Francesca Boccafoschi, Diego Mantovani

Laboratory for Biomaterials and Bioengineering, Canada Research Chair Tier I for the Innovation in Surgery, Department of Min-Met-Materials Engineering & CHU de Quebec Research Center, Laval University, Quebec City, Quebec, Canada. / Laboratory of Human Anatomy, Department of Health Sciences, University of Piemonte Orientale, Novara, Italy

<u>01-P133:</u> A bilaminated decellularized scaffold with the paracrine factors of mesenchymal stem cells for wound healing

Zhang Wei, Wei xiao hui, Xu bin Department of R&D, Guanhao Biotech Co.,Ltd, Guangzhou, China / National Engineering Laboratory for Regenerative and Implantable Medical Devices, Guangzhou, China

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01-P134: Injectable basic fibroblast growth factor (bFGF)-loaded alginate/hyaluronic acid hydrogel for rejuvenation of aged larynx

Young Hwan Choi, Tae Ho Kim, In Gul Kim, Jin Ho Lee, Seong Keun Kwon

Department of Otorhinolaryngology-Head and Neck, Seoul National University Hospital, Seoul, Korea. / School of Chemical and Biological Engineering, Seoul National University, Seoul, Korea

01-P135: Injectable thermosensitive hydrogel for bone tissue engineering

Seung Hun Park, Hai Bang Lee, Moon Suk Kim Department of Molecular Science and Technology, Ajou University, Suwon, Korea

<u>O1-P136:</u> Fabrication, characterization and biological activity of poly(vinyl alcohol) hydrogel containing chitooligosaccharides conjugated with gallic acid

Seong-Yeong Heo, Hyeon-Ho Park, Gun-Woo Oh, Seok-Chun Ko, Se-Chang Kim, Young-Mog Kim, Won-Kyo Jung Department of Biomedical Engineering, and Center for Marine-Integrated Biomedical Engineering, Microsoft Party American Department, Party Marine, Marine,

Department of Biomedical Engineering, and Center for Marine-Integrated Biomedical Technology (BK21 Plus) Pukyong National University, Busan, Korea / Marine-Integrated Bionics Research Center, Pukyong National University, Busan, Korea

<u>01-P137:</u> Osteogenesis of lower elastic modulus titanium alloy surface immobilized with growth factor-containing gelatin nanoparticles through a natural cross-linker

Nai Chi Chen, Ying Sui Sun, Her Hsiung Huang Institute of Oral Biology, National Yang-Ming University, Taipei, Taiwan

01-P138: Serum Derived Exosomes for the Delivery of Curcumin as Antioxidants

Eunseo Choi, Gayeon You, Hyejung Mok Konkuk University, Seoul, Korea

<u>01-P139</u>: Degradation of S53P4 bioactive glass by osteoclasts

Nicole AP van Gestel, Rienk Schuiringa, Keita Ito, Jacobus J Arts, Sandra Hofmann

Department of Biomedical Engineering, Eindhoven University of Technology, Netherlands / Institute for Complex Molecular Systems, Eindhoven University of Technology, the Netherlands

<u>01-P140:</u> Cell Response to Zirconia Surface Immobilized with Bone Morphogenetic Protein-2 Using A Natural Cross-Linker

Jing Ying Chen, Ying Sui Sun, Her Hsiung Huang Department of Dentistry, National Yang-Ming University, Taipei, Taiwan

01-P141: In vivo evaluation of a novel bioactive bulking agent for the long-term treatment of stress urinary incontinence

Elif Vardar, Hans Mattias Larsson, Eva-Maria Engelhardt, Ganesh Vythilingam, Kalitha Pinnagoda, Pierre Yves Yves Zambelli, Peter Frey Department of Pediatrics, Centre Hospitalier Universitaire Vaudois (CHUV), Lausanne, Switzerland

<u>01-P142:</u> Evaluation of ADSC's Ability to Trans-differentiate into Chondrocyte from Gellan Gum Hydrogel Scaffolds with Platelet-rich plasma

Minjoung Choi, Giwon Lee, Jin Su Kim, Jeong Eun Song, Gilson Khang Dept. of BIN Convergence Technology, Chonbuk National University, Korea

01-P143: Titanium Pins Coated with FGF-2-Apatite Composite Layers for External Fixation

Atsuo Ito, Hirotaka Mutsuzaki, Kengo Fujii, Shinji Murai, Yohei Yanagisawa, Yuki Hara, Yu Sogo, Ayako Oyane, Motohiro Hirose, Masashi Yamazaki

National Institute of Advanced Industrial Science and Technology (AIST), Japan

<u>01-P144:</u> Use of low molecular weight fucoidans, heparan-mimetics from brown seaweed, to design bioreactive bone substitute

Sylvie Changotade, Maroun Bou Karam, Joe El Khoury, Carole Chakar, Sophie Frasca, Jean-Marc Collombet, Geraldine Rohman, Jean-Jacques Lataillade, Didier Lutomski, Nada Naaman, Ronald Younes, Karim Senni

CSPBAT UMR7244, University Paris 13, UFR SMBH, Bobigny, France

<u>01-P145:</u> Cell Response to Zirconia Surface Immobilized with Type I Collagen Using Natural Cross-linker for Dental Implant Applications Chun Miao Hsu. Her Hsiung Huang

Department of Dentistry, National Yang-Ming University, Taipei, Taiwan

<u>01-P146:</u> Immobilization of Platelet-rich Plasma-released Growth Factors on ZrO₂ Dental Implant Surface Using Natural Cross-linker for Enhancing Anti-inflammation and Osteogenisis

Ying Sui Sun, Her Hsiung Huang Department of Dentistry, National Yang-Ming, Taipei, Taiwan

01-P147: Fabrication of Functionalized Hyaluronate-based Terpolymeric Hydrogel with Microporous Architecture for Bioactive Molecules Release and Tissue Engineering Applications

Dipankar Das, Cheol Kang, Insup Noh

Department of Chemical and Biomolecular Engineering / Convergence Institute of Biomedical Engineering and Biomaterials / Seoul National University of Science and Technology, Korea

<u>01-P148</u>: The effects of silk proteins on osteoblast diffentiation

You-Young Jo, HaeYong Kweon, KwangGill Lee

Department of Agricultural Biology, Sericultural & Apicultural Materials Division, National Institute of Agricultural Sciences, Korea

<u>01-P149:</u> Protective effects of platelet gel on radiation induced salivary gland cell damage

Jeong Mi Kim, Ji Won Kim, Young-Mo Kim, Jeong-Seok Choi Inha Research Institute for Medical Sciences, Inha University, School of Medicine, Korea / Department of Otolaryngology, Inha University, School of Medicine, Korea

<u>01-P150:</u> Effect of Fibre Angle of 3D Printed PLA Scaffolds on Human Dental Pulp Stromal Cells' Attachment, Growth and Osteogenic Differentiation in vitro and in vivo

Rasha F. Albannaa, Jennifer Kirkham, Julie Burke, Chaozong Liu, Xuebin Yang

Biomaterials & Tissue Engineering Group, Division of Oral Biology, School of Dentistry, University of Leeds, UK / Department of Oral and Maxillofacial Surgery, College of Dentistry, Mosul, Iraq

<u>01-P151:</u> Developing a new generation of breast implants via multimaterial 3D printing and FEM-guided topology optimization

Mina Mohseni, Xin Yang, Dietmar W. Hutmacher, Nathan J. Castro Institute of Health and Biomedical Innovation, Queensland University of Technology, Brisbane, Australia

01-P152: Graphene Oxide/Chitosan Scaffold As An Electrically Conductive Intermediary Applied In Cardiac Tissue Engineering

Li Li Jiang, Dao Yu Chen, Zhong Min Zhang, Zhen Wang, Yang Liu Xia, Hong Yu Xue

School of Life Science and Medicine, Dalian University of Technology Panjin, Liaoning, China

01-P153: Cell-Seeded Synthetic Scaffold for Esophageal Regeneration

Sherif Soliman, Sumati Sundaram, Tina Roffidal, Jeff Bouchard, William Fodor

Biostage Inc., USA

<u>01-P154:</u> Biofunctionalization of mechanoinducing scaffolds with multilayered cell sheets for the advanced bone tissue engineering

Ekaterina A. Grebenik, Varvara D. Grinchenko, Semyon N. Churbanov, Nikita V. Minaev, Viktor N. Bagratashvili, Yury A. Rochev, Peter S. Timashev

Institute for Regenerative Medicine, Sechenov First Moscow State Medical University, Moscow, Russia

<u>01-P155:</u> Hydrogel mediated relationship between local inflammation and osteogenic capability

Samuele Maria Dozio, Maria Grazia Raucci, Alfredo Ronca, Ugo D'Amora, Anna Tampieri, Hai Lin, Yujiang Fan, Luigi Ambrosio Institute of Science and Technology for Ceramics, National Research Council, Faenza, Italy / Department of Medical Oral and Biotechnological Sciences, University of "G. d'Annunzio" School of Advanced Studies of Chieti-Pescara, Chieti, Italy

<u>01-P156:</u> Ovine Tendon Collagen Type I: A Rapid Treatment of Full Thickness Skin Loss

Mohd Fauzi Mh Busra, Aminuddin Bin Saim, Ruszymah Bt Hj Idrus, Shiplu Roy Chowdhury

Tissue Engineering Centre, UKM Medical Centre, Jalan Yaacob Latiff, Bandar Tun Razak, Cheras, Kuala Lumpur, Malaysia

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01-P157: Tough Tissue-adhesive Hydrogel with Enhanced Tissue Integration and In-situ Forming Capability for Osteochondral Defect Repair

Yi Hong

school of basic medical science, Zhejiang University, China

01-P158: New designed scaffold based on human umbilical cord extracellular matrix and hyaluronic acid for applications in tissue engineering and regenerative medicine

Lucie Wolfova, Karel Vyborny, Eva Filova, Peter O. Bauer, Sarka Kubinova, Martin Pravda

Institute of Experimental Medicine of the CAS, Prague, Czech Republic

01-P159: Double layered hydrogels with 3D textile scaffold for cartilage repair

Jung Soo Kim, Jung Eun Kim, Hyun Ji Lee, Jaeho Choi, Chang Seok Ki, Ki Hoon Lee

Department of Biosystems & Biomaterials Science and Engineering, Seoul National University, Seoul, Kórea

01-P160: Thiol-ene alginate as a versatile bioink for bioprinting of cell laden constructs

Matthew B. Baker, Huey Wen Ooi, Carlos Mota, Andrea Calore, Lorenzo Moroni

Department of Complex Tissue Regeneration, MERLN Institute, Maastricht University, Maastricht, the Netherlands

<u>01-P161</u>: Free-directional printing of novel nanocomposite into selfhealing support hydrogel for skeletal biofabrication

Gianluca Cidonio, Megan E Cooke, Michael Glinka, Yang-Hee Kim, Jonathan I Dawson, Liam M Grover, Richard OC Oreffo Bone and Joint Research Group, Centre for Human Development, Stem Cells and Regeneration, Institute of Developmental Sciences, University of Southampton, Southampton, UK / Engineering Materials Research Group, Faculty of Engineering and the Environment, University of Southampton, Southampton, UK

01-P162: 3D Printing of Silk-Based Bioink for Fabrication of Patient-Specific Intervertebral Disc Implants

Joana Silva-Correia, João Bebiano Costa, Viviana Pinto Ribeiro, Alain da Silva Morais, Lígia Costa, Joaquim Miguel Oliveira, Rui Luís Reis 3B's Research Group-Biomaterials, Biodegradables and Biomimetics, University of Minho, Headquarters of the European Institute of Excellence on Tissue Engineering and Regenerative Medicine, AvePark, Parque de Ciência e Tecnologia, Zona Industrial da Gandra, Portugal/ ICVS/3B's-PT Government Associate Laboratory, Braga/ Guimarães, Portugal

<u>01-P163:</u> Engineering nanotopographically-defined eggshell membrane platforms for biomedical applications

Sunho Park, Sujin Kim, Sungmin Park, Daun Kim, Woochan Kim, Dohyeon Lee, Jangho Kim

Department of Rural and Biosystems Engineering, Chonnam National University, Korea 01-P164: Photo-click Thiol-ene Gelatin Based Hydrogels as Bioinks for

Bioprinting

Khoon S Lim, Gabriella CJ Brown, Bram G Soliman, Gary J Hooper, Jürgen Groll, Tim BF Woodfield

Christchurch Regenerative Medicine and Tissue Engineering Group, Department of Orthopaedics Surgery and Musculoskeletal Medicine, University of Otago Christchurch, New Zealand

01-P165: 3D Printed Scaffold with Controlled Magnesium Ion Release **Promotes Bone Defect Healing**

Jie Shen, Kelvin W K Yeung

Department of Orthopaedics and Traumatology, the University of Hong Kong, Pokfulam, Hong Kong

01-P166: In vitro and in vivo Assessment Of Strontium-substituted Bioactive Glass And Polycaprolactone Composite Scaffolds Produced Via Melt-electrospinning Writing

Jiongyu Ren, Madison Ainsworth, Naomi Paxton, Molly M Stevens, Roland Steck, Keith Blackwood, Dietmar W Hutmacher, Maria Ann Woodruff

Institute of Health and Biomedical Innovation, Science and Engineering Faculty, Queensland University of Technology, Australia

<u>01-P167:</u> 3D Inkjet Printing of Ionically Cross-linked Star Block **Copolymer Hydrogels**

Taichi Ito, Yoshiyuki Nakagawa, Seiichi Ohta, Makoto Nakamura Center for Disease Biology and Integrative Medicine, The University of Tokyo, Tokyo, Japan / Department of Chemical System Engineering, The University of Tokyo, Tokyo, Japan

01-P168: Physical properties of bioprinted hydrogel structures based on decellularized porcine lungs for 3D cell culture

Jorge Otero, Bryan Falcones, Robert A Pouliot, Juan J Uriarte, Daniel J Weiss, Daniel Navajas, Ramon Farre

Unit of Biophysics and Bioengineering, Universitat de Barcelona, Barcelona, Spain / CIBER de Enférmedades Respiratorias, Madrid, Spain

01-P169: Cell Surface Engineering for Controlling Multicellular **Aggregate Formation**

Yusuke Arima, Kosuke Shibanuma, Yusuke Hirai Institute for Frontier Life and Medical Sciences, Kyoto University, Kyoto, Japan

<u>01-P170:</u> Osteoinduction and Mechanical Properties of 3D Printed Calcium Phosphate Scaffolds associated with Human Bone Marrow Mesenchymal Stem Cells

Luciano Vidal, Meadhbh Brennan, Julien De lima, Laura Coquelin, Yassine Maazouz, Maria Pau Ginebra, Paul Humbert, Valérie Trichet, Philippe Rosset, Nathalie Chevallier, Pierre Layrolle Inserm UMR 1238, PHY-OS, Laboratory of Bone Sarcomas and Remodelling of Calcified Tissues, Faculty of Medicine, University of Nantes, Nantes, France

<u>01-P171:</u> Magnetically responsive gelatin methacrylate bioink

David Eglin, Riccardo Tognato, Gabriele Giancane, Mauro Alini, Tiziano Serra

AO Research Institute Davos, Switzerland

01-P172: Osteochondral defect regeneration with a bi-lineage conductive silicone-tricalcium phosphate scaffold

Varitsara Bunpetch, Xiaoan Zhang, Feifei Zhou, Dandan Cai, Shufang

Zhang, Hongwei Ouyang Dr.Li Dak Sum & Yip Yio Chin Center for Stem Cell and Regenerative Medicine, Department of Basic Medicine, Zhejiang University, Hangzhou, China / Key Laboratory of Tissue Engineering and Regenerative Medicine of Zhejiang Province, School of Medicine, Zhejiang University / Center for Stem Cell and Tissue Engineering, School of Medicine, Zhejiang University, Hangzhou, China

01-P173: Agarose-collagen hydrogel blends enable 3D bioprinting of vascularized tracheobronchial models

Marius Johannes Kopf, Franziska Kreimendahl, Daniela Filipa Duarte Campos, Andreas Blaeser, Anja Lena Thiebes, Stefan Jockenhoevel, Horst Fischer

Department of Dental Materials and Biomaterials Research, RWTH Aachen University Hospital, Aachen, Germany

01-P<u>174:</u> Microfluidic bioprinting of cell-laden microfibres

Minghao Nie, Shoji Takeuchi University of Tokyo, Japan

01-P175: Enhancing Bone Repair by Incorporation of Innovative Nanoparticles Containing Osteogenic Factors in Gelatin Methacryloyl Hydrogel Scaffolds

Michael Glinka, Gianluca Cidonio, Jin Geng, Ewa Czekańska, Yang-Hee Kim, Jonathan I. Dawson, Shoufeng Yang, Khoon S. Lim, Tim Woodfield, Mark Bradley, Richard O.C. Oreffo

Bone and Joint Research Group, Centre of Human Development, Stem Cells and Regeneration, Institute of Developmental Sciences, University of Southampton, Southampton, UK

01-P176: Microfluidics-assisted fabrication of microtissues with tunable physical properties for in vitro tissue model

Chaenyunng Cha, Dongjin Lee, Kangseok Lee

School of Materials Science and Engineering, Ulsan National Institute of Science and Technology, Ulsan, Korea / School of Life Sciences, Ulsan National Institute of Science and Technology, Ulsan, Korea

<u>01-P177</u>: Thiol-ene click conjugation of VEGF peptide to electrospun scaffolds for vascularized bone regeneration

Tianyu Yao, Rong Wang, Matthew B Baker, Lorenzo Moroni MERLN Institute, Maastricht University, Maastricht, the Netherlands

01-P178: Shape memory external wall device to prevent vascular stenosis

Jeong-Kee Yoon, Young Min Shin, Jung Bok Lee, Ju Young Park, Hye Ryeon Jang, Geonyeong Lee, Dae-Hyun Kim, Jong-Won Ha, Hak-Joon Sung

Department of Medical Engineering, Yonsei University, Seoul, Korea / Division of Cardiology, College of Medicine, Yonsei University, Seoul, Korea

01-P179: Building a Low-Cost Desktop Bioprinter

Deepak Choudhury. Chi I Wong, Prabhu Pannirselvam, Stefano Calzone, May Win Naing

Bio-Manufacturing Programme, SIMTech A*STAR, Singapore

<u>01-P180:</u> Rational design and fabrication of soft network composites for soft tissue engineering applications: a numerical model-based approach

Onur Bas, Elena M. De-Juan-Pardo, Dietmar W. Hutmacher Centre in Regenerative Medicine, Institute of Health and Biomedical Innovation, Queensland University of Technology (QUT), Kelvin Grove, Brisbane, QLD, Australia / ARC Training Centre In Additive Biomanufacturing, Queensland University of Technology (QUT), Brisbane, QLD, Australia / School of Chemistry, Physics and Mechanical Engineering, Science and Engineering Faculty (SEF), Queensland University of Technology (QUT), Brisbane, QLD, Australia

<u>01-P181:</u> A Single-Network, Biodegradable Hydrogel with High Elasticity for Bioprinting

Yi Hong, Guohao Dai, Cancan Xu, Wenhan Lee Department of Bioengineering, University of Texas at Arlington, Arlington, TX, USA

<u>O1-P182:</u> Alginate-Ceramic Particles based Hybrid Gel as Biomaterial for Bone Tissue Engineering and 3D-Bioprinting

DIPANKAR DAS, Insup Noh

Department of Chemical and Biomolecular Engineering / Convergence Institute of Biomedical Engineering and Biomaterials / Seoul National University of Science and Technology, Korea

01-P183: Development of artificial auricular prosthesis: 3D printed polyurethane scaffold

Ha Yeong Kim, Soo Yeon Jung, Sang Jin Lee, Hyun Ju Oh, Hyeon Jeong Lee, Minh-Dung Truong, Min Ji Lee, Han Su Kim

Department of Molecular Medicine, College of Medicine, Ewha Womans University, Seoul, Korea / Department of Otorhinolaryngology-Head and Neck Surgery, College of Medicine, Ewha Womans University, Seoul, Korea

<u>01-P184:</u> Fabrication of hollow beads with precision pore structures for cell transplantation

Yi Wang, Penglai Gao, Jinyang Wang, Ying Luo Department of Biomedical Engineering, College of Engineering, Peking University Beijing, China

<u>01-P185:</u> Biophysical, biochemical and biological properties of pepsin soluble type II collagen from mammalian and marine tissue sources for cartilage regeneration

Zhuning Wu, Anne Maria Mullen, Ioannis Skoufos, Athina Tzora, Dimitrios Zeugolis

Regenerative, Modular & Developmental Engineering Laboratory (REMODEL), National University of Ireland Galway (NUI Galway), Galway, Ireland / Science Foundation Ireland (SFI) Centre for Research in Medical Devices (CÚRAM), National University of Ireland Galway (NUI Galway), Galway, Ireland

01-P186: Sinterless 3d-printing Of Porous Bioceramics For Bone Tissue Engineering

Iman Roohani

University of New South Wales Sydney, Australia

01-P187: Development of novel light/ionic double-crosslinkable alginate-based bioink for 3D bioprinting

Geunho Choi, Sejeong Yoon, Kye-Il Joo, Sungjune Jung, Hyung Joon Cha

Department of Chemical Engineering, Pohang University of Science and Technology, Pohang, Korea

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01-P188: Characterization of the function of hydroxyapatite in 3D-printed polycaprolactone/nano-hydroxyapatite (PCL/nHA) composite scaffolds

Myoung Hwan Kim, Chulhee Yun, Elna Paul Chalisserry, Seung Yun Nam

Department of Biomedical Engineering, Pukyong National University, Busan, Korea / Interdisciplinary Program of Marine-Bio, Electrical & Mechanical Engineering, Pukyong National University, Busan, Korea / Center for Marine-Integrated Biomedical Technology (BK21 Plus), Pukyong National University, Busan, Korea

01-P189: The Effect of a Novel Bioplotting Hydroxyapatite/Calcium Carbonate Biomaterial on Rat Bone Regeneration

Yunsong Shi, Jinge Zhou, Jing Dai, Baichuan Wang, Zengwu Shao, Chunze Yan, Deganello Davide, Zhidao Xia Centre for Nano Health, Institute of Life Science2, Swansea University Medical School,

01-P190: Digital light processable polymers for complex tissue engineering

Singleton Park, Swansea, UK

Tobias Kuhnt, Rong Wang, Febriyani Damanik, Tessa ten Cate, Aylvin Dias, Lorenzo Moroni, Matt Baker

MERLN Institute for Technology-inspired Regenerative Medicine, Complex Tissue Regeneration Department, Maastricht University, MD Maastricht, the Netherlands

<u>01-P191:</u> Structural and Mechanical Properties of Crosslinked and Sterilized Nanocellulose-based Hydrogels: An "Unconventional" Scaffold for Cartilage Tissue Engineering

Irina Neves Simoes, Ayesha Al-Sabah, Stephanie Elizabeth Anne Burnell, Zita Maria Jessop, Nafiseh Badiei, Emma Blain, Iain Stuart Whitaker

Reconstructive Surgery & Regenerative Medicine Group (ReconRegen), Institute of Life Sciences I, Swansea University Medical School, Swansea, UK

01-P192: A Novel Low-Temperature PCL-Based 3D Printing Resin for Craniofacial Repair

Max Jonah Lerman, Anthony Kohler Chiu, Jesse Kenneth Placone, Anjana Jeyaram, Madelyn Dana Golding, Steven M. Jay, Greg Gillen, John Patrick Fisher

Department of Materials Science and Engineering, University of Maryland, College Park, MD, USA / Surface and Trace Chemical Analysis Group, Materials Measurement Laboratory, National Institute of Standards and Technology, Gaithersburg, MD, USA / Center for Engineering Complex Tissues, University of Maryland, College Park, MD, USA

<u>01-P193:</u> Effect of *in vitro* Generated Extracellular Matrix on Osteogenic Potential of Additive Manufactured Multiscale Porous Hybrid Scaffolds

Betul Aldemir Dikici, Gwendolen Reilly, Frederik Claeyssens Department of Materials Science and Engineering, University of Sheffield, The Kroto Research Institute, North Campus, Broad Lane, Sheffield, UK

<u>01-P194:</u> Microstructural, Mechanical and Biological Characterisation of a Novel Fibrin Scaffold for Skin Tissue Engineering

Catriona B Inverarity, Jimena Cuenca, Duncan Banks, Martin Bootman, Maroun Khoury, Julian F Dye

Department of Life, Health and Chemical Sciences, The Open University, Milton Keynes, UK

01-P195: CaP Coated Biodegradable Mg Drug Loaded Bone Tissue Engineering Scaffold

Jingxin Yang, Antonios Mikos, Gerry Koons, Emma Watson, Eric Molina

Beijing Union University, Beijing, China

<u>01-P196:</u> Biphasic Biodegradeble Osteochondral Scaffold

Xinluan Wang, Xiangbo Meng, Long Li, Yuxiao Lai, Sibylle Grad, Mauro Alini, Ling Qin

Translational Medicine R&D Center, Institute of Biomedical and Health Engineering, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, Shenzhen, China / Musculoskeletal Research Laboratory, Department of Orthopaedics & Traumatology, The Chinese University of Hong Kong, Hong Kong, China

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01-P197: Improved 3D printing fidelity of alginate-based hydrogels with carrageenan

Myoung Hwan Kim, Seung Yun Nam

Department of Biomedical Engineering, Pukyong National University, Busan, Korea / Interdisciplinary Program of Marine-Bio, Electrical & Mechanical Engineering, Pukyong National University, Busan, Korea / Center for Marine-Integrated Biomedical Technology (BK21 Plus), Pukyong National University, Busan, Korea

<u>01-P198:</u> Production of cell-laden microcapsule with liquid core in a coaxial electrospray system through enzymatic crosslinking

Mehdi Khanmohammadi, Jafar Ai

Department of Tissue Engineering,Graduate of Advanced Technologies in Medicine, Tehran Medical University, Tehran, Iran

01-P199: Development of a 3D Printable Composite for Maxillofacial Applications

Nazanin Owji, Jonathan C Knowles, Anne M Young, Elena García-Gareta

Department of Biomaterials and Tissue Engineering, University College London, UK / Institute of Plastic Surgery, RAFT, Mount Vernon Hospital, UK

01-P200: Carboxylated Agarose: A Versatile Material for 3D Bioprinting

Aurelien Forget, Andreas Blaeser, Tim R Dargaville, Florian Miessmer, Anton Blencowe, Horst Fischer, Prasad Shastri Queensland University of Technology, Brisbane, Australia

01-P201: Collagen for Extrusion Bioprinting: a New Bioink for High Fidelity 3D Bioprinting

Egor O. Osidak, Pavel A. Karalkin, Maria S. Osidak, Elena A. Bulanova, Dmitriy S. Sivogrivov, Elizaveta V. Koudan, Sergey V. Krasheninnikov, Vladislav A. Parfenov, Sergei I. Belousov, Frederico DAS Pereira, Timofei E. Grigoriev, Yusef D. Khesuani, Sergey N. Chvalun, Sergey P. Domogatsky, Vladimir A. Mironov

Imtek Ltd., Moścow, Russia / Gamaleya Research Institute of Epidemiology and Microbiology Federal State Budgetary Institution, Ministry of Health of the Russian Federation, Moscow, Russia

<u>01-P202:</u> Effect of after-treatment on the physical and chemical properties and production condition of silk matrix

You-Young Jo, HaeYong Kweon Department of Agricultural Biology, Sericultural & Apicultural Materials Division,

National Institute of Agricultural Sciences, Korea

01-P203: Photocrosslinkable hyperbranched polyglycerol (HPG)-based bioink for 3D printing of soft tissue constructs

Jisu Hong, Chaenyung Cha Department of Material Science and Engineering, Ulsan National Institute of Science and Technology, Ulsan, Korea

01-P204: 3D-Printed Biodegradable

Scaffolds with Micro-Macro-Porous Structure for Tissue Regeneration Tara Shabab, Phong Tran, Dietmar Hutmacher

Institute of Health and Biomedical Innovation, Queensland University of Technology, Brisbane, Australia

01-P205: Mechanical property of bioinks for 3D bio-printer "Inkredible"

Takehito Hananouchi, Erik Dorthe, Jihye Baek, Jason Lee, Shawn Grogan, Darryl D'Lima

Medical Engineering Laboratory, Department of Mechanical Engineering Faculty of Engineering Osaka Sangyo University, Osaka Japan / Shiley Center for Orthopaedic Research & Education at Scripps Clinic, USA

<u>01-P206</u>: Physical Characterisation and Cell Culture Utilising a Set of Plant-Derived Bioprintable Hydrogels

Jaden J. A. Hastings, Luke Weston, Molly Patton, Liam Finlay, Anita F Quigley

St. Vincent Hospital Melbourne, Australia / University of Melbourne, Australia / x0.lab

01-P207: Hydrogel-based Electron Paramagnetic Resonance Probes for Long-term Monitoring of Tissue Oxygen Content

Jianjun Guan, Chao Li, Zheng Huang, Ning Gao, Hong Niu Department of Materials Science and Engineering, The Ohio State University, Columbus, Ohio, USA

<u>01-P208:</u> An Upconversion Nanoparticle-Based Fluorescent Probe for Labeling and Long-term Tracking of Mesenchymal Stem Cells In Vitro

Yufei Ma, Yuan Ji, Minli You, Shurui Wang

School of Life Science and Technology, Xi'an Jiaotong University, Xi'an, China <u>01-P209</u>: Noninvasive Imaging Strategy of Stem Cell-based Bone Regeneration

Sang Jin Lee, Hak Soo Choi, Ji Hoon Park, Moon Suk Kim, Soon Hee Kim, James J Yoo, Anthony Atala

Wake Forest Institute for Regenerative Medicine, Wake Forest School of Medicine, USA

<u>01-P210:</u> Visualization of cell apoptosis by utilizing cationized gelatin nanospheres incorporating molecular beacon

Yuki Murata, Jun-ichiro Jo, Yasuhiko Tabata Laboratory of Biomaterials, Institute for Frontier Life and Medical Sciences, Kyoto University, Kyoto, Japan

01-P211: Dual-modal fluorescence/CT imaging for monitoring

degradation of PLGA scaffold in vivo by labeling with gold nanoclusters Xiangsheng Wang

Department of Plastic and Reconstrucive Surgery, Shanihai Ninth People's Hospital, Shanghai Jiao Tong University School of Medicine, Shanghai, China / Shanghai Key Laboratory of Tissue Engineering, Shanghai, China / National Tissue Engineering Center of China, Shanghai, China

01-P212: Patient-specific bioactive, antimicrobial PLA-PGA/titanium implants for large jawbone defects after tumour resection

Roman Major, Piotr Wilczek, Juergen Markus Lackner, Tomasz Ciach, Marcin Charkiewicz

Institute of Metallurgy and Materials Science, Polish Academy of Sciences, Crakow, Poland

01-P213: The influence of laser-sintered titanium surface properties on attachment of peri-implantitis-associated pathogens

Clotilde Haury, Andrew Wescott, David Beeby, Bryan Austin, Simon Quentin Jones, Wayne Nishio Ayre, Rachel Jane Waddington, Alastair James Sloan

School of Dentistry, Cardiff University, UK / Cardiff Institute of Tissue Engineering and Repair, Cardiff University, UK / Renishaw PLC, Gloucester, UK

01-P214: Saline Accelerates Oxime Reaction with Aldehyde and Keto Substrates at Physiological pH

Sandeep Kadekar, Shujiang Wang, Ganesh N Nawale, Oommen Podiyan Oommen, Naresh K Jena, Sudip Chakraborty, Jöns Hilborn, Oommen P Varghese

Polymer Chemistry Division, Department of Chemistry, Ångström Laboratory, Uppsala University,Uppsala, Sweden

01-P215: Mechanical and biological performance of Fiber-reinforced Calcium Phosphate Cements for Load-bearing bone regeneration

Sonia Lacerda Schickert, Yi Zuo, Jeroen van den Beucken, John A Jansen, Sander CG Leeuwenburgh

Department of Biomaterials, RadboudUMC, Philips van Leydenlaan, Nijmegen, the Netherlands

<u>01-P216:</u> New force-controlled bioreactor for real-time viscoelastic measurements in a model of liver fibrosis

Ludovica Cacopardo, Fiorella Riccio, Jim Veldhuis, Caleb Horst, Giorgio Mattei, Arti Ahluwalia

Research center 'E.Piaggio', University of Pisa, Pisa, Italy / Information Engineering Department, University of Pisa, Pisa, Italy

<u>01-P217:</u> Characterization of mechanoresponsive elements in electrically-stimulated human mammary epithelial cells

Maria Joao Pardelha da Cruz, Amy Gelmi, Spencer William Crowder, Sahana Gopal, Julia Sero, Molly Morag Stevens

Department of Materials, Imperial College London, UK / Department of Bioengineering and Institute for Bioengineering and Biosciences, Instituto Superior Técnico, Universidade de Lisboa, Portugal

<u>01-P218:</u> Influence of several treatments onto the mechanical properties of poly(ε -caprolactone) fibres bundles in the treatment of anterior cruciate ligament rupture

Amelie Leroux, Christophe Egles, Véronique Migonney CSPBAT/Institut Galilee, University of Paris 13, Villetaneuse, France

<u>01-P219:</u> Optimized selection of 3D ceramic scaffolds for large segmental bone defects based on mechanical and fluid dynamical characterization – Application to Baghdadite scaffolds

Romane Blanchard, Christian Daish, Emile Liboutet, Iman Roohani, Hala Zreiqat, Peter F.M. Choong, Dalton Harvie, Peter Pivonka St Vincent's Department of Surgery, The University of Melbourne, Australia

<u>01-P220:</u> Engineering tough and stretchable hydrogels

Daniela Peneda Pacheco, Laura Zorzetto, Ruth Cardinaels, Luca Andena, Paola Petrini

Department of Chemistry, Materials and Chemical Engineering "Giulio Natta", Politecnico di Milano, Milano, Italy

<u>01-P221:</u> Heparin-Poloxamer and Gellan Gum Composite for Enhanced Injectable Hydrogel

Okkyun Choi, JooHee Choi, Yongwoon Jeong, Jeong Hun Lee, Gi Won Lee, Jeong Eun Song, S.V. Berwin Singh, Gilson Khang Department of BIN Convergence Technology, Department of Polymer Nano Science & Technology, Chonbuk National University, Korea

<u>01-P222:</u> Effects of delayed reaction on mineral formation in dentinal tubules

Zutai Zhang, Wensheng He, Yongmei Li, Ning Ding Beijing Institute of Dental Research, School of Stomatology, Capital Medical University, Beijing, China

<u>01-P223:</u> Supermolecule-based culture substrates with tethered BMP-2 enhance osteogenic differentiation

Yoshinori Arisaka, Nobuhiko Yui Department of Organic Biomaterials, Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University, Japan

<u>01-P224</u>: Preparation of cell-laden visible light-responsive collagen gel microarray for high throughput cell sorting

Chie Kojima, Yusuke Nakajima, Kaede Yokoyama, Takeshi Kawano, Kenji Takatsuka, Yusuke Taki, Yuji Haraguchi, Katsuhisa Matsuura, Tatsuya Shimizu

Grad. Sch. of Engineering, Osaka Prefecture University, Osaka, Japan

<u>01-P225:</u> Perfusion culture system using paper-based bilayer scaffold with porous microfibers for effective myotube formation

Masao Maruyama, Keiichi Imato, Naoya Takeda

Graduate School of Advanced Science and Engineering, Waseda University (TWIns), Tokyo, Japan

01-P226: Automated Adherent Cell Elimination by a High-Speed Laser Mediated by a Light-Responsive Polymer

Yohei Hayashi, Junichi Matsumoto, Shohei Kumagai, Kana Morishita, Long Xiang, Yohei Kobori, Seiji Hori, Toshiyuki Kanamori, Kazuhiro Hotta, Kimio Sumaru

RIKEN BioResource Center, Japan

01-P227: Novel Human Pluripotent Stem Cell Expansion Polymers: A High-Throughput Micro Array Discovery Campaign

Laurence Burroughs, Jordan Thorpe, Rob D. Short, Chris Denning, Andrew J. Hook, Morgan R. Alexander

Advanced Materials and Healthcare Technologies, Department of Pharmacy, University of Nottingham, Nottingham, UK

<u>01-P228</u>: Tissue Engineering Approaches Using Piezoelectric Scaffolds

Biranche Tandon, Julio Adrian Aguilar Tadeo, Jonny J Blaker, Sarah H Cartmell

School of Materials, The University of Manchester / Bio-Active Materials Group, School of Materials, The University of Manchester, UK

<u>01-P229:</u> Enhanced myotube formation on the oriented coaxial coresheath microfiber scaffold embedding high conductive polymer without applied voltage

Misa Nakaya, Keita Tanaka, Keiichi Imato, Naoya Takeda Department of Life Science and Medical Bioscience, Graduate School of Advanced Science and Engineering, Waseda University (TWIns), Japan

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01-P230: Fabrication of long luminal tissues in three-dimensional gel scaffolds with oriented cellulose nanofibers

Tomo Tanaka, Keiichi Imato, Kenji Yoneda, Dong Hyun Yoon, Tetsushi Sekiguchi, Shuichi Shoji, Naoya Takeda Department of Life Science and Medical Bioscience, Graduate School of Advanced

Sciènce and Engineering, Waseda University (TWIns), Tokyo, Japan <u>01-P231:</u> Aging Donor-derived Human Mesenchymal Stem Cells Exhibit Reduced Senescence-associated Activities Following Serial Expansion on a PEG-PCL Copolymer Substrate

Mi-Lan Kang, Byeong-Ju Kwon, Jin You, Seong-Mi Yu, Ju Young Park, Geonyeong Lee, Young Min Shin, Hak-Joon Sung Severance Biomedical Science Institute, Yonsei University College of Medicine, Seoul, Korea

<u>01-P232:</u> The sulfation of biomimetic sulfated glycosaminoglycans controls growth factor binding and subsequent cell proliferation and differentiation

Rami Mhanna, Diana El Hajj, Waddah Malaeb Biomedical Engineering Program, American University of Beirut, Lebanon

01-P233: PVA hydrogel as a substrate for adherent culture of neural stem/progenitor cells

Masayuki Hara, Hideki Mori

Dept. of Biological Sci., Grad. Sch. Sci., Osaka Prefecture Univ., Osaka, Japan

<u>O1-P234:</u> Continuous Culture of hESCs on Thermoresponsive Polymer Surface

Lin Kuan-Ju, Akon Higuchi Department of Chemical and Materials Engineering, University of National Central, Taoyuan, Taiwan

01-P235: Thermoresponsive Polymer Brushes with Cell Adhesive Peptides for Cell Separation

Masaki Shimura, Kengo Hanaya, Yuki Hiruta, Kenichi Nagase, Hideko Kanazawa

Faculty of Pharmacy, Keio University, Tokyo, Japan

01-P236: Coaxial electrospun microfibers containing valproic acid for neural tissue engineering applications

Patricia Pranke, Karina Pires Reis, Laura Elena Sperling Hematology and Stem Cell Laboratory, Faculty of Pharmacy, Universidade Federal do Rio Grande do Sul (UFRGS), Porto Alegre, Brazil / Postgraduate Program in Physiology, UFRGS, Porto Alegre, RS, Brazil / Stem Cell Research Institute (Instituto de Pesquisa com Células-tronco), Porto Alegre, RS, Brazil

01-P237: Fabrication of long myotube bundles in three-dimensional gel scaffolds with oriented cellulose nanofibers

Keiichi Imato, Kenji Yoneda, Tomo Tanaka, Dong Hyun Yoon, Tetsushi Sekiguchi, Shuichi Shoji, Naoya Takeda

Department of Life Science and Medical Bioscience, Graduate School of Advanced Science and Engineering, Waseda University (TWIns), Japan

<u>01-P238:</u> Scaffold of wool hair keratin for cell culture Masayuki Hara, Hideki Mori

Dept. of Biological Sci., Grad. Sch. Sci., Osaka Prefecture Univ., Osaka, Japan

01-P239: Functionalization of Cell Culture Surfaces using Human Hair Keratins and Keratin Associated Proteins

Bee Yi Tan, Luong T. H. Nguyen, Terry W.J. Steele, Kee Woei Ng School of Materials Science and Engineering, Nanyang Technological University, Singapore

<u>01-P240:</u> Design of sulfonated polyrotaxane surfaces to activate vascular endothelial cells

Katsuya Hyodo, Yoshinori Arisaka, Satoshi Yamaguchi, Nobuhiko Yui Department of Maxillofacial Surgery, Graduate School of Medical and Dental Sciences, Tokyo Medical and Dental University / Department of Organic Biomaterials, Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University, Japan

01-P241: Neural Stem Cell Behaviors on Iridium Oxide Thin Film and Enhanced Neurite Extension with Electrical Stimulation In-Seop Lee, Shichao Ruan, Xue Bai, Cen Chen Institute of Natural Sciences, Yonsei University, Korea

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01-P242: Interaction of gelatin hydrogels with different mechanical properties and macrophages

Tomoko Morioka, Jo Junichiro, Yasuhiko Tabata Laboratory of Biomaterials, Institute for Frontier Life and Medical Sciences, Kyoto University, Kyoto, Japan

<u>01-P243:</u> Development of simple and convenient system for single cell separation

Airi Seki, Tadashi Nakaji-Hirabayashi, Hiromi Kitano, Yasuto Nishino, Yuki Usui , Takahiro Kishioka

Graduate School of Science and Engineering, University of Toyama, Japan

<u>01-P244:</u> Gelatin hydrogel microspheres improve the activity of multi-layered cell sheet

Shinichi Kadowaki, Keiko Yoshizawa, Yasuhiko Tabata Institute for Frontier Life and Medical Sciences, Kyoto University, Kyoto, Japan

<u>01-P245:</u> Electrochemical Manipulation of an Epithelial Monolayer Supported by a Biodegradable Polymeric Nanosheet for Cell Transplantation Therapy

Hirokazu Kaji, Jin Suzuki, Nobuhiro Nagai, Toshiaki Abe Graduate School of Engineering, Tohoku University, Sendai, Japan

01-P246: VEGF Releasing Fiber Mat for Effective Cardiomyocyte Sheets Transplantation

Kenichi Nagase, Yuhei Nagumo, Miri Kim, Hee-Jung Kim, Hei-Won Kyung, Hye-Jin Chung, Hidekazu Sekine, Tatsuya Shimizu, Hideko Kanazawa, Teruo Okano, Seung-Jin Lee, Masayuki Yamato Faculty of Pharmacy, Keio University, Tokyo, Japan / Institute of Advanced Biomedical Engineering and Science, Tokyo Women's Medical University, Tokyo, Japan

<u>01-P247:</u> Directional topography influences adipose tissue-derived stromal cell differentiation into smooth muscle cells

Gabriel Romero Liguori, Tácia Tavares de Aquinas Liguori, Qihui Zhou, Guilherme Garcia Barros, Philipp Till Kühn, Luiz Felipe Pinho Moreira, Patrick van Rijn, Martin Conrad Harmsen

Cardiovascular Regenerative Medicine Research Group (CAVAREM), Department of Pathology and Medical Biology, University Medical Center Groningen, Groningen, The Netherlands / Laboratório de Cirurgia Cardiovascular e Fisiopatologia da Circulação (LIM-11), Instituto do Coração (InCor), Hospital das Clinicas HCFMUSP, Faculdade de Medicina, Universidade de Sao Paulo, Sao Paulo, Brazil

<u>01-P248:</u> Aqueous Solutions of Poly(2-n-propyl-oxazoline): An Easy-to-prepare Coating of Standard Cell Culture Dishes for Cell Sheet Engineering

Matthias Ryma, Julia Blöhbaum, Raminder Singh, Ana Sancho, Jasmin Matuszak, Iwona Cicha, Jürgen Groll

Department of Functional Materials in Medicine and Dentistry and Bavarian Polymer Insitute, University Hospital Wuerzburg, Wuerzburg, Germany

<u>01-P249:</u> In vitro and in vivo evaluation of human conjunctival epithelial sheets on PLGA membrane co-cultured with human tenon's fibroblasts

Soyoung Hong, Eun-Soon Kim, Ji Seon Kim, Hungwon Tchah, Changmo Hwang

Biomedical Engineering Research Center, Asan Medical Center, Seoul, Korea / University of Ulsan College of Medicine, Seoul, Korea

01-P250: Enzymatic harvesting of cell sheets

Soyoung Hong, Jeong Hye Sunwoo, Ji Seon Kim, Ji Won Lee, Hungwon Tchah, Changmo Hwang

Biomedical Engineering Research Center, Asan Medical Center, Seoul, Korea

<u>01-P251:</u> Preparation of dextran-based polyampholytes for cryopreservation

Kohei Auchi, Masaru Nakada, Jun-ichro Jo, Yasuhiko Tabata Toray Research Center Inc. / Laboratory of Biomaterials, Department of Regeneration Science and Engineering, Institute for Frontier Life and Medical Science, Kyoto University, Japan

<u>01-P252:</u> Tissue Engineered Constructs Based on Neural Precursor Cells, Recombinant Spidroin and PRP for Spinal Cord Injury Treatment (*In vitro* and *in vivo* study)

Vladimir P. Baklaushev, Vladimir G. Bogush, Vladimir A Kalsin, Michael A Konoplyannikov, Oleg V Durov, Jan-Eric Ahlfors

Federal Clinical and Research Center, FMBA of Russia / Institute for Advanced Studies, FMBA of Russia, Russia

01-P253: Alginate Hydrogels to Encapsulate hiPSC-derived Neurons for Parkinson's Disease

Rachael Elizabeth Evans, James B Phillips, Jonathan C Knowles, Victoria H Roberton, Ashleigh S Boyd UCL Centre for Nerve Engineering / Department of Pharmacology, UCL School of Pharmacy / Biomaterials & Tissue Engineering, UCL Eastman Dental Institute, UK

<u>01-P254</u>: Transplantation of RADA16-BDNF peptide scaffold with human umbilical cord mesenchymal stem cells forced with CXCR4 and activated astrocytes for repair of traumatic brain injury

Wei Shi, Chuan Jun Huang, Long Xiang Zhao, Jian Chen, De Kang Nie, Xi De Xu

Neurosurgery Department, Affiliated Hospital of Nantong University, China

<u>01-P255:</u> Improving Functioning of Insulin-secreting Cells by Multicellular Spheroid Formation

Kosuke Kusamori, Makiya Nishikawa Faculty of Pharmaceutical Sciences, Tokyo University of Science, Chiba, Japan

<u>01-P256</u>: Magnetic Cell Therapy With Bioresorbable Nanoparticles: an Attractive Advanced Approach In Regenerative Medicine

Silvia Panseri, Monica Montesi, Alessio Adamiano, Monica Sandri, Anna Tampieri

Institute of Science and Technology for Ceramics - National Research Council of Italy, Italy

01-P257: Regulation of Proliferation and Functioning of Transplanted Cells by Using Suicide Gene

Mari Tsujimura, Kosuke Kusamori, Makiya Nishikawa Faculty of Pharmaceutical Sciences, Tokyo University of Science, Chiba, Japan

01-P258: Injectable and Thermosensitive Hydrogels with High Oxygen Permeability for Stem Cell Therapy

Jianjun Guan, Hong Niu, Zhaobo Fan Department of Materials Science and Engineering, The Ohio State University, Columbus, Ohio, USA

01-P259: A new cell glue for 3D cell structures: Induced cell adhesion

using surface modification with cell-penetrating peptide-PEG-lipid Yuji Teramura, Sana Asif, Kristina N. Ekdahl, Elisabet Gustafson, Bo Nilsson

Department of Bioengineering, The University of Tokyo, Tokyo, Japan / Department of Immunology, Genetics and Pathology (IGP), Uppsala University, Sweden

<u>01-P260:</u> Intra-articular Injection of Alginate-based Microencapsulated Adipose-derived Mesenchymal Stem Cells for the Treatment of Osteoarthritis in Rabbits

Byung-Jae Kang, Seongjae Choi, Jeongho Ha, Bo-Ing Jeong, Yun Chan Jung, Geun-Shik Lee, Heung-Myong Woo College of Veterinary Medicine and Institute of Veterinary Science, Kangwon National

University, Chuncheón, Korea <u>01-P261:</u> Hyaluronic Acid-based Hydrogel (HA) Containing Mesenchymal Stem Cells (MSCs) for Treating Hypofunction of Salivary Gland (SG) after Radiation Therapy (RT)

minrye eom, Ji Suk Choi, Eun-Jae Chung, Jisoo Shin, Hana Cho, Su Yun Kim, Seung-Woo Cho, Seong Keun Kwon Department of Otorhinolaryngology-Head and Neck, Seoul National University Hospital, Seoul, Korea

<u>01-P262:</u> Design of injectable hydrogel system for cell-based therapy Nanami Nishijima, Tadashi Nakaji-Hirabayashi

Graduate School of Science and Engineering, University of Toyama, Japan

01-P263: Bioinspired Dendrimeric Nanoassemblies for Deep Tumor Penetration and Multidrug Resistance Reversal

Zhongwei Gu

National Engineering Research Center for Biomaterials, Sichuan University, Chengdu, China / College of Materials Science and Engineering, Nanjing Tech University, Nanjing, Jiangsu, China

<u>01-P264</u>: Polymer nanomedicines for simultaneous treatment and diagnostics of aggressive lymphomas: a step toward the personalized treatment

Tomas Etrych, Ondřej Lidický, Věra Kolářová, Luděk Šefc, Pavel Klener Department of biomedical polymers, Institute of macromolecular chemistry, CAS, Czech Republic

01-P265: Controlling the Porous Structure of Alginate Ferrogel for Anti-Cancer Drug Delivery

Chunggu Kim, Yeong Tae Choe, Hyunseung Kim, Hyun Ho Roh, Kuen Yong Lee*

Department of Bioengineering, Hanyang University, Seoul, Korea

01-P266: Development of Mesenchymal Stem Cells Modified with **Doxorubicin-loaded Liposomes for Cancer Therapy**

Yukiya Takayama, Kosuke Kusamori, Makiya Nishikawa Faculty of Pharmaceutical Sciences, Tokyo University of Science, Chiba, Japan

<u>01-P267:</u> Sequential growth factor release using enzyme-cleavable microcapsules for in vivo cartilage tissue engineering

Marco Sorbona, James P.K. Armstrong, Mattias Björnmalm, Molly M. Stevens

Department of Materials, Department of Bioengineering, Imperial College London, London, UK

<u>01-P268</u>: Development of N-acetylglucosamine-bearing polymers that interact with type III intermediate filament proteins for targeting various chronic diseases

Hirohiko Ise, Yoshiko Miura

Institue for Materials Chemistry and Engineering, Kyushu University, Fukuoka, Japan

01-P269: Injectable Dual-Protein NanoComplex for Controlled Salivary Gland Radioprotection and Functional Regeneration in Head and Neck Cancer: A Step Closer towards Clinical Translation and Personalization

Ziyad S. Haidar, Ignacio A. Fuentevilla, Consuelo C. Zumarán, Juan Pablo G. Peñaloza, Beatriz A. Alvarez, Marcelo A. Parra, Sergio M. Olate

BioMATX, Facultad de Odontología y Centro de Investigación e Innovación Biomédica, Universidad de los Andes, Santiago de Chile / División de Cirugía Oral y Maxilofacial, Facultad de Odontología y CEMYQ, Universidad de La Frontera, Temuco de Chile, Chile

01-P270: A Novel Production Method of Gelatin Hydrogel Microsphere as a Sustained Release System of Cisplatin Aiming for Clinical Application

Yutaro Kanda, Kenichiro Kakutani, Takashi Yurube, Masaaki Ito, Yuji Kakiuchi, Yoshiki Takeoka, Toru Takada, Yasuhiko Tabata, Kotaro Nishida, Ryosuke Kuroda

Department of Orthopaedic Surgery, Kobe University Graduate School of Medicine, Kobe, Japan

01-P271: Stem Cell-Engineered Nanovesicle Functionalized with **Aptamer for Cartilage Tissue Engineering**

Mi-Lan Kang, Byeong-Ju Kwon, Jin You, Seong-Mi Yu, Jung-Bok Lee, Young-Min Shin, Jeong-Kee Yoon, Hak-Joon Sung Severance Biomedical Science Institute, Yonsei University College of Medicine, Seoul, Korea

<u>01-P272</u>: VEGF delivery by chitosan/poly-cyclodextrin composite sponges for bone tissue engineering

Feng Chai, Carla Palomino Durand, Alice Gauzit-Amiel, Marco Lopez, Fréderic Cazaux, Bernard Martel, Nicolas Blanchemain Lab of biomaterial research, Inserm U1008, University of Lille, Lille, France

01-P273: Multivalent polyaspartamide crosslinker for engineering cell-responsive hydrogels with degradation behavior and tunable physical properties

Chaenyunng Cha, Jinhyeong Jang

School of Materials Science and Engineering, Ulsan National Institute of Science and Technology, Ulsan, Korea

01-P274: Photo-modulated Drug Delivery System for Minimally Invasive **Ophthalmic Injections**

Johan Sebastian Basuki, Fengxiang Qie, Xavier Mulet, Lingli Li, Xiajuan Hao, Chen Hao, Tianwei Tan, Timothy Charles Hughes CSIRO Manufacturing, Clayton, Australia

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01-P275: Anti-inflammation and Wound Healing Efficiency of Thai Silk Fibroin Hydrogels Controlled Releasing Curcumin

Juthamas Ratanavaraporn, Nattakan Chantong, Suthiluk Patumraj, Siriporn Damrongsakkul

Biomedical Engineering Program, Faculty of Engineering, Chulalongkorn University / Skeletal Disorders Research Unit, Faculty of Dentistry, Chulalongkorn University, Thailand

01-P276: Collagen Microgels for Regenerative Medicine

Jose M Rey, Abhay Pandit, Grahame Busby, Manuel Salmerón-Sánchez, Cristina González-García

Collagen Solutions PLC., Nova Business Park, Glasgow, UK. / Division of Biomedical Engineering, School of Engineering, University of Glasgow, Glasgow, UK.

01-P277: Iron oxide nanoparticles-incorporated large scale alginate capsules for biomedical applications

Dohyeon Lee, Sunho Park, Daun Kim, Woochan Kim, Sungmin Park, Sujin Kim, Hoon Seonwoo, Jangho Kim Department of Rural and Biosystems Engineering, Chonnam National University, Korea

01-P278: Design of sulfobetaine polymers for intracellular delivery of drugs

Masaya Yamamoto, Yoshifumi Oishi, Nobuyuki Morimoto Department of Materials Processing, Graduate School of Engineering, Tohoku University, Japan

01-P279: Bio-adhesive polymersome for localized and sustained drug delivery at pathological sites with harsh enzymatic and fluidic environment via supramolecular host-guest complexation

Meiling Zhu, Kongchang Wei, Sien Lin, Gang Li, Liming Bian the Chinese University of Hong Kong, Hong Kong / the Prince of Wales Hospital, Hong Kong

<u>01-P280</u>: Facile fabrication of drug-loaded silica nanoparticles using silica forming peptide-fused self-assembled cage protein

Seung Pil Pack, Mi-Ran Ki, Thi Khoa My Nguyen, Ki Baek Yeo Department of Biotechnology and Bioinformatics, Korea University, Sejong, Korea

01-P281: Collagen-based core-shell nanofibers for long-term drug release

Tosihya Hibino, Shin-ichiro Suye, Satoshi Fujita Department of Frontier Fiber Technology and Science, Graduate School of Engineering, University of Fukui, Japan

01-P282: Theranostic Polymeric Nanoparticles for Cancer Diagnosis and Therapy

Eun Ju Jeong, Young Kyoung Han, Ye Rang Seo, Kuen Yong Lee* Department of Bioengineering, University of Hanyang, Seoul, Korea

01-P283: Nanocomposite design of scaffolds for the protein delivery in tissue regeneration

Ji-Young Yoon, Jung-Ju Kim, Ahmed El-Fiqi, Jun-Hyeog Jang, Hae-Hyoung Lee, Jung-Hwan Lee, Hae-Won Kim Department of Nanobiomedical Science & BK21 PLUS NBM Global Research Center for Regenerative Medicine, Dankook University, Cheonan, Korea / Institute of Tissue

Regeneration Engineering (ITREN), Dankook University, Cheonan, Korea

01-P284: Injectable drug-loaded microsphere systems for sustained drug delivery

Jung Hyun Noh, Seung Hun Park, Hai Bang Lee, Moon Suk Kim Department of Molecular Science and Technology, Ajou University, 206 Worldcup-ro, Yeongtong, Suwon, Korea

01-P285: Efficient Nucleic Acid Delivery System Using Aptamers for **Cancer Targeting Ligands**

Jihyeon Song, Yoon Young Kang, Heesun Jung, Hyejung Mok Department of Bioscience & Biotechnology, Bio/Molecular Infomatics Center, University of Konkuk, Seoul, Korea

<u>01-P286</u>: mechanical and degradation properties of in situ crosslinkable polyamine-based hydrogels for dual-mode drug release kinetics Mirae Kim, Chaenyung Cha

Department of Material Science and Engineering, University of Ulsan National Institute of Science and Technology, Ulsan, Korea



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01-P287: Fabrication and characterization of phlorotannins/poly(vinyl alcohol) hydrogel for wound healing application

Geunhyeong Kim, Hyeon-ho Park, Gun-woo Oh, Seok-chun Ko, Hyoung Shin Lee, Won-kyo Jung

Department of Biomédical Engineering, and Center for Marine-Integrated Biomedical Technology (BK21 Plus), Pukyong National University, Busan, Korea / Marine-Integrated Bionics Research Center, Pukyong National University, Busan, Korea

01-P288: Chemically modified mRNA encoding BMP-2 induces de novo bone formation in a rat critical segmental femur defect

Wen Zhang, Rodolfo De La Vega Amador, Michael J Coenen, Manish K Aneja, Christian Plank, Martijn van Griensven, Christopher H Evans, Elizabeth R Balmavor

Institute of Molecular ¹Immunology and Experimental Oncology, Klinikum rechts der Isar, Technical University of Munich, Munich, Germany

<u>01-P289:</u> Rationally-Designed Peptides for Mitochondrial-Targeted Gene Delivery

Jo-Ann Chuah, Keiji Numata Enzyme Research Team, RIKEN, Japan

01-P290: Gold Bunch Microsphere, a novel injectable gene carrier for clinical application

Hye Jin Kim, Se Won Yi, Hyun Jyung Oh, Jung Sun Lee, Ji Sun Park, Keun Hong Park

Department of Biomedical Science, College of Life Science, CHA University, 6F, CHA Biocomplex, 689 Sampyeongdong Bundang-gu, Seongnam-si, Korea

01-P291: Accelerating sanitary product market entry. Prediction of Bone Biomaterial in vivo behaviour

Julio J Suay, Francisco Romero-Gavilan, Nuno Araujo-Gomes, Marilo Gurruchaga, Iñaki Garcia-Arnaez, Felix Elortza, Ibon Iloro, Mikel Azkargorta, J Javier Martin De Llano, Isabel Goñi

Dpto Ingenieria de sistemas industriales y diseno, Universitat Jaume I, Castellon, Spain 01-P292: Development of Phosphate Based Glass for Possible

Antimicrobial and Biomaterial Applications

Song-Yi Baek, Jonathan C Knowles

Departement of Biomaterial and Tissue Engineering, Eastman Dental Institute, University College London, UK

<u>01-P293:</u> Effect of PLGA based nanoparticles on reproductive system

Sewon Yi, Yeon Sun Kim, Ji Sun Park, Haengseok Song, Keun-Hong Park

Department of Biomedical Science, University of CHA, Korea

<u>01-P294:</u> Synchrotron-Based µ-XRF and nano-XRF Mapping for Assessing Exposure to Metallic Wear and Corrosion Products in Human Peri-Implant Bone/Bone-Marrow

Janosch Schoon, Bernhard Hesse, Dorit Jacobi, Melanie Ort, Simon Reinke, Anastasia Rakow, Carsten Perka, Georg N. Duda, Sven Geissler

Julius Wolff Institute, Charité-Universitätsmedizin Berlin, Berlin, Germany / Berlin - Brandenburg Center & School for Regenerative Therapies, Charité-Universitätsmedizin Berlin, Berlin, Germany

<u>01-P295:</u> Tailor-Made Conductive Bioinks for 3D Printing of Neural Guidelines

Erdem Karabulut, Volodymyr Kuzmenko, Matteo Bordoni, Peter Enoksson, Paul Gatenholm

3D Bioprinting Center, Department of Chemistry and Chemical Engineering, Chalmers University of Technology, Goteborg, Sweden / Wallenberg Wood Science Center, Chalmers University of Technology, Göteborg, Sweden

<u>O1-P296:</u> Water Soluble Ceria Nanoparticle-Embedded Contact Lens for the Treatment of Eye Diseases Caused by Excessive Reactive Oxygen Species

Seung Woo Choi, Bong Geun Cha, Jaeyun Kim

Department of Health Sciences and Technology, Samsung Advanced Institute for Health Sciences & Technology (SAIHST), Sungkyunkwan University (SKKU), Seoul, Korea

<u>01-P297:</u> Novel Antimicrobial, Hyperelastic, Nanofibrous Polyurethane Meshes for Wound Care

Anna L Worsley. Liam Good, Wenhui Song, Janice Tsui Royal Veterinary College / University College London, UK

01-P298: Dual stimuli-responsive PIPAAm-PDMS surfaces for controlling cell attachment and detachment

Yoshikatsu Akiyama, Miki Matsuyama, Naoya Takeda, Masayuki Yamato, Teruo Okano Institute of Advanced Biomedical Engineering and Science, Tokyo Women's Medical

Institute of Advanced Biomedical Engineering and Science, Tokyo women's Medical University, Japan

<u>O1-P299:</u> Role of polyelectrolyte hydrolysis and electrostic attraction in

Gentamicin release from Layer-by-Layer coated silica nanoparticles Stefano Perni, Yazan Al-Thaher, Polina Prokopovich School of Pharmacy, Cardiff University, Cardiff, UK

01-P300: Nanocarriers From Plasma Dust Enhance Gene Delivery in Diverse Cell Types

Praveesuda Lorwattanapongsa Michael, Miguel Santos, Juichien Hung, Bob Lee, Marcela M.M. Bilek, Steven G. Wise The Heart Research Institute. Australia

<u>01-P301:</u> Self-assembling Nanopeptide Hydrogel for the Applications in Tissue Engineering and Regenerative Medicine

Hsi-Chin Wu, Tzu-Wei Wang Department of Bioengineering, Tatung University, Taipei, Taiwan / Department of Materials Engineering, Tatung University, Taipei, Taiwan

01-P302: Comparison among nanostructured biomaterials with different mechanisms and kinetics of bioactivity and antibacterial action

Silvia Spriano, Seiji Yamaguchi, Sara Ferraris, Martina Cazzola, Marta Miola, Enrica Vernè, Andrea Cochis, Caterina Cristallini, Nicoletta Barbani, Inger Odnevall Wallinder, Yolanda Hedberg Politecnico di Torino, DISAT - Corso Duca degli Abruzzi, TORINO, Italy

<u>01-P303:</u> Low concentration of Silver nanoparticles affects the cellular response of Tumor Necrosis factor

Alaa Fehaid, Akiyoshi Taniguchi

Cellular Functional Nanobiomaterials Group, Research Center for Functional Materials, National Institute for Materials Science (NIMS), Tsukuba, Ibaraki, Japan / Department of Nanoscience and Engineering, Graduate School of Advanced Science and Engineering, Waseda University, Tokyo, Japan / Department of Forensic Medicine and Toxicology, Faculty of Veterinary Medicine, Mansoura University, Egypt

<u>01-P304:</u> Design of Core-Shell Polymeric Microgel for Photodynamic Therapy Combined with Photo-triggered Chemotherapy

Junghan Lee, Yixin Jiang, Daehyun Kim, Jieun Park Lab of Nanomedicine, Inha University College of Medicine, Incheon, Korea

<u>01-P305</u>: Chondroitin sulfate derived nanocarriers for targeted drug delivery and immune modulation

Oommen Podiyan Oommen

Faculty of Biomedical Sciences and Engineering & BioMediTech Institute, Tampere University of Technology, Tampere, Finland

01-P306: Development and characterization of free standing biomembranes combining chitosan and natural-nanoliposomes for tissue engineering applications

Franck Cleymand, Emilie Velot, Elmira Arab-Tehranyc, João Mano Institut Jean Lamour (IJL), UMR 7198 CNRS/Universite de Lorraine, Nancy, France

01-P307: New Composite Membranes Polymer-Functionalized Graphene for Haemodialysis

Stefan Ioan Voicu. Andreea Madalina Pandele Department of Analytical Chemistry and Environmental Engineering, University Politehnica of Bucharest, Romania

<u>01-P308</u>: Native collagen hydrogel nanofibers with anisotropic structure using core-shell electrospinning

Satoshi Fujita, Yuka Wakuda, Shohei Nishimoto, Shin-ichiro Suye Department of Frontier Fiber Technology and Science, Graduate School of Engineering, University of Fukui, Japan

<u>01-P309</u>: Corrosion resistance and cell responses of nanoporous oxide layer produced by electrochemical process on 3D-printed titanium alloy scaffolds

Hsin-Wen Chi, Chia-Fei Liu, Her-Hsiung Huang Department of Dentistry, National Yang-Ming University, Taipei, Taiwan

<u>01-P310</u>: Detonation nanodiamonds: the effect of size and surface chemistry on protein corona composition and human cell behavior

Iva Machova, Tereza Belinova, Stepan Stehlik, Romana Hadravová, Martin Hubalek, Bohuslav Rezek, Marie Hubalek Kalbacova Biomedical Center, Faculty of Medicine in Pilsen, Charles University, Pilsen, Czech Republic

<u>01-P311</u>: Study on cell fusion-mediated transdifferentiation via a novel approach

Seongmin Kim, Masashi Ueki, Yasuyuki Sakai, Yoshihiro Ito The University of Tokyo / RIKEN, Japan

01-P312: Anti-inflammatory drug-eluting implant model system to prevent wear particles induced osteolysis

Polina Prokopovich, Stefano Perni, Melissa Rodrigues, Alastair Sloan School of Pharmacy and Pharmaceutical Sciences, Cardiff University, Cardiff, UK

01-P313: Oxygen nanobubbles for the effective delivery of oxygen and drug molecules

Jonghoon Choi

Department of Biomedical Engineering, School of Integrative Engineering, Chung-Ang University, Seoul, Korea

<u>01-P314</u>: Bacterial attachment to nanostructured surfaces

Pawel Kallas, Mats Hulander, Håkon Valen, Martin Andersson, Håvard J Haugen

Department of Biomaterials, Institute of Clinical Dentistry, University of Oslo, Oslo, Norway

01-P315: Polypropylene Fumarate-Functionalized Graphene Oxide **Composite Scaffold for Tissue Engineering**

Andreea Madalina Pandele, Matei Raicopol, Corina Andronescu Analytical Chemistry and Environmental Engineering, Romania

01-P317: Development of Mesoporous Magnetic Hydroxyapatite Nanocrystals for Drug Release

Hsi-Chin Wu, Jing-Yun Lin, Tzu-Wei Wang, Jui-Sheng Sun Department of Bioenagineering, Tatung University, Taipei, Taiwan / Department of Materials Engineering, Tatung University, Taipei, Taiwan

01-P318: Stem cell membrane-cloaked gold nanorods for efficient cancer photothermal therapy

Won-Kyu Rhim, Kyoung-Won Ko, Deogil Kim, Sunghyun Park, Soo-Hong Lee*

Department of Biomedical Science, CHA University, Gyeonggi, Korea

<u>01-P319</u>: Silk Fibroin biomaterial based organoid model of human hair follicle

Abhishak C Gupta, Shikha Chawla, Sourabh Ghosh Department of Textile Technology, Indian Institute of Technology, Delhi, India

01-P320: Semi-synthetic hydrogel matrices for studying differences in cell behavior in 2D and 3D microenvironment

Archana Singh, Prakriti Tayalia Biosciences and Bioengineering, IITB, India

01-P321: 3D Microfluidic Co-Culture System Mimicking Brain Tissue

Jin Kim, Jisoo Shin, Jong Seung Lee, Seung-Woo Cho Department of Biotechnology, Yonsei University, Seoul, Korea

01-P322: Induction and Modulation of Immune Response for Tissue Regeneration

Francesca Taraballi, Bruna Corradetti, Silvia Minardi, Guillermo Bauza, Xin Wang, Aaron Sih, Fernando Cabrera, Ennio Tasciotti Houston Methodist Research Institute, USA

<u>01-P323</u>: Bio-inspired organic/inorganic substrate for bone regeneration: Where physics meets biology

Halima Kerdjoudj, Marie Dubus, Sophie C Gangloff, Christine Terryn, Gregory Francius, Cedric Mauprivez, Hassan Rammal EA4691 BIOS-URCA-France, France

01-P324: Bioactive characteristics on bone regeneration with octacalcium phosphate crystals grown with natural polymers

Osamu Suzuki, Yukari Shiwaku, Takahisa Anada, Susumu Sakai, Kaori Tsuchiva

Division of Craniofacial Function Engineering, Tohoku University Graduate School of Dentistry, Sendai, Japan

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01-P325: Continuously Graded Reduced Graphene Oxide 3D Scaffolds for Bone Regeneration

Maria Camara-Torres, Ravi Sinha, Marco Scatto, Siamak Egtesadi, Rune Wendelbo, Alberto Sanchez, Ainhoa Egizabal, Alessandro Patelli, Carlos Mota, Lorenzo Moroni

MERLN Institute for Technology-Inspired Regenerative Medicine, Maastricht University, Maastricht, the Netherlands

<u>01-P326</u>: Influence of micro- and nano-structure on the osteogenic potency of macroporous calcium phosphate scaffolds

Meadhbh Brennan, Bénédicte Brulin, Kanupriya Khurana, Sara Gallinetti, Cristina Canal, Audrey Renaud, Marie Pau Ginebra, Pierre Lavrolle

Harvard School of Engineering and Applied Sciences, Harvard University, Cambridge USA / National Institute of Health and Medical Research (INSERM) UMR 1238, PHYOS, Faculty of Medicine, University of Nantes, France

<u>01-P327:</u> Pre-Magnetic Treatment and Electrolysis Methods as A Novel Strategy to Obtain Collagen and Apatite-based Multi-layered Scaffold Vincent Irawan, Toshiyuki Ikoma

Department of Materials Science and Engineering, Tokyo Institute of Technoloy, Tokyo lanan

<u>01-P328</u>: Biocompatibility of Novel Electrically Conductive Scaffolds

Petr Humpolicek, Katarzyna Anna Radaszkiewicz, Zdenka Capáková, Jiří Pacherník, Patrycja Bober, Věra Kašpárková, Petra Rejmontová, Marián Lehocký, Pétr Ponížil, Jaroslav Stejskal

Centre of Polymer Systems, Tomas Bata University in Zlin, Czech Republic / Faculty of Technology, Tomas Bata University in Zlin, Czech Republic

01-P329: Controlled Release of Growth Factors from Multifunctional Fibrous or Bioactive Scaffold for Functional Recoveries in Crushed Sciatic Nerve

Hye Jin Hong, Minsu Kim, Kanghee Cho, JiHong Min, ByungJu Yun, Won-Gun Koh, Man Ki Chung

Chemical & Biomolecular Engineering, Yonsei University, Seoul, Korea

<u>01-P330</u>: Design of β -hairpin Peptides Incorporating RGDS for Tissue eEngineering Scaffold

Yoshiaki Hirano, Ryosuke Yokokawa, Ayaki Jo, Sachiro Kakinoki Faculty of Chemistry, Materials and Bioengineering, Kansai University, Osaka, Japan / Organization for Research and Development of Innovative Science and Technology, Kansai University, Osaka, Japan

<u>01-P331</u>: Molecularly Imprinted Gelatin-Based Hydrogel for Tissue **Engineering Applications: Physicochemical Properties**

Rogelio Rodriguez-Rodriguez, Hugo Espinosa-Andrews, Cristina Velasquillo, Yaaziel Melgarejo-Ramírez, Jorge Armando Jiménez-Avalos, Zaira Yunuen Garcia-Carvajal

Medical and Pharmaceutical Biotechnology, Centro de Investigaciony Asistencia en Tecnologiay Diseño del Estado de Jalisco, A C. Guadalajara, Mexico

01-P332: Effect of electrospun nanofibers morphology on the differentiation of mesenchymal stem cells

Irene Carmagnola, Carla Divieto, Monica Boffito, Stefano Pavarelli, Elisa Recchi, Gianluca Ciardelli, Maria Paola Sassi

Department of Mechanical and Aerospace Engineering, Politecnico di Torino, Torino, Italy

<u>01-P333:</u> Shape-Memory ε -Polycaprolactone-Silk Fibroin Anchoring Scaffold for Annulus Fibrosus Repair

Mana Novin, Michael S Kallos, Neil A Duncan Biomedical Engineering Graduate Program, University of Calgary, Calgary, Alberta, Canada / McCaig Institute for Bone and Joint Health, University of Calgary, Calgary, Alberta, Canada

01-P334: Efficacy of Titanium-Wollastonite in promoting Mesenchymal Stem Cell Growth

Lohashenpahan Shanmuganantha, Roslinda Shamsudin, Abu Bakar Sulong, Min Hwei Ng

Department of Tissue Engineering, National University of Malaysia, Selangor Darul Ehsan, Malaysia

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<u>01-P335:</u> Isolation and characterization of nanorod shaped crystalline hydroxyapatite from parrotfish bone

Elna Paul Chalisserry, Seung Yun Nam, Jayachandran Venkatesan, Sukumaran Anil

Interdisciplinary Program of Marine-Biomedical, Electrical and Mechanical Engineering. Center for Marine-Integrated Biomedical Technology (BK21 Plus, Department of Biomedical Engineering, Pukyong National University, Busan, Korea

<u>01-P336:</u> A novel microgrooved collagen scaffold for tendon tissue engineering

Ignacio Sallent, Andrea de Pieri, Dimitrios Zeugolis

Regenerative, Modular and Developmental Engineering Laboratory (REMODEL), Centre for Research in Medical Devices (CURAM), National University of Ireland Galway (NUI Galway), Galway, Ireland

<u>O1-P337:</u> Fabrication and characterization of new hybrid gelatin-based hydrogels for developing skeletal muscle constructs

Ferran Velasco Mallorqui, Xiomara Fernández-Garibay, Andrea García-Lizarribar, Albert García Castaño, Josep Samitier, Javier Ramón-Azcón

Biosensors for Bioengineering group, Institute for Bioengineering of Catalonia (IBEC), The Barcelona Institute of Science and Technology, Barcelona, Spain

<u>01-P338</u>: Preparation and characterization of hydrogels derived from decellularized urinary bladder matrix (UBM) and small intestinal submucosa (SIS)

Junpei Kadota, Yoshihide Hashimoto, Tsuyoshi Kimura, Akio Kishida Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University, Tokyo, Japan

<u>01-P339:</u> The synergistic effects from Intra-articular Injection of N-Acetylglucosamine and Hyaluronic acid with Acellular PLGA Scaffolds for Osteochondral Defect Repair in Rabbits

Hsueh Chun Wang, Ming long Yeh

Biomedical Engineering, National Cheng Kung University, Taiwan <u>01-P340</u>: Influence of Mechanical Strength of Gelatin grafted Poly(D,-L-

Lactide) based Three Dimensional Scaffolds on Cell Proliferation Chelladurai Karthikeyan Balavigneswaran, Sanjeev Kumar Mahto,

Arun Kumar Mahanta, Biswajit Ray, Nira Misra Polymer Engineering Laboratory, School of Biomedical Engineering, Indian Institute of

Technology (Banaras Hindu University), India

<u>01-P341:</u> Silk Fibroin Hydrogels with Different Biodegradation Rates to Improve Cardiac Function after Myocardial Infarction

Yusuke Kambe, Tetsuji Yamaoka

Department of Biomedical Éngineering, National Cerebral and Cardiovascular Center, Osaka, Japan

01-P342: Leaves-inspired micro- and nanostructures as functional scaffolds for stem cell and tissue engineering

Daun Kim, Dohyeon Lee, Sunho Park, Woochan Kim, Sungmin Park, Sujin Kim, Jangho Kim

Department of Rural and Biosystems Engineering, Chonnam National University, Korea

<u>01-P343:</u> Polydopamine coated-radially aligned fibrous scaffolds for guiding directional cell migration

Young Min Shin, Jeong-Kee Yoon, Ju Young Park, Seong Mi Yu, Jin You, Hak-Joon Sung, Jung Bok Lee

Dept. of Biomedical Science, College of Medicine, Yonsei University, Seoul, Korea

<u>01-P344:</u> Effects of Collagen on Physical and Mechanical Properties and Flavonoid Released of Thermosensitive Chitosan/Collagen Hydrogel

Premjit Arpornmaeklong, Suthasinee Inchai, Kittiporn Thanu Department of Oral and Maxillofacial Surgery, Faculty of Dentistry, Thammasat University-Rangsit campus, Thiland

<u>01-P345:</u> Comparative Characterization of Chitosan/Gelatin/ Geothermal Silica Biocomposites in Two-Dimensional Film and Three-Dimensional Scaffold Forms

Yuni Kusumastuti, Francisca Larasati, Dwi Reinaldy Gunawan, Mazaya Najmina, Nur Rofiqoh Eviana Putri, Himawan Tri Bayu Murti Petrus, Mime Kobayashi

Chemical Engineering Department, Universitas Gadjah Mada, Yogyakarta, Indonesia / Bioresource Engineering Group, Chemical Engineering Department, Universitas Gadjah Mada, Yogyakarta, Indonesia

<u>01-P346:</u> Tailored Surface Modification of Polycaprolactone Scaffolds for Improved Cell-Substrate Interactions

Michal Bartnikowski, Saso Ivanovski School of Dentistry, The University of Queensland, Herston, QLD, Australia

01-P347: CHARACTERIZATION OF 3D (65:35) POLY(LACTIC-CO-GLYCOLIC ACID) INCORPORATED WITH FIBRIN AND ATELOCOLLAGEN SCAFFOLDS USING SCANNING ELECTRON MICROSCOPY, POROSITY AND SWELLING TESTS

Muhammad Azri Ifwat Mohamed Amin, Aisyah Hanani Md Ali @ Tahir, AzranAzhim, Mohamed Arshad Mohamed Sideek, MunirahSha'ban Department of Biomedical Science, Kulliyyah of Allied Health Sciences, International Islamic University Malaysia, Kuantan, Pahang, Malaysia

01-P348: Chitosan-grafted-poly(L-lactide) copolymeric scaffolds towards bone tissue engineering

Maria Chatzinikolaidou, Maria Kaliva, Anthie Georgopoulou, Maria Vamvakaki

Department of Materials Science and Technology, University of Crete, Heraklion, Greece / Institute of Electronic Structure and Laser, Foundation for Research and Technology Hellas, Heraklion, Greece

01-P349: Mechanism and optimization study of amphiphilic blockcopolymer in situ gelations as scaffolds for tissue engineering

Hsiu-Chao Lin, Chen-Yi Chen, Chen-Wel Kao, Jyuhn-Huarng Juang, I-Ming Chu

Department of Chemical Engineering, National Tsing Hua University, Hsinchu, Taiwan <u>01-P350</u>: Mechanically competent amniotic membrane based composite

<u>01-P350:</u> Mechanically competent amniotic membrane based composite scaffold for highly aligned tissue fabrication

Hanis Hasmad, Mohd Reusmaazran Yusof, Zainul Rashid Mohd Razi, Ruszymah Bt Hj Idrus, Shiplu Roy Chowdhury Tissue Engineering Centre, UKM Medical Centre, Cheras, Kuala Lumpur, Malaysia

<u>01-P351:</u> Polypyrrole/Alginate Hybrid Hydrogels: Electrically Conductive and Soft Biomaterials for Human Mesenchymal Stem Cell

Culture and Potential Neural Tissue Engineering Applications Goeun Choe, Sumi Yang, Lindy Kang Jang, Semin kim, Jongcheol

Yang, Kisuk Yang, Seung-Woo Cho, Jae Young Lee School of Materials Science and Engineering, Gwangju Institute of Science and Technology (GIST), Gwangju, Korea

<u>01-P352:</u> Synthesis of tyramine-conjugated chondroitin sulfate for the surface modification of magnesium substrate

Sachiro Kakinoki, Mai Yoshikawa, Satoru Nishioka, Yoshiaki Hirano Department of Chemistry and Materials Engineering, Faculty of Chemistry, Materials and Bioengineering, Kansai University / The Organization for Research and Development of Innovative Science and Technology, Kansai University, Japan

01-P353: Design of Barnacle-mimetic Peptide Enhanced Cell Attachment Activity for Tissue Engineering Scaffold

Yoshiaki Hirano, Daisuke Fujii, Sachiro Kakinoki, Kei Kamino Faculty of Chemistry, Materials and Bioengineering, Kansai University, Osaka, Japan / Organization for Research and Development of Innovative Science and Technology, Kansai University, Osaka, Japan

<u>01-P354</u>: Preparation and Characterization of 3D Fibrous Cylinder type Scaffolds for Tissue Regeneration

Tae-Hee Kim, Chae-Hwa Kim, Jung-Nam Im Korea Institute of Industrial Technology(KITECH), Ansan, Korea

<u>01-P355:</u> Fabrication of customized and flexible tubes on the basis of 3D printed sacrificial templates

Suk Hee Park, Ji Eun Lee, Nak Kyu Lee Micro/Nano Scale Manufacturing R&D Group, Korean Institute of Industrial Technology, Ansan-si, Gyeonggi-do, Korea

<u>O1-P356:</u> Self-mineralising synthetic injectable hydrogels for bone repair

Manuel Schweikle, Sindre Hove Bjørnøy, Pawel Sikorski, Håvard Jostein Haugen, Ståle Petter Lyngstadaas, Hanna Tiainen Department of Biomaterials, University of Oslo, Oslo, Norway

<u>01-P357:</u> Micro-dimpled surface atelocollagen enhances the function of primary human hepatocytes

Tetsuro Sato, Kayoko Semura, Ichiro Fujimoto KOKEN Research Center, KOKEN CO., LTD., Tokyo, Japan

<u>01-P358</u>: synthesis and characterization of chitosan-hydroxyapatite thermogels for stem cell delivery

Thulya Cp, Murugan Ramalingam department of physics, VASCSC, ahmedabad, India

<u>O1-P359:</u> Biocompatibility of Porous Polycaprolactone Scaffolds with Incorporated Hydroxylated Multi-walled Carbon Nanotubes Decorated with Magnetic Nanoparticles

Antonin Broz, Malgorzata Swietek, Jacek Tarasiuk, Sebastian Wronski, Waldemar Tokarz, Agata Koziel, Marta Blazewicz, Lucie Bacakova

Institute of Physiology of the Czech Academy of Sciences, Prague, Czech Republic

01-P360: Curcumin Immobilized Polymeric Scaffolds for the Detection of Radical Molecules

Ok Park, Heesun Jung, Yoon Young Kang, Hyejung Mok Department of Bioscience & Biotechnology, Bio/Molecular Informatics Center, Konkuk

University, Seoul, Korea

<u>01-P361:</u> The size of composite strands in TE scaffolds – how important is and what can influence on?

Zaneta Gorecka, Emilia Choinska, Joanna Idaszek, Wojciech Święszkowski

Faculty of Materials Science and Engineering, Warsaw University of Technology, Poland

01-P362: A New Technique To Retain Biomolecules On The Surface Of Ceramic Scaffolds

Iman Roohani, Panthipa Suwannakot, Fabio Lisi, Justin Gooding University of New South Wales Sydney, Australia

01-P363: Tissue Adhesive, Rapid Forming, and Sprayable ECM Hydrogel via Recombinant Tyrosinase Crosslinking

Kyungmin Kim, Su-Hwan Kim, Nathaniel S. Hwang Interdisciplinary Program in Bioengineering, Seoul National University, Seoul, Korea / School of Chemical and Biological Engineering, Seoul National University, Seoul, Korea

<u>01-P364</u>: The Evaluation on Extracellular Matrix Compositions of Decellularized Meniscus Tissues by The Developed Sonication Treatment for Tissue Engineering Application

Fatihah Yusof, Aqilah Hazwani, Munirah Sha'ban, Azran Azhim Department of Biomedical Sciences, Kulliyyah of Allied Health Sciences, International Islamic University Malaysia, Jalan Sultan Ahmad Shah, Bandar Indera Mahkota, Kuantan, Pahang Darul Makmur, Malaysia

<u>O1-P365:</u> Effectiveness of a Combined Therapy which is Decompression Surgery with Platelet-rich Plasma Injections and Wrapped Biodegradable Dermal Substitute for Preventing Recurrence of Carpal Tunnel Syndrome Mehmet Bozkurt, Perçin Caskan, Bilgehan İlker, Can Uslu

Department of Plastic, Reconstructive and Aesthetic Surgery, Bagcilar Education and Research Hospital, University of Health Sciences, Istanbul, Turkey

01-P366: Synthesized Magnesium-Zinc-Calcium Alloys with Improved Bio-corrosion Behavior for Bone Regeneration Applications

Kobra Tahermanesh, Abbas Fazel Anvari-Yazdi, Seyedeh Mehr Abed Iran University of Medical Sciences (IUMS), Tehran, Iran

01-P367: Controlled release of Small Molecules for Cardiac Differentiation of Pluripotent Stem Cells

Jeffrey G Jacot, Christopher J Tsao, Dillon Jarrell, Mallory Lennon, Ennio Tasciotti

Department of Bioengineering, University of Colorado, Aurora, CO, USA

<u>01-P368:</u> Cell recognizable biomaterials for cell adhesion and proliferation in regenerative medicine

SokeLee Siew, Teiko Shibata-Seki, Masato Nagaoka, Mitsuaki Goto, Toshihiro Akaike

Foundation for Advancement of International Science, Japan

<u>O1-P369:</u> Bioactive Coatings on PEEK for Dental Implant Applications Nihad Hasan Al-Furaiji, Gorkem Yumusak, Adrian Leyland, Duncan Wood, Ihtesham Ur Rehman

Department of Materials Science and Engineering, Kroto Research Institute, University of Sheffield, Broad Lane, Sheffield, UK; / Department of Materials Science and Engineering, University of Sheffield, Sir Robert Hadfield Building, Mappin St, Sheffield, UK

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<u>01-P370:</u> Human tissue derived stem cells and their impact on *Staphylococcus aureus* behavior.

Fany Reffuveille, Céline Mongaret, Hassan Rammal, Jennifer Varin-Simon, Emilie Charpentier, Cédric Mauprivez, **Sophie C Gangloff**, Halima Kerjdoudj

Biomatériaux et inflammation en site osseux (EA 4691 BIOS), Pôle Santé, Université de Reims Champagne Ardenne, Reims, France

<u>01-P371:</u> Directly induced neural differentiation of human mesenchymal stem cells using electrical conductivity of PANI based gold nanoparticles (PbGNPs) with electrical shock

Jungsun Lee, Keun Hong Park, Hye Jin Kim, Hyun Jyung Oh, Se Won Yi, Ji Sun Park

Department of Biomedical Science, College of Life Science, CHA University, CHA Biocomplex, Sampyeongdong Bundang-gu, Seongnam-si, Korea

<u>01-P372:</u> Lithium modified clay nanoparticles for injectable osteogenic stem cell microenvironment

Mohamed Abdelsattar Mohamed Mousa, Oscar Kelly, Jane Doyle, Nicholas D. Evans, Richard O. C. Oreffo, Jonathan I. Dawson University of Southampton, UK

<u>01-P373:</u> Cellular Layer-by-Layer Coculture Platform using Biodegradable, Nano-thin, and nano-porous Membranes for Stem Cell Therapy

Mungyo Jung, Seungmi Ryu, Jin Yoo, Jin Han, Kookheon Char, Byung-Soo Kim

School of Chemical and Biological Engineering, Seoul National University, Seoul, Korea

<u>01-P374:</u> Customizable platelet lysate based hydrogels for 3D cell culture

Catarina Custodio, Sara Santos, **João F. Mano** Department of Chemistry, CICECO - Aveiro Institute of Materials University of Aveiro, Aveiro, Portugal

01-P375: Crosslinker Selection Determines the Properties of GelNOR Hydrogels for Tissue Engineering Applications

Daniel John Secker, Khoon S Lim, Gabriella CJ Brown, Tim BF Woodfield, Lin-Hua Jiang, Xiaodong Jia, Xuebin B Yang Department of Oral Biology, University of Leeds, Leeds, UK

<u>01-P376:</u> Characterization of the osteochondral potential of a novel three-layered scaffold using hAdMSCs

Elisabeth Amann, Francisco J. Sola Dueñas, Amisel Amirall, Albina R. Franco, Isabel B. Leonor, Rui L. Reis, Martijn van Griensven, **Elizabeth R. Balmayor**

Experimental Trauma Surgery, Klinikum rechts der Isar, TU Munich, Munich, Germany

<u>01-P377:</u> Core-shell Structured Polymeric Particles Obtained Through a Solvent-free Strategy

Ana M.S. Costa, João F. Mano

CICECO, Department of Chemistry, University of Aveiro, Aveiro, Portugal

01-P378: Evaluation of the functionality of osteocytic network in 3D culture

jing zhou, Marina Rubert, Jolanda Baumgartner, Jianhua Zhang, Nicolas Broguière, Marcy Zenobi-Wong, Ralph Müller Zhejiang university, China / Swiss Federal Institute of Technology, ETH, Zurich, Switzerland

<u>01-P379:</u> In vitro evaluation of 3-dimensional poly (lactic acid-coglycolic acid) hybridized with atelocollagen and fibrin bioscaffold composite for annulus fibrosus regeneration

Mohd Yusof Mohamad, Muhammad Azri Ifwat Mohamed Amin, Ahmad Hafiz Zulkifly, Munirah Sha'ban

Department of Physical Rehabilitation Sciences, Kulliyyah of Allied Health Sciences, International Islamic University Malaysia,Jalan Sultan Ahmad Shah, Kuantan, Pahang, Malaysia

<u>01-P380</u>: Designing multifunctional laminarin microparticles for 3D cell culture

Catarina Custodio, Cláudia Martins, **João F. Mano** Department of Chemistry, CICECO - Aveiro Institute of Materials University of Aveiro, Aveiro, Portugal

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01-P381: Advanced Injectable Nanopatterned Micro-Scaffolds for Modular Bone Tissue Engineering

Isabel M. Bjorge, Clara R. Correia, **João F. Mano** Department of Chemistry, CICECO - Aveiro Institute of Materials, University of Aveiro, Campus Universitario de Santiago, Aveiro, Portugal

01-P382: Self-Assembling Peptide-Based Hydrogels for the 3D Culture and Differentiation of Induced Pluripotent Stem Cells into Cardiomyocytes

Kyle A. Burgess, Aline F. Miller, Delvac Oceandy, Alberto Saiani School of Materials, The University of Manchester / Manchester Institute of Biotechnology, The University of Manchester, UK

01-P383: 3D cell cultures via porous scaffolds for dentin regeneration

Samuele Maria Dozio, Silvia Panseri, Monica Montesi, Elisabetta Campodoni, Monica Sandri, Anna Tampieri

Institute of Science and Technology for Ceramics, National Research Council, Faenza, Italy / Department of Medical, Oral and Biotechnological Sciences, University of "G. d'Annunzio" School of Advanced Studies of Chieti-Pescara, Chieti, Italy

01-P384: Engineering Controlled Release of Therapeutic Cargo from Photodegradable Hydrogel Carriers using Near-Infrared Light and Upconversion Nanoparticles

Stacey C Skaalure, Debora Castel, Shaodong Zhang, Muthu Jayakumar, Yong Zhang, Molly M Stevens Department of Materials, Imperial College London, London, UK

01-P385: Tuneable Spheroidal Hydrogel Particles for Cell and Drug Encapsulation

Isabel M. Bjorge, Ana M. S. Costa, A. Sofia Silva, João P. O. Vidal, J. Miguel Nóbrega, **João F. Mano**

Department of Chemistry, CICECO - Aveiro Institute of Materials, University of Aveiro, Campus Universitário de Santiago, Aveiro, Portugal

<u>01-P386:</u> Development of 3D new tissue for bladder reconstructive surgery

Silvia Veronica Lopez Rodriguez, Diana Ramirez Saénz, Aaron De Jesus Palacios Rodríguez, Alejandro Angeles Navarro

Parque Cientifico y Tecnologico de la Universidad Iberoamericana Leon, Promocion de la Cultura y la Educacion Superiros del Bajio, AC., Mexico

<u>01-P388:</u> Multiscale reconstruction of a synthetic biomimetic microniche for enhancing and monitoring the differentiation of stem cells

Rui Li, Jinming Li, Jianbin Xu, Dexter Siu Hong Wong, Liming Bian Department of Biomedical Engineering, The Chinese University of Hong Kong, Shatin, New Territories, Hong Kong

<u>01-P389:</u> Piezoelectric scaffolds for tendon repair through electromechanical stimulation: an in vitro and in vivo study

Marc Fernandez, Aitor Larrañaga, Arun Thirumaran, Matteo Palma, Abhay Pandit, Manus Biggs

National University of Galway, Ireland

01-P390: Endothelial Cell Activation by Surface-Modified Materials Used to Enrich Progenitor Cells Derived from Human Adult Peripheral Whole Blood

Mohd Fuad Rahmat Sam, Nicholas P. Rhodes, Judith M. Curran, John A. Hunt

Institute of Ageing and Chronic Disease, University of Liverpool, UK

01-P391: Adjusting Diffusion and Hypoxia in 3D Alginate Co-Culture Constructs as a Biomimetic Analogue of Intervertebral Discs

Emily Ann Growney Kalaf, Frank P Barry Regenerative Medicine Institute, National University of Ireland Galway, Ireland

<u>01-P392:</u> Injectable Collagen Matrices with Bio-Instructive Properties for Dentin-Pulp Regeneration

Marco C Bottino, Divya Pankajakshan, Sherry Voytik-Harbin, Jacques Nor

Department of Cariology, Restorative Sciences, and Endodontics, University of Michigan, Ann Arbor, Michigan, USA

01-P393: Hardening and biological properties of nanoparticle-based cement

MinSil Kang, Na-Hyun Lee, Jung-Hwan Lee, Hae-Hyoung Lee, Hae-Won Kim

Institute of Tissue Regeneration Engineering, Dankook University, Cheonan, Korea / Department of Nanobiomedical Science and BK21 PLUS NBM Global Research Center for Regenerative Medicine, Dankook University, Cheonan, Korea

01-P394: Microfilm-inspired high-throughput platform to screen 3D cell-materials interactions

Luca Gasperini, Andreia F Carvalho, Raquel S Ribeiro, Alexandra P Marques, Rui L Reis

3B's Research Group - Biomaterials, Biodegradables and Biomimetics, University of Minho, Headquarters of the European Institute of Excellence on Tissue Engineering and Regenerative Medicine, AvePark, Taipas, Guimarães, Portugal / ICVS/3B's-PT Associated Laboratory, Portugal

<u>01-P395</u>: Novel Alginate Hydrogels: Two Modes of Degradation and Dual Crosslinking for Local Patterning of Biophysical and Biochemical Properties

Aline Lueckgen, Daniela S Garske, Agnes Ellinghaus, Rajiv M Desai, Peter Fratzl, David J Mooney, Georg N Duda, Amaia Cipitria Julius Wolff Institute & Center for Musculoskeletal Surgery, Charite -Universitaetsmedizin Berlin, Germany

<u>01-P396:</u> Design of a novel microfeatured poly (glycerol sebacate) methacrylate (PGSM) scaffolds for corneal regeneration

Iris C Becerril-Rodriguez, Sheila MacNeil, Frederik Claeyssens Department of Materials Science and Engineering, Faculty of Engineering, University of Sheffield, UK

<u>01-P397:</u> Evaluation of Stem Cell Behavior in Different Alginate Hydrogel Consistencies

Patricia Pranke, Carolina Albrecht, Natasha Maurmann Hematology and Stem Cell Laboratory, Faculty of Pharmacy, Universidade Federal do Rio Grande do Sul (UFRGS), Porto Alegre, Brazil / Postgraduate Program in Physiology, UFRGS, Porto Alegre, Brazil / Stem Cell Research Institute (Instituto de Pesquisa com Células-tronco), Porto Alegre, Brazil

<u>01-P398</u>: Application of carbon nanotubes/silver (CNTs/Ag) – carboxymethylcellulose (CMC) films for differentiating embryo-derived stem cells into neuron-like cells

Hyun Jyung Oh. Se Won Yi, Hye Jin Kim, Jung Sun Lee, Ji Sun Park, Keun Hong Park

Department of Biomediacal science, collage of Life science, CHA University, Sampyung-dong, Bundang-gu, Seongnam-si, Gyenggi-do, Korea

<u>01-P399:</u> Effect of Bioengineered Three-Dimensional Hyaluronic Acid Hydrogels on the Signaling Pathways during Mesenchymal Stem Cell Chondrogenesis

Bogyu Choi, Jinsung Ahn, Soo-Hong Lee Department of Biomedical Science, CHA University, Korea

<u>01-P400:</u> Influence of nitric acid treatment of 3D-printed titanium on osteoblast differentiation of bone marrow mesenchymal stem cells

Steven James Avery, Clémence Odille, David Beeby, Bryan Austin, Wayne Nishio Ayre, Alastair James Sloan, Rachel Jane Waddington Oral and Biomedical Sciences, School of Dentistry, Cardiff University, Cardiff, UK

<u>01-P401:</u> A screening platform to discover novel cell-adhesion peptides for 3D cell culture applications

Aurelien Forget, Nick Huettner, Tim R. Dargaville Queensland University of Technology, Brisbane, Australia

<u>01-P402:</u> Current Challenges and Future Opportunities for Biomaterials In Tissue Engineering and Regenerative Medicine Rena Bizios

Dept. of Biomedical Eng, U of Texas at San Antonio, San Antonio, TX, USA

01-P403: Pre-clinical Evaluation of Novel Mucoadhesive Bilayer Patches for Local Delivery of Clobetasol-17-Propionate to the Oral Mucosa

Helen E Colley, Zulfhami Said, Martin E Santocildes-Romero, Sarah R Baker, Katy D'Apice, Jens Hansen, Lars Siim Madsen, Martin H Thornhill, Paul V Hatton, Craig Murdoch School of Clinical Dentistry, University of Sheffield, Sheffield, UK

<u>01-P404:</u> Tissue engineered biphasic silk fibroin scaffolds improve tendon-to-bone healing in a patellar tendon model

Martijn van Griensven, Sebastian Andreas Müller, Nicholas Quirk, Sònia Font Tellado, Walter Bonani, Antonella Motta, Claudio Migliaresi, Michael J. Coenen, Christopher H. Evans, Elizabeth R. Balmayor

Department of Experimental Trauma Surgery, Klinikum rechts der Isar, Technical University of Munich, Munich, Germany / Musculoskeletal Gene Therapy Group, Rehabilitation Medicine Research Center, Mayo Clinic, Rochester, MN, USA

<u>01-P405:</u> An Antibiotic-Eluting Scaffold with a Microbially Induced Dual-Release Mechanism for the Treatment of Osteomyelitis

Eamon J Sheehy, Amro Widaa, Peter O' Donnell, Emily Ryan, Alan Ryan, Gang Chen, Robert T Brady, Steven Kerrigan, Fergal J O'Brien Tissue Engineering Research Group, Department of Anatomy, Royal College of Surgeons in Ireland, Dublin, Ireland / Trinity Centre for Bioengineering, Trinity College Dublin, Dublin, Ireland / Advanced Materials and Bioengineering Research Centre, Trinity College Dublin, Dublin, Ireland

<u>01-P406:</u> Laminin heparin-binding peptides promiscuously bind growth factors and enhance diabetic wound healing

Jun Ishihara, Ako Ishihara, Kazuto Fukunaga, Priscilla Briquez, Michael White, Koichi Sasaki, Jeffrey Hubbell University of Chicago, USA

01-P407: Material-driven fibronectin nanonetworks rescue collagen IV secretion in mutant cells

Marco Cantini, Elie Ngandu Mpoyi, Andrés J. García, Tom Van Agtmael, Manuel Salmerón-Sánchez

Division of Biomedical Engineering, School of Engineering, University of Glasgow, Glasgow, UK

<u>01-P408:</u> Evaluation of Extracellular Matrices Derived From Various Tissue Sources to Modulate Mesenchymal Stromal Cell Differentiation *in vitro* and to Promote Functional Musculoskeletal Tissue Repair *in vivo*

David Browe, Olwyn Mahon, Pierluca Pitacco, Aisling Dunne, Conor Buckley, Daniel Kelly

Trinity Centre for Bioengineering, Trinity Biomedical Sciences Institute, Trinity College Dublin, Dublin, Ireland / Department of Mechanical and Manufacturing Engineering, School of Engineering, Trinity College Dublin, Ireland / Advanced Materials and Bioengineering Research Centre (AMBER), Dublin, Ireland

<u>01-P409:</u> A human-derived biomaterial for the automated production of 3D skin models

Jessica Polak, Stephan Cecil Fox, Marianne Schmid Daners, Mirko Meboldt

Product Development Group Zurich, Department of Mechanical and Process Engineering, ETH Zurich, Switzerland

<u>01-P410:</u> Complex Coacervation of Gelatin Methacryloyl and Alginate Facilitates Toughness and Ductility of Bioactive Double-Network Hydrogels for Functional Cartilage Tissue Engineering

Christoph Meinert, Karsten Schrobback, Alicja Kosik-Kozioł, James P.K. Armstrong, Amy Ward, Wojciech Święszkowski, Molly M. Stevens, Dietmar W. Hutmacher, Travis J. Klein

Institute of Health and Biomedical Innovation, Science and Engineering Faculty, Queensland University of Technology, Brisbane, Australia

<u>01-P411:</u> 3D Hybrid Structures for the Pre-Vascularization of Bone Tissue Engineered Constructs

Sara C. Neves, Aureliana Sousa, Carlos Mota, Lorenzo Moroni, Cristina C. Barrias, Pedro L. Granja

i3S - Instituto de Investigação e Inovação em Saúde, Universidade do Porto, Porto, Portugal / INEB - Instituto de Engenharia Biomédica, Universidade do Porto, Portugal / FEUP - Faculdade de Engenharia da Universidade do Porto, Dep. de Engenharia Metalúrgica e de Materiais, Portugal / CTR/MERLN - Institute for Technology-Inspired Regenerative Medicine, Maastricht University, the Netherlands

<u>O1-P412:</u> The study of non-ionic surfactant alkyl polyglucoside for decellularizing porcine small intestine submucosa as dental membrane

Wen-Yu Su, Che-Yung Kuan, Chen-Ying Wang, Ying-Chih Lin Department of Bioinformatics and Medical Engineering, Asia University, Taiwan

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<u>01-P413:</u> Improve cardiac repair with MI bone marrow c-kit+ stem cells and human heart valve-derived scaffold

Yao Chen, Song Xue, Dafu Shen, Long Wan, Yang Liu, Mingjun Du Stem Cell Research Center, Re Ji Hospital, School of Medicine, Shanghai Jiao Tong University / Cardiovascular surgery department Re Ji Hospital, School of Medicine, Shanghai Jiao Tong University, China

01-P414: Adjusting Cell Activity on Collagen-Based Biomaterials for Cardiovascular Repair

Jean-Daniel M Malcor, Daniel V Bax, Natalia Davidenko, Maria T Colzani, Sanjay Sinha, Emma J Hunter, Richard W Farndale Department of Biochemistry, University of Cambridge, Cambridge, UK

<u>01-P415:</u> Osteoinductive extracellular matrix coated graphene oxidecollagen composite scaffolds for bone regeneration

Shaokai Liu, Shan Mou, Jiaming Sun, Zhenxing Wang Department of Plastic Surgery, Union Hospital, Tongji Medical College, Huazhong University of Science and Technology, Wuhan, China

<u>01-P416</u>: The transition of extracellular matrix and alpha-gal antigen of rat lung scaffold reseeded by human vascular and adipogenic stromal cells

Yasumasa Hashimoto, Tomoshi Tsuchiya, Ryouichiro Doi, Naoto Matsuo, Go Hatachi, Fumio Fukai, Takuya Iyoda, Yoshikazu Higami, Eiji Kobayashi, Keitaro Matsumoto, Takuro Miyazaki, Ryotaro Kamohara, Lawn Murray, Naoya Yamasaki, Takeshi Nagayasu Department of Surgical oncology, Nagasaki University Graduate School of Biomedical Sciences, Nagasaki, Japan / Medical-Engineering Hybrid Professional Development Center, Nagasaki University Graduate School of Biomedical Sciences, Nagasaki, Japan

01-P417: Nature healing-inspired collagen-binding mussel proteinbased hydrogel for scarless wound regeneration

Eun Young Jeon, Bong-Hyuk Choi, Dooyup Jung, Byeong Hee Hwang, Hyung Joon Cha

Department of Chemical Engineering, Pohang University of Science and Technology (POSTECH), Pohang, Korea

01-P418: A Novel Injectable Bone Allogenic Substitute for Maxillo-facial Skeleton Regenerative Medicine

Pierre Tournier, Aymeric Maltezeanu, Arnaud Paré, Julie Lesoeur, Maëva Dutilleul, Joëlle Veziers, Alexis Gaudin, Ana Barbeito, Raphaël Bardonnet, Valérie Geoffroy, Pierre Corre, Jérôme Guicheux, Pierre Weiss

Inserm, UMR, RMeS, Regenerative Medicine and Skeleton, Universite de Nantes, ONIRIS, Nantes, France / BIOBank SAS, Presles-en-Brie, France

<u>01-P420:</u> Electrospun patches containing anti-fungal agents inhibit *Candida albicans*

Katharina Helen Clitherow, Tahani M Binaljadm, Jens Hansen, Craig Murdoch, Sebastian G Spain, Paul V Hatton

School of Clinical Dentistry, University of Sheffield, Sheffield, UK

<u>01-P421:</u> Fabircation of Synthetic hydrogel injectable filler for soft tissue engineering

 $\ensuremath{\text{Sujin Kim}}$ Byung Ho $\ensuremath{\text{Shin}}$, Jung Hee $\ensuremath{\text{Shim}}$, Kangwon Lee, Chan Yeong Heo $\ensuremath{\text{Heo}}$

Department of Transdisciplinary Studies, Graduate School of Convergence Science and Technology, Seoul National University, Seoul, Korea / Department of Plastic and Reconstructive Surgery, Seoul National University Bundang Hospital, Seongnam, Korea

01-P422: Ibuprofen-loaded biomaterials for controlled local delivery to treat peripheral nerve injuries

Melissa Lucy Doreen Rayner, Alessandra Grillo, Jess Healy, James Benjamin Phillips

School of Pharmacy, University College London, London, UK / UCL Centre for Nerve Engineering, London, UK

01-P423: Immunosuppressive PLGA TGF- β1 Microparticles Induce Antigen-Specific T Cell Tolerance for Enhancing Islet Transplantation Outcomes

Ying Li, Anthony W Frei, Steven D Barash, Cherie L Stabler J. Crayton Pruitt Family Department of Biomedical Engineering, University of Florida, Gainesville, FL, USA. / Interdisciplinary Graduate Program in Biomedical Sciences, College of Medicine, University of Florida, Gainesville, FL, USA

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<u>01-P424:</u> A selenium nanoparticle - calcium phosphate coating system on scaffolds for antimicrobial, bone regeneration applications

Phong Anh Tran, Cedryck Vaquette, Dietmar W. Hutmacher School of Chemistry, Physics and Mechanical Engineering, Queensland University of Technology, Australia

<u>01-P425:</u> A Thermogelling Hyaluronic Acid Vaginal Stent to Reduce Postoperative Vaginal Scarring

Omar M Wyman, Chih-Wei Hsu, Mary E Dickinson, Julie Hakim Division of Pediatric Adolescent Gynecology, Baylor College of Medicine, Houston, TX, USA

01-P426: Mechanical Strength, Biodegradation, and *In Vitro* and *In Vivo* Biocompatibility of Zn-Based Biomaterials for Cardiovascular and Orthopedic Applications

Donghui Zhu, Yadong Wang, Liping Tang, Yufeng Zheng University of North Texas, USA

<u>01-P427</u>: Development for the macro-encapsulating device for isolation of immune response which is made of Ethylene vinyl alcohol

Masako Kawagoe, Yoshio Satou, Goro Kobayashi, Hiroyuki Kitano, Akira Ito, Yusuke Ando, Yuji Shiba, Shoichiro Sumi Molding Component Business Department, KURARAY CO., LTD., Japan

<u>01-P428</u>: Preparation of biodegradable hydrogels of in situ gelation for cell transplantation

Mina Anamizu, Yasuhiko Tabata

Laboratory of Biomaterials, Institute for Frontier Life and Medical Sciences, Kyoto University, Kyoto, Japan

<u>01-P429:</u> Multifunctional protein microdevice designed to cope with excess reactive oxygen species

Hironori Yamazoe

National Institute of Advanced Industrial Science and Technology (AIST), Osaka, Japan

<u>01-P430:</u> Development for the macro-encapsulating device for isolation of immune response which is made of Ethylene vinyl alcohol

Masako Kawagoe, Yoshio Satou, Goro Kobayashi, Hiroyuki Kitano, Akira Ito, Yusuke Ando, Yuji Shiba, Shoichiro Sumi Molding Component Business Department, KURARAY CO., LTD., Japan

<u>01-P431:</u> Graphene coated 3-dimensional conductive mat as a neural electrode

Patcharin Chen, Jason Marroquin, Helena C Parkington, John S Forsythe

Department of Materials Science and Engineering, Monash Institute of Medical Engineering, Monash University, Melbourne, Australia / Department of Physiology, Biomedicine Discovery Institute, Monash University, Melbourne, Australia

<u>01-P432:</u> Fabrication of calcium phosphate-loaded carboxymethyl cellulose non-woven sheets for bone regeneration

Pan Qi, Shinsuke Ohba, Yuichi Hara, Masaya Fuke, Takayuki Ogawa, Seiichi Ohta, Taichi Ito

Graduate School of Medicine and Faculty of Medicine, University of Tokyo, Japan

<u>01-P433</u>: Anti-inflammatory and osteogenenic effects on PLGA/ Inorganic composites for orthopedic applications

Dong Keun Han, Seul Ki Lee, Wooram Park, Ik Hwan Kim Department of Biomedical Science, CHA University, Seongnam, Korea

01-P434: Bio-devices for Hard Tissue Regeneration

A M Ballamurugan Bharathiar University, India

01-P435: A novel peritoneal adhesion barrier composed of ultrapure alginates of different molecular weights

Taichi Ito, Seiichi Ohta, Takeo Toda, Rihito Nagata, Atsushi Shimizu, Fuyuki F. Inagaki, Ayano Fujisawa, Katsue Morii, Kiyohiko Omichi, Norihiro Kokudo, Kiyoshi Hasegawa

Center for Disease Biology and Integrative Medicine, The University of Tokyo, Tokyo, Japan / Department of Bioengineering, The University of Tokyo, Tokyo, Japan

<u>01-P436:</u> Mesenchymal stem cells response to hybrid functionalized collagen membrane for dental applications

Halima Kerdjoudj, Marie Dubus, Lea Aubert, Fabienne Quiles, Halima Alem, Sophie C Gangloff, Fany Reffuveille, Cedric Mauprivez, Hassan Rammal

BIOS-URCA-France, France

01-P437: Minimally-invasive cell transportation method for cell sheet based regenerative medicine

Yoshimi Ohyabu, Kyoko Fujii, Shunji Yunoki, Hiroyuki Ida, Masataka Ida, Yosuke Hiraoka

Biotechnology Group, Tokyo Metropolitan Industrial Technology Research Institute, Japan

01-P438: Osteogeneic Enhancing Short Peptide with Biodegradable Polymer as a New Bone Hemostatic Material

Aika Yamawaki-Ogata, Hiroto Suenaga, Tsukasa Ohno, Kei Kanie, Ryuji Kato, Koichiro Uto, Mitsuhiro Ebara, Hideki Ito, Yuji Narita Department of Cardiac Surgery, Graduate School of Medicine, Nagoya University, Japan

<u>01-P439:</u> Improved Antimicrobial Performance of a Novel Mechanically Blended Biodegradable Polymer Blend

Shi Yun Tong, Zuyong Wang, Poon Nian Lim, Eng San Thian Department of Mechanical Engineering, National University of Singapore, Singapore

<u>01-P440:</u> Preparation of Polyaniline Films in Colloidal Dispersion Mode: Cytocompatibility Study

Zdenka Capakova, Věra Kašpárková, Petr Humpolíček, Patrycja Bober, Jaroslav Stejskal, Miroslava Trchová, Petra Rejmontová, Ita Junkar, Marián Lehocký, Miran Mozetič

Centre of Polymer Systems, Tomas Bata University in Zlin, Zlin, Czech Republic 01-P441: Development of Novel Biodegradable Metals for Bone Tissue

Engineering

Yufeng Zheng, Kazuki Takashima, Liqun Ruan International Research Organization for Advanced Science and Technology(IROAST), Kumamoto University, Japan

01-P442: A metal-chelating

collagen conjugate as building block of wound healing devices He Liang, Stephen Russel, David Wood, Giuseppe Tronci

Clothworkers' Centre for Textile Materials Innovation for Healthcare, School of Design, University of Leeds, UK / Biomaterials and Tissue Engineering Research Group, School of Dentistry, St. James's University Hospital, University of Leeds, UK

<u>01-P443:</u> Comparison of wound healing effect of collagen and dECM in rat excisional skin wound splinting model

Do-guk Yoon, Kyung Mi Shim, Se Eun Kim, Euisin Yang, Joo-Yun Won, Jin-Hyung Shim, Seong Soo Kang

College of Veterinary Medicine, BK21 Plus Project Team, and Biomaterial R&BD Center, Chonnam National University, Gwangju, Korea

01-P444: Novel Role of Exendin-4 in Tendon Regeneration

Sama A Abdulmalik, Daisy Ramos, Augustus D Mazzocca, Swetha Rudraiah, Sangamesh G. Kumbar

Department of Biomedical Engineering, University of Connecticut, Storrs, CT, USA / Departmet of Orthopaedic Surgery, University of Connecticut Health Center, Farmington, CT, USA

<u>01-P445</u>: Self-organized nonamer and hexamer peptides as components of potential scaffolds for regenerative medicine

Elzbieta Menaszek, Weronika Strzempek, Ewa Stodolak-Zych, Maciej Bogun, Beata Kolesinska

Department of Cytobiology, Jagiellonian University, Krakow, Poland

<u>01-P446:</u> Biocompatibility and oxidative stress induced by modified carbon nanofibres

Elzbieta Menaszek, Ewa Stodolak-Zych, Aneta Fraczek-Szczypta, Marta Blazewicz

<u>01-P447:</u> Hemocollagene[®] foam provides a mimicking MSCs niche environment

Cedric Mauprivez, Lea Aubert, Marie Dubus, Hassan Rammal, Laura Entz, Céline Mongaret, Julie Lesieur, Sophie C Gangloff, Catherine Chaussain, Halima Kerdjoudj EA BIOS URCA, France

01-P448: Honey Mimetic in situ Forming PEG-based Hydrogel with Antibacterial Properties

Jeddah Marie Garrucho Vasquez, Sigen A, Luca Pierucci, Sofia Kivotidi, Qian Xu, Xiaolin Li, Manon Venet, Hind Eddahani, Sean McMahon, Ayesha Idrees, Irene Carmagnola, Valeria Chiono, Udo Greiser, Wenxin Wang

Department of Mechanical and Aerospace Engineering, Politecnico di Torino, Turin, Italy / Vornia Biomaterials Ltd., Dublin, Ireland / Charles Institute of Dermatology, University College Dublin, Dublin, Ireland

<u>01-P449:</u> Improvement of Antibacterial Activity of Chitosan Membrane by Grafting of Quaternary Ammonium Groups

Kuo-Yu Chen, Pai-Han Chen, Kuan-Ming Chen Department of Chemical and Materials Engineering, National Yunlin University of Science and Technology, Yunlin, Taiwan

PO4. Brain / Spinal cord / Peripheral nerve

<u>01-P450:</u> LOTUS/CRTAC1B promoted axonal regeneration and functional recovery after spinal cord injury in adult mice

Shuhei Ito, Narihito Nagoshi, Osahiko Tsuji, Kota Kojima, Shinsuke Shibata, Munehisa Shinozaki, Morio Matsumoto, Kohtaro Takei, Masaya Nakamura, Hideyuki Okano

Department of Orthopaedic Surgery, Keio University School of Medicine, Tokyo, Japan / Department of Physiology, Keio University School of Medicine, Japan

<u>01-P451</u>: Combining Biomaterials, Stem Cells and Pharmacology to Repair the Injured Spinal Cord: Is the Whole Greater Than the Sums of Its Parts?

Nuno A. Silva, Rui Lima, Susana Monteiro, Eduardo D Gomes, Jorge Cibrão, Jose Graça, Antonio J. Salgado

ICVS - Life and Health Sciences Research Institute, School of Medicine, University of Minho, Braga, Portugal / ICVS/3B's - PT Government Associate Laboratory, Braga/ Guimarães, Portugal

<u>01-P452:</u> Tissue engineered nerve grafts containing local immune regulators are suitable for peripheral neural tissue engineering

Xin Tang, Yumin Yang, Yahong Zhao Jiangsu Key Laboratory of Neuroregeneration, Co-Innovation Center of Neuroregeneration, Nantong University, Nantong, JS, China

<u>01-P453:</u> Resveratrol Treatment Downregulates the Expression of Aquaporin-4 and -9 in Diabetic Rats

Yusufhan Yazir, Gokhan Duruksu, Selen Polat, Selcen S Gocmez, Tijen Utkan

Center for Stem Cell and Gene Therapies Research and Application, Kocaeli University, Kocaeli, Turkey / Department of Stem Cell, Institute of Health Sciences, Kocaeli University, Kocaeli, Turkey / Department of Histology and Embryology, Medical School, Kocaeli University, Kocaeli, Turkey

<u>01-P454</u>: Characterization of chemokine expression profile by tissue damage and human cord blood cell administration in neonatal mouse ischemia-reperfusion brain injury model

Nobuyasu Baba, Feifei Wang, Yuan Shen, Tatsuyuki Yamashita, Masayuki Tsuda, Emi Tsuru, Kimiko Takaishi, Yusuke Sagara, Nagamasa Maeda

Center for Innovative and Translational Medicine, Kochi University Medical School, Kochi, Japan

<u>01-P455:</u> Comparison of detergent-based decellularization methods for generation of decellularized peripheral nerve allografts: an in vitro and in vivo study

Charlot Philips, Jesús Chato, Annelies Roosens, Fernando Campos, Víctor Carriel, Heidi Declercq

Tissue Engineering and Biomaterials Group, Department of Basic Medical Sciences, Faculty of Medicine and Health Sciences, Ghent University, Ghent, Belgium

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<u>01-P456</u>: Directing and promoting neuronal outgrowth and nonneuronal cell migration using phosphate glass fibres embedded in engineered neural tissue for peripheral nerve regeneration

Kulraj Singh Bhangra, Jonathan C Knowles, Rebecca J Shipley, David Choi, James B Phillips

Biomaterials & Tissue Engineering, UCL Eastman Dental Institute, London, UK / Pharmacology, UCL School of Pharmacy, London, UK

01-P457: Peripheral nerve regeneration by porcine small intestinal submucosa

Il Woo Lee

Department of Neurosurgery, Catholic Univesity of Korea, Seoul, Korea

01-P458: Extracellular matrix/polydopamine-contained 3D printed nerve conduits for promoting nerve regeneration

Ming-Wei Lin, Yu-Fang Shen, Yueh-Sheng Chen, Ming-You Shie Master Program for Biomedical Engineering, China Medical University, Taichung, Taiwan / 3D Printing Medical Research Center, China Medical University Hospital, Taichung, Taiwan

01-P459: A Drug-Eluting 3D Biprinted Mesh for Treatment of Glioblastoma Multiforme

Mohsen Akbari, Bahram Mirani, Reihaneh Hosseinzadeh, Brian D Toyota, Saeid Ghavami

Department of Mechanical Engineering, University of Victoria, Canada

01-P460: Bioink Formulations of Hyaluronic Acid Hydrogels for Applications in Nerve Regeneration after Spinal Cord Injury Emi A. Kiyotake, Michael S. Detamore

Stephenson School of Biomedical Engineering, University of Oklahoma, Norman, Oklahoma, USA

<u>01-P461:</u> In-Vitro Study of Electrospun PLGA Nanofibers for Future Nerve Conduit

Izzat Al-Fattah, Sharina Khalid, **Angela Ng**, Mohamed Haflah NH, Shalimar A, Ruzymah BHI

Tissue Engineering Center, HUKM, Malaysia

01-P462: Detecting tumorigenicity following hiPSC-NS/PCs using clinical applicable PET-CT and MRI

Yuji Tanimoto, Narihito Nagoshi, Osahiko Tsuji, Kota Kojima, Yuichiro Nishiyama, Nobuhiro Nitta, Sayaka Shibata, Ichio Aoki, Tomoteru Yamasaki, Ming Rong Zhang, Morio Mastumoto, Yasuhisa Fujibayashi, Masahiro Jinzaki, Hideyuki Okano, Masaya Nakamura Department of Orthopaedic Surgery, Keio University School of Medicine, Tokyo, Japan / Department of Physiology, Keio University School of Medicine, Tokyo, Japan

01-P463: Ultrasound-induced neurite outgrowth in primary neurons for axonal regeneration

Noboru Šasaki, Nobuki Kudo, Hiroshi Ohta, Mitsuyoshi Takiguchi Laboratory of Veterinary Internal Medicine, Hokkaido University, Sapporo, Japan

01-P465: Mechanically induced neuroinflammation to reproduce peri-electrode gliosis macro environment

Alexandre Florent Trotier, Laoise McNamara, Manus Biggs Centre for Research in Medical Devices; National University of Ireland, Galway, Ireland

<u>01-P466:</u> The problem of translation – how can we advance regenerative cell therapies for human paralysis?

William E Johnson, Ibtesam R Aldelfi, Chelsea R Wood, Martyn Snow, Peter Myint, John F Innes University of Chester, UK

<u>01-P467</u>: Improvement of renal function after human umbilical cord mesenchymal stem cell treatment on chronic renal failure and thoracic spinal cord entrapment: a case report

Andi Praja Wira Yudha Luthfi, Ahmad Jabir Rahyussalim, Ifran Saleh, Tri Kurniawati

University of Indonesia / Department of Orthopaedic and Traumatology, Indonesia

<u>01-P468:</u> The regulatory effect of macrophages on osteocytes Yinghong Zhou, Shengfang Wang, Yin Xiao

the Institute of Health and Biomedical Innovation, Queensland University of Technology, Australia

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<u>01-P469:</u> Development of 3D stem cell aggregates with neuroprotective and angiogenic functions for treating ischemic stroke

Chieh-Cheng Huang, Yin-Cheng Huang

Institute of Biomedical Engineering, National Tsing Hua University, Hsinchu, Taiwan

01-P470: Laminin coated pHEMA-MOETACl hydrogel in the treatment of spinal cord injury

Pavla Jendelova, Jiri Ruzicka, Nataliya Romanyuk, Klara Jirakova, Ales Hejcl, Olga Janouskova, Martin Pradny, Marcel Bochin, Lydia Vargova Institute of Experimental Medicine Czech Academy of Science, Prague, Czech Republic

<u>01-P471:</u> Dynamics of spinal cord injury in vivo using two-photon microscopy

Barbora Svobodova, Ondrej Zelenka, Ondrej Novak, Pavla Jendelova 2nd Faculty of Medicine, Charles University, Prague, Czech Republic / Institute of Experimental Medicine, Academy of Sciences, Prague, Czech Republic

<u>01-P472:</u> Human Wharton's Jelly-derived Mesenchymal Stem Cells Therapy for Sciatic Nerve Injury in Rat

Changhyun Jeong, Suk Young Park, Jae Kwang Kim Asan Institute for Life Sciences, ASAN Medical Center, Seoul, Korea

<u>01-P473:</u> Neural Probe with Electrically Controllable Delivery of Manganese Ions for Synchronous High-Resolution Neural Tracing with Deep Brain Stimulation

San-Yuan Chen, Wei-Chen Huang

Department of Materials Science and Engineering, National Chiao Tung University, Taiwan

<u>01-P474:</u> Analysis of transduction efficiency and tropism of AAV serotypes in chronic spinal cord injury

Yutaka Hoshino, Kenji Nishide, Jun Kohyama, Narihito Nagoshi, Kota Kojima, Osahiko Tsuji, Morio Matsumoto, Hideyuki Okano, Masaya Nakamura

Department of Orthopaedic Surgery, Keio University School of Medicine, Tokyo, Japan / Department of Physiology, Keio University School of Medicine, Tokyo, Japan

01-P475: Enhancing peripheral nerve tissue engineering using gene and cell therapy

Francesca Busuttil, Michael P Hughes, James B Phillips, Ahad A Rahim Department of Pharmacology, UCL School of Pharmacy, UCL, London, UK

<u>01-P476</u>: Remote control of cell signalling using tagged magnetic nanoparticles for neuronal cell differentiation- emerging cell therapies for Parkinsons disease

Michael Rotherham, Tasmin Nahar, Timothy Goodman, Timothy Hopkins, Adam Studd, Neil Telling, Monte Gates, Alicia J El Haj Institute for Science and Technology in Medicine, Keele University, Stoke-on-Trent, UK

01-P477: 3D Bioprinting Coupled With Electrospinning of Conductive PPY/SF Scaffold for Neural tissue Engineering Applications

Yumin Yang, Yahong Zhao, Xin Tang Key Laboratory of Neuroregeneration, Nantong University, Jiangsu, China

<u>01-P478:</u> Network formation on a biochip: a PEM based micropatterned plateform for guidance, regulation, and real time monitoring of neural network formation

I-Chi Lee, Yung-Chiang Liu, Kin Fong Lei

Graduate Institute of Biochemical and Biomedical Engineering, Chang Gung University, Taoyuan, Taiwan / Neurosurgery Department, Chang Gung Memorial Hospital, Linkou, Taiwan

01-P479: Characterization of Midbrain organoids on chip: an in vitro disease model for Parkinson's research

Julie Rosser, Jens Schwamborn, Silvia Bolognin, Cristian Zanetti, Peter Ertl

University of Technology, Vienna, Austria

<u>01-P480:</u> An Injectable Hydrogel with a Hierarchical Anisotropic Architecture

Abdolrahman Omidinia Anarkoli, Rahul Rimal, Jonas Christopher Rose, Laura De Laporte

DWI-Leibniz Institute for Interactive Materials, Aachen, Germany

01-P481: Nanostructured Scaffolds Based on Bioresorbable Polymers and Graphene Oxide to Promote Neurogenesis

Aitor Larranaga, Igor Irastorza, Jon Luzuriaga, Juan Manuel Encinas, José Ramón Pineda, Fernando Unda, Gaskon Ibarretxe, Jose Ramon Sarasua

Department of Mining-Metallurgy Engineering and Materials Science & POLYMAT, University of the Basque Country, UPV/EHU, Bilbao, Spain

01-P482: Nerve Guide Conduits with Intraluminal Guidance Cues for Peripheral Nerve Regeneration

Jonathan Field, Adam J Harding, John W Haycock, Frederik Claeyssens, Fiona M Boissonade School of Clinical Dentistry, University of Sheffield, Sheffield, UK

01-P483: Combined Nonwoven-Hydrogel Scaffold for Spinal Cord Tissue Engineering

Ben Golland, Giuseppe Tronci, Joanne Tipper, Richard Hall, Stephen Russell

Institute of Medical & Biological Engineering (IMBE), University of Leeds, Leeds, UK

01-P484: Injury-induced multipotent stem cells; characteristics and future perspective for stroke patients

Toshinori Takagi, Kotaro Tatebayashi, Mikiya Beppu, Yoji Kuramoto, Akiko Nakano Doi, Rika Sakuma, Takayuki Nakagomi, Tomohiro Matsuyama, Shinichi Yoshimura

Department of Neurosurgery, Hyogo College of Medicine, Nishinomiya, Japan

<u>01-P485:</u> Characterisation of Nestin-GFP Expression in the Spinal Cord of Transgenic Mice

Catherine S Colquhoun, Jim Deuchars, Susan A Deuchars School of Biomedical Sciences, University of Leeds, Leeds, UK

<u>01-P486:</u> Neurogenesis of Neural Stem/Precursor Cells: Start from Serum Fractions

Yi-Chen Ethan Li

State Key Laboratory of Pulp and Paper Engineering, South China University of Technology, USA

<u>01-P487</u>: Neurotrophic Effects of *Centella asiatica* (L.) Urban on Differentiation of Human Mesenchymal Stem Cells *In Vitro*

Norazzila Omar, Yogeswaran A/L Lokanathan, Ruszymah Hj. Idrus Tissue Engineering Center, Universiti Kebangsaan Malaysia Medical Center, Cheras, Kuala Lumpur, Malaysia

<u>01-P488:</u> Development of a novel co-culture system of recapitulating the interaction between endothelial cells and neural cells in the blood-brain barrier

Saki Kouno, Kennedy Omondi Okeyo, Taiji Adachi Graduate School of Biostudies, Kyoto University, Kyoto, Japan

<u>01-P489:</u> 3D *in vitro* blood capillaries, towards a model of the blood brain barrier

Agathe Figarol, Daichi Hikimoto, Michiya Matsusaki Department of Applied Chemistry, Osaka University, Osaka, Japan

01-P490: Delivering engineered neural tissue within peripheral nerve repair conduits

Adam George Edward Day, Melissa Rayner, James B Phillips Department of Biomaterials and Tissue Engineering, Eastman Dental Institute, UCL, London, UK

01-P491: Investigation of a 3D Brain Angiogenesis Model Mimicking CNS Developmental Stages

Kazuya Kibo, Takuya Higuchi, Mizuki Ichikawa, Hiroyuki Uwamori, Ryo Sudo

School of Integrated Design Enginnering, Keio University, Yokohama, Japan

<u>01-P492:</u> Effect of Matrix Substrate Composition on Neuronal Regeneration in Microporous Nerve Guidance Conduits

Alan Hibbitts. Simon Archibald, Fergal O'Brien Tissue Engineering Research Group, Department of Anatomy, Royal College of Surgeons in Ireland, Ireland / Trinity Centre for Bio-engineering, Trinity College Dublin (TCD), Dublin, Ireland / Advanced Materials and Bioengineering Research (AMBER) Centre, RCSI and TCD, Dublin, Ireland

01-P493: Extracellular Topographical and Chemical Cues for **Acceleration of Neuronal Development**

Sunho Park, Dohyeon Lee, Woochan Kim, Daun Lee, Sungmin Park, Sujin Kim, Jangho Kim

Department of Rural and Biosystems Engineering, Chonnam National University, Korea 01-P494: A preclinical 3D model for testing nerve guidance conduits

using high throughput light-sheet microscopy

Mehri Behbehani, Frederik Claeyssens, John W Haycock The University of Sheffield / Department of Materials Science and Engineering/Kroto Research Institute, Sheffield, UK

01-P495: Fabrication of a Versatile Three-Dimensional Nerve Model

Afonso B Malheiro, Paul Wieringa, Lorenzo Moroni

MERLN Institute, Maastricht University, Maastricht, the Netherlands

01-P496: Modeling human iPSCs derived neurons with peptide amphiphile supramolecular nanostructures

Zaida Alvarez, Alberto Ortega, Kohei Sato, Ivan Ramos Sasselli, Alexandra Nichole Edelbrock, Evangelos Kiskinis, Samuel Isaac Stupp Simpson Querrey Institute for bioNanotechnology, Northwestern University, Chicago, USÁ

01-P497: DOPAL-treated Olfactory Bulb Organotypic Slices as a Model of Prodromal Parkinson's Disease

Enrico Bagnoli, Alexandre Trotier, Jill McMahon, Una FitzGerald CURAM, National University of Ireland, Galway, Ireland

01-P498: Stem cell niche platforms for investigating in vitro cytotoxicity and biophysical characteristics of human NSCs under toxic assault during development

Chandra Kothapalli, Gautam Mahajan, Moo-Yeal Lee Department of Chemical and Biomedical Engineering, Cleveland State University, Cleveland, OH, USA

01-P499: Generation of Rett syndrome disease model cells using CRISPR/CAS9 system

Kenji Orimoto, Toyojiro Matsuishi, Kotaro Yuge, Shin-ichi Horike, Makiko Meguro

Department of General Medicine, Fureai Higashi-totsuka Hospital, Yokohama, Japan

01-P500: Studying the brain machine interface: developing improved in vitro models of the CNS

Aaron Gilmour, Ulises Aregueta Roble, Laura Poole-Warren, Rylie Green

Graduate School of Biomedical Engineering, University of New South Wales, Sydney, Australia

01-P501: A protein-engineered, cell-responsive material for peripheral nerve regeneration

Nicholas A Suhar, Laura M Marguardt, Christopher M Madl, Sarah C Heilshorn

Department of Materials Science and Engineering, University of Stanford, Stanford, California, USA

01-P502: Development of heparin-conjugated ECM fibers for peripheral nerve regeneration across a long gap with controlled neurites outgrowth

Yasuhiro Ikegami, Nana Shirakigawa, Hiroyuki Ijima Department of Chemical Engineering, Kyushu University, Fukuoka, Japan

01-P503: The development of injectable beta-peptide hydrogels with human amnion epithelial cells (hAECs) for the treatment of ischaemic stroke

Andrew Hong, Mark P Del Borgo, Marie-Isabel Aguilar, Christopher G Sobey, Bradley Broughton, John S Forsythe

Department of Materials Science and Engineering, Monash Institute of Medical Engineering, Monash University, Clayton, VIC, Australia

01-P504: Different Brain Tissue Decellularization Procedures Result in Similar Cell Elimination and Extracellular Scaffold Preservation

Isaac Almendros, Noelia Campillo, Oihana Aranburu, Bryan Falcones, Jordi Otero, Daniel Navajas, Ramon Farre

University of Barcelona / CIBER Enfermedades Respiratorias / Institut Investigacions Biomediques August Pi Sunyer Spain

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01-P505: Bioinspired Sticky Protein-based Nanofibous Conduit Scaffold for Accelerated Nerve Regeneration

Hogyun Cheong, Jimin Kim, Bum Jin Kim, Eun Jin Kim, Hae Yeon Park, Bong Hyuk Choi, Kye Il Joo, Mi-La Cho, Jong Won Rhie, Jong In Lee, Hyung Joon Cha

Department of Chemical Engineering, POSTECH, Pohang, Korea

01-P506: Identification of Endogenous Neural Crest Stem Cells in the Human Adult Peripheral Nerve and Their Role in Regulating Tissue Homeostasis

Wonjin Lee, Young Il Yang, Jung Ji Woong, Eun-Jin Kang, Da-In Yeo, Min Hye Song, So Jung Park Paik Institute for Clinical Research, Inje University College of Medicine, Busan, Korea

01-P507: Development of acellular allogeneic nerve grafts for peripheral nerve reconstruction

Georgina E Webster, James DR Holland, Richard M Hall, Paul Rooney, Stacy-Paul Wilshaw

Institute of Medical and Biological Engineering, University of Leeds, Leeds, UK

01-P508: Extracorporeal Shock Wave Therapy Improves Motor Function after Spinal Cord Injury

Mohamed Ashmwe, Katja Posa, Rainer Mittermayr, Heinz Redl, David Hercher

Ludwig Boltzmann Institute for Experimental and Clinical Traumatology, Austria

01-P509: Peptide-grafted Gellan Gum hydrogels combined with Cellular

Therapy for the Regeneration of Cervical and Lumbar Spinal Cord Injuries Eduardo D Gomes, Sofia S Mendes, Rui Lima, Mark Urban, Biswarup Ghosh, Miguel Goulão, Roger Y Tam, Molly S Shoichet, Sandra I Anjo, Bruno Manadas, Jeffrey M Gimble, Angelo C Lepore, Nuno Sousa, Nuno A Silva, António J Salgado

Life and Health Sciences Research Institute (ICVS), University of Minho, Braga, Portugal / ICVS/3B's – PT Government Associate Laboratory, Braga/Guimarães, Portugal

01-P510: Directed Differentiation of Mouse Embryonic Stem Cells to V1 Interneurons

Nicholas White, Oliver Zhao, Shelly Sakiyama-Elbert Department of Biomedical Engineering, University of Texas Austin, Austin, Texas, USA

PO5. Digestive organ

<u>01-P511:</u> Development of a new mouse model of short bowel syndrome that may allow for the assessment of therapeutic efficacy of heterotopic transplantation of small intestinal organoids

Yuka Matsumoto, Mamoru Watanabe, Tetsuya Nakamura Department of Gastroenterology and Hepatology, Tokyo Medical and Dental University, Japan

<u>01-P512</u>: In-vivo maturation of a decellularized porcine esophagus

Marlene Durand, Olivier Degrandi, Mallory Meulle, Samantha Roques, Laurence Bordenave, Denis Collet

CHU Bordeaux, Bordeaux, France / Univ. Bordeaux, Bordeaux, France / Inserm, Bioingénierie tissulaire, Bordeaux, France

01-P513: The prevention of anastomosis leakage by transplantation of autologous adipose-derived stromal cell sheets

Yasuhiro Maruya, Nobuo Kanai, Shinichiro Kobayashi, Susumu Eguchi, Masayuki Yamato

Department of Surgery Nagasaki University Graduate School of Biomedical Sciences, Nagasaki, Japan

01-P514: Microfabrication of 3D Model of Small Intestine Epithelium Using Photolithography

Maria Garcia-Diaz, Albert G Castaño, Nuria Torras, Gizem Altay, Elena Martinez

Institute for Bioengineering of Catalonia (IBEC), The Barcelona Institute of Science and Technology (BIST), Barcelona, Spain

01-P515: Anti-fibrotic efficacy of gelatin sheet containing triamcinolone acetonide

Nao Nakajima, Satoru Hashimoto, Kenya Kamimura, Hiroki Sato, Kazuya Takahashi, Yusuke Akashi, Ryusuke Tanaka, Yasuhiko Tabata, Shuji Terai

Division of Gastroenterology and Hepatology, Graduate School of Medical and Dental Sciences, Niigata University, Niigata, Japan

01-P516: A 3D printed in vitro small intestine model

Laura Elomaa, Marie Weinhart Institute of Chemistry and Biochemistry, Freie Universitat Berlin, Germany

01-P517: A novel colon regeneration method: omentum as an in vivo bioreactor

Sahar Eftekharzadeh, Minoo Rostami, Amirhossein Zabolian, Abdol-Mohammad Kajbafzadeh

Pediatric Urology and Regenerative Medicine Research Center, Children's Hospital Medical Center, Tehran University of Medical Sciences, Tehran, Iran

PO6. Gelatin, collagen, silk, fibrin, polysaccharide

01-P518: TREATMENT OF VASCULAR ISCHEMIA USING HEPARAN GLYCOSAMINOGLYCANS THAT TARGET ENDOGENOUS VEGF165

Simon Cool, Selina Poon, Xiaohua Lu, Raymond Alexander Alfred

Smith, Pei Ho, Kishore Bhakoo, Victor Nurcombe Institute of Medical Biology, Agency for Science, Technology and Research, Singapore / Department of Orthopaedic Surgery, Yong Loo Lin School of Medicine, National University of Singapore, Singapore

01-P519: Extracellular matrix-based cell delivery collagen hydrogel system to regulate vascularization for engineering adipose tissue

Ying-Chieh Chen, Chia-Hui Chuang

Department of Materials Science and Engineering, National Tsing-Hua University, Taiwan

01-P520: Photo-click Gelatin-Norbornene Hydrogels for Tissue Vascularisation

Khoon S Lim, Pau Atienza-Roca, Gabriella CJ Brown, Gary J Hooper, Tim BF Woodfield

Christchurch Regenerative Medicine and Tissue Engineering Group, Department of Orthopaedics Surgery and Musculoskeletal Medicine, University of Otago Christchurch, New Zealand

<u>01-P521:</u> Recombinant Spider Silk Functionalized with Antimicrobial **Enzymes for Prevention of Implant-Related Infections**

Linnea Nileback, Fredrik Seijsing, Johan Seijsing, My Hedhammar Institute of Protein Science, School of Engineering Sciences in Chemistry, Biotechnology and Health, KTH Royal Institute of Technology, Stockholm, Sweden

01-P522: 3D Bioprinting of Renal Glomerulus Using an Enzymatically-**Crosslinked Bioink**

Thomas David Richardson, Adam Willis Perriman School of Cellular and Molecular Medicine, University of Bristol / Bristol Centre for Functional Nanomaterials, University of Bristol, UK

<u>01-P523</u>: Fabrication of the functional micro vascular complex structure using DLP(Digital Light Processing) printing and microfluidics culture system

YoungJin Lee, JiSeung Lee, SoonHee Kim, Chan Hum Park Nano bio regenerative medical institute of hallym university, chuncheon, Korea

01-P524: 3D Printed Methacrylated Gelatin (GelMA) Hydrogels for **Corneal Stroma Engineering**

Cemile Kilic Bektas, Vasif Hasirci

Department of Biological Sciences, Middle East Technical University (METU), Ankara, Turkey / Department of Biotechnology, METU, Ankara, Turkey / BIOMATEN, METU Center of Excellence in Biomaterials and Tissue Engineering, Ankara, Turkey

01-P525: Digital Light Processing-Based 3D Printing of Gelatin Methacrylamide/N-vinyl-2-pyrrolidone/Hydroxyapatite Composite

Scaffolds Kuo-Yu Chen, Jian-Ping Huang, Chun-Hsu Yao Department of Chemical and Materials Engineering, National Yunlin University of

Science and Technology, Yunlin, Taiwan

<u>01-P526</u>: The artificial trachea fabrication using 3D bioprinting technology and GelMA-HAMA

JiSeung Lee, YoungJin Lee, Olatunji Ajiteru, SoonHee Kim, ChanHum Park

Nano bio regenerative medical institute of hallym university, chuncheon, Korea

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01-P527: Fabrication of artificial trachea using silk based hydrogel and digital light processing technology

YeBeen Seo, DoYeon Kim, OkJoo Lee, SoonHee Kim, ChanHum Park Nano-Bio Regenerative Medical Institute, Hallym University College of Medicine, Chuncheon, Korea

01-P528: Laser-based 3D printing of hydrogels: a versatile approach for accurate 3D cellular models

Agnes Dobos, Peter Gruber, Maximilian Tromayer, Wolfgang Steiger, Jasper Van Hoorick, Sandra Van Vlierberghe, Robert Liska, Aleksandr Ovsianikov

Institute of Materials Science and Technology, TU Wien (Technische Universitaet Wien), Vienna, Austria / Austrian Cluster for Tissue Regeneration, Austria

01-P529: Tailoring the mechanical properties of gelatin methacryloyl hydrogels through manipulation of the photocrosslinking conditions

Cathal O'Connell, Binbin Zhang, Carmine Onofrillo, Serena Duchi, Romane Blanchard, Anita Quigley, Justin Bourke, Sanjeev Gambhir, Robert Kapsa, Claudia DiBella, Peter Choong, Gordon Wallace BioFab3D, St Vincent's Hospital, Melbourne / ARC Centre of Excellence for Electromaterials Science, University of Wollongong, Australia

<u>01-P530</u>: Novel printable bioink made of gelatin methacryloyl (GelMA) and type I collagen promotes angiogenesis

Marius Johannes Kopf, Henrike Stratesteffen, Franziska Kreimendahl, Andreas Blaeser, Stefan Jockenhoevel, Horst Fischer Department of Dental Materials and Biomaterials Research, RWTH Aachen University Hospital, Aachen, Germany

01-P531: Fabrication and characterization of the porous duck's feet collagen sponge for wound healing applications

Ok Joo Lee, Ye Been Seo, Md Tipu Sultan, Soon Hee Kim, Hee Sun Hong, Chan Hum Park

Nano Bio Regenerative Medial Institue, University of Hallym, Chuncheon, Korea

01-P532: Sea Anemone Silk-like Protein-based 3D Printing Platform with Mechanically Durable and Biologically Favorable Properties

Tae Yoon Park, Yun Jung Yang, Dongheon Ha, Dong-Woo Cho, Hyung Joon Cha

Department of Chemical Engineering, POSTECH, Pohang, Korea

<u>01-P533</u>: In vitro and in vivo evaluation of the duck's feet collagen sponge for hemostatic applications

DoYeon Kim, YeBeen Seo, Md. Tipu Sultan, OkJoo Lee, SoonHee Kim, ChanHum Park

Nano bio regenerative medical institute of hallym university, chuncheon, Korea 01-P534: Novel silk bio-ink ; 3D digital light processing printing for

advanced tissue engineering

Soon Hee Kim, Yeung Kyu Yeon, Young Jin Lee, Ye Bin Seo, Jung Min Lee, Ji Seung Lee, Md. Tipu Sultan, Ok Joo Lee, Janet Chao, Sung-il Yoon, Sang Jin Lee, James J. Yoo, Chan Hum Park

Nano-Bio Regenerative Medical Institute, College of Medicine, Hallym University, Korea

01-P535: Multi-channel silk sponge for bio-engineering the human bone marrow environment: a new tool for functional platelet production ex vivo

Pierre-Alexandre Laurent, Lorenzo Tozzi, Christian A. Di Buduo, Xuan Mu, Angelo Massaro, Ross Bretherton, David L. Kaplan, Alessandra Balduini

Department of Molecular Medicine, University of Pavia, Pavia, Italy / Biotechnology Research Laboratories, IRCCS San Matteo Foundation, Pavia, Italy

01-P536: Expression of high molecular weight collagen-like (Gly-Pro-Pro), repetitive protein in *E. coli*

Sachiro Kakinoki, Satoshi Yamada, Seijiro Matsuki, Yoshiaki Hirano Department of Chemistry and Materials Engineering, Faculty of Chemistry, Materials and Bioengineering, Kansai University / The Organization for Research and Development of Innovative Science and Technology, Kansai University, Japan

01-P537: Degradation Prediction Model and Stem Cell Growth of Gelatin-PEG Composite Hydrogel

Yang Liu, Nan Zhou, Shijie Lv, Jing Xiao, Guangwei Sun Scientific Research Center for Translational Medicine, Dalian Institute of Chemical Physics, Chinese Academy of Sciences, Dalian, China

<u>01-P538</u>: Self-assembled hyaluronic acid-steroid nanocarriers for delivery of antioxidants

Gloria Huerta-Angeles, Martina Brandejsova, Jaroslav Novotny, Katerina Kopecka, Marek Subr, Klaudia Kvakova, Vladimir Velebny CONTIPRO a.s., Czech Republic

<u>01-P539</u>: Organic nanocoating of titanium surface activates inflammatory and proliferative phase of ossteointegration

Katarzyna Aleksandra Gurzawska, Anna Mieszkowska, Justyna Folkert, Bernard Burke, Owen Addison Oral Surgery, University of Birmingham, Birmingham, UK

<u>01-P540:</u> Chitosan scaffolds by ElectroHydroDynamic techniques Charles Pierre Roux-Pertus, Solenne Fleutot, Franck Cleymand

Institut Jean Lamour, CNRS, Universite de Lorraine, France

<u>01-P541:</u> Biopolymer based electrospinning of synthetic polyester for tissue engineering applications

Trina Roy, Priti Prasanna Maiti, Sanjoy Kumar Ghorai, Santanu Dhara School of Medical Science and Technology (SMST), IIT Kharagpur, West Bengal, India

<u>01-P542:</u> Monitoring of matrix remodeling during living cell culture by microrheological measurements

Johanna Roether, Sarah Bertels, Claude Oelschlaeger, Martin Bastmeyer, Norbert Willenbacher

Institute for Mechanical Process Engineering and Mechanics, Applied Mechanics Group (AME), Karlsruhe Institute of Technology, Karlsruhe, Germany

<u>01-P543</u>: Development of a transparent nanofibrous silk fibroin nonwoven scaffold for corneal stromal regeneration

Hisatoshi Kobayashi, Shinya Hattori, Takako Honda, Tsunenori Kameda, Yasushi Tamada

WPI-MANA, National Institute for Materials Science, Japan

<u>01-P544:</u> Hydroxyapatite negatively influences proliferation of stem cells in sponges made of gelatin and fibroin at early timepoint

Sandra Schneider, Devid Maniglio, Walter Bonani, Antonella Motta, Martijn van Griensven, Elizabeth Rosado Balmayor Experimental Trauma Surgery, Klinikum rechts der Isar, Technical University of Munich,

Munich, Germany

01-P545: Wet Spinning and Riboflavin Crosslinking of Collagen Filaments

Robert Tonndorf, Elke Gossla, Dilbar Aibibu, Michael Gelinsky, Chokri Cherif

Institute of Textile Machinery and High Performance Material Technology, Dresden, Germany

<u>01-P546:</u> Electrospun scaffolds based on chitosan from Mediterranean cicada

Charles Pierre Roux-Pertus, Solenne Fleutot, Franck Cleymand Institut Jean Lamour, CNRS, Universite de Lorraine, France

<u>01-P547:</u> An Injectable Scaffold Based on Crosslinked Hyaluronic Acid Gel for Tissue Regeneration

Lian Cen, Jumei Xu, Rui Yang, Linhua Tan, Xiaobin Hua Department of Product Engineering, School of Chemical Engineering, East China University of Science and Technology, China

<u>01-P548:</u> Alginate/Gelatin Methacrylate Hydrogels As Scaffolds for Cartilage Repair

Jung Eun Kim, Jung Soo Kim, Hyun Ji Lee, Ki Hoon Lee Department of Biosystems & Biomaterials Science and Engineering, Seoul National University, Seoul, Korea

<u>01-P549:</u> Hybrid hydrogels for the orthogonal control of skeletal muscle constructs

Albert Garcia Castano, Ferran Velasco-Mallorquí, Andrea García-Lizarribar, Xiomara Fernàndez-Garibay, Josep Samitier, Javier Ramón-Azcón

Biosensors for Bioengineering group, Institute for Bioengineering of Catalonia (IBEC), The Barcelona Institute of Science and Technology, Barcelona, Spain

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<u>01-P550:</u> Functional analysis of heparin-conjugated collagen gel as a scaffold for regenerative medicine

Yue Yue, Yu Nakano, Kohji Sasaki, Yuki Naruo, Nana Shirakigawa, Hiroyuki Ijima, Hiroshi Mizumoto, Toshihisa Kajiwara Graduate School of Systems Life Sciences, Kyushu University, Fukuoka, Japan

01-P551: Fabrication, Characterization and Biocompatibility of Photocrosslinked Tyramine-Hyaluronan Hydrogels: Potential Scaffolds for Tissue Engineering

Tomas Bobula, Radovan Buffa, Hana Vagnerova, Martin Cepa, Martina Hermannova, Vladimir Velebny Contipro a.s., Czech Republic

01-P552: Conductive Electrospun Silk Fibroin Scaffolds with Polypyrrole for Cardiac Tissue Engineering

Yeshi Liang, James Cho Hong Goh

Tissue Repair Lab, Department of Biomedical Engineering, National University of Singapore, Singapore

01-P553: 1 Hour Fabrication of Precision Spheroids with Gelatin-based Method: Giant to Fine and Cylinder to Sheet

Hiroyuki Ida, Yusaku Inubushi, Yoshiki Sakaguchi, Akira Tachibana Biomaterial Group, R & D Center, Nitta Gelatin Inc., Japan

<u>01-P554:</u> Fabrication of endothelialized multilayer hydrogels for continuous perfusion within PDMS bioreactors based on 3D printing

Juan Liu, Huaiyuan Zheng, Hans-Günther Machens, Arndt F. Schilling Department of Plastic Surgery and Hand Surgery, Klinikum Rechts der Isar, Technical University of Munich, Munich, Germany / Clinic for Trauma Surgery, Orthopedics and Plastic Surgery, University Medical Center Goettingen, Goettingen, Germany / Department of Hand Surgery, Wuhan Union Hospital, Tongji Medical College, Huazhong University of Science and Technology, Wuhan, China

<u>01-P555</u>: Development of a Three-dimensional Biocompatible Polymeric Scaffold with Potential to Spheroid Formation Using Colonic Cancer Cells

Jorge Armando Jimenez-Avalos, Jorge Armando Jiménez-Avalos, Rogelio Rodríguez-Rodríguez, Hugo Espinosa-Andrews, Maira Moreno-Valtierra, Zaira Yunuen García-Carvajal

Medical and Pharmaceutical Biotechnology Unit, Centro de Investigacion y Asistencia en Tecnologia y diseno del Estado de Jalisco, Guadalajara, Mexico

01-P556: Photocurable Gelatins for Corneal Repair

Timothy Charles Hughes, Lingli Li, Huixiang Ma, Lei Wang, Xiaojuan Hao, Keith Mclean, Hao Chen CSIRO. Australia

<u>01-P557:</u> Optimizing A Three Dimensional *In Vitro* Intervertebral Disc Environment For The Co-Culture Of Human Nucleus Pulposus Cells And Mesenchymal Stromal Cells

Emily Ann Growney Kalaf, Frank P Barry Regenerative Medicine Institute, National University of Ireland Galway, Ireland

01-P558: Tunable cell encapsulating silk fibroin / collagen composite hydrogels

Jennifer O. Buitrago. Nandin Mandakhbayar, Kapil D. Patel, Ahmed El-Fiqi, Jung-Hwan Lee, Hae-Hyoung Lee, Hae-Won Kim Institute of Tissue Regeneration Engineering (ITREN), Dankook University, Cheonan / Department of Nanobiomedical Science & BK21 PLUS NBM Global Research Center for Regenerative Medicine, Dankook University, Cheonan, Korea

<u>01-P559</u>: Design and characterization of a novel alginate 3D co-culture method for use in cell-cell interaction studies

Emily Ann Growney Kalaf, Frank P Barry Regenerative Medicine Institute, National University of Ireland Galway, Ireland

<u>01-P560:</u> Hydrolyzed Collagen Promotes Viability Increase in Stem Cells Cultivated in Alginate Hydrogels

Patricia Pranke, Marina M. M. Brião, Natasha Maurmann Hematology and Stem Cell Laboratory, Faculty of Pharmacy, Universidade Federal do Rio Grande do Sul (UFRGS), Porto Alegre, Brazil / Postgraduate Program in Physiology, UFRGS, Porto Alegre, RS, Brazil / Stem Cell Research Institute (Instituto de Pesquisa com Células-tronco), Porto Alegre, RS, Brazil

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<u>01-P561:</u> A 3D Enzymatically Crosslinked Hydrogel Promotes Human Adipose-Derived Stem Cell Spheroids Proliferation and Differentiation

Ching-Cheng Tsai, Nai-Chen Cheng, Jiashing Yu

Department of Chemical Engineering, National Taiwan University, Taipei City, Taiwan 01-P562: Phenotype Controlled Macrophage Laden Gelatin Hydrogels

for Controlling Integration of Engineered Tissues

Nihal Engin Vrana, Camille Dollinger, Julien Barthes, Helena Knopf-Marques

Protip Medical, Strasbourg, France / Institut National de la Santé et de la Recherche Médicale, INSERM Unité 1121, Strasbourg, France / Université de Strasbourg, Faculté de Chirurgie Dentaire, Fédération de Médecine Translationnelle de Strasbourg, Fédération de Recherche Matériaux et Nanosciences Grand Est (FRMNGE), Strasbourg, France

01-P563: Structural analysis of PEG-fibrin conjugates and their influence on cell behavior

Anastasiia Shpichka, Peter Konarev, Vladimir Volkov, Svetlana Kotova, Anastasia Koroleva, Viktor Asadchikov, Viktor Bagratashvili, Peter Timashev

Institute for Regenerative Medicine, Sechenov University, Moscow, Russia

<u>01-P564:</u> Using 3D collagen microfibers tissues to induce and maintain the functionality of both pre- and mature primary adipocytes in long term cultures

Fiona Louis, Shiro Kitano, Shinji Irie, Michiya Matsusaki Osaka University, Joint Research Laboratory (TOPPAN) for Advanced Cell Regulatory Chemistry, Graduate School of Engineering, Japan

<u>01-P565:</u> Tuning Biochemical and Mechanical Properties of 3D Hydrogel Tweak Stem and Cancer Cells Cross-talk

Banani Kundu, Ana-Raquel F. Bastos, Virginia Brancato, J.M. Oliveira, V.M. Correlo, R.L. Reis, S.C. Kundu

3B's Research Group - Biomaterials, Biodegradable and Biomimetics, Avepark - Parque de Ciência e Tecnologia, Zona Industrial da Gandra, Barco - Guimarães, Portugal / ICVS/3B's - PT Government Associate Laboratory, Braga/Guimarães, Portugal

<u>01-P566:</u> Gelatin/Tyraminated Hyaluronic acid basedmembranes as a directional delivery system for 3D microenvironment control in cell-laden hydrogels

Julien Barthes, Helena Knopf-Marques Protip Medical, 8 Place de l'Hôpital, Strasbourg, France / INSERM UMR 1121, rue Humann, Strasbourg, France

<u>01-P567:</u> Effects of high molecular weight hyaluronan on immunomodulation

Yuta Yanagita, Hatsumi Sekiguchi, Hiroki Kawamura, Aiko Koseki, Kazuaki Muramatsu

Dvision of Life Science and engineering, Graduate School of Science and Engineering, Tokyo Denki University, Japan

<u>01-P568:</u> Synthesis of Silk Protein Conjugates for Mucoadhesive Applications

Kelly A. Burke, Danielle L. Heichel

University of Connecticut, Polymer Program, Storrs, CT USA / University of Connecticut, Chemical and Biomolecular Engineering, Storrs, CT USA / University of Connecticut, Biomedical Engineering, Storrs, CT USA

<u>01-P569:</u> Novel anti-adhesion devices using scaffold material for regenerative medicine: Development of thermally cross-linked gelatin film and its application

Hiroyuki Tsujimoto, Tsunehito Horii, Takahiro Demizu, Hiroko Torii, Yuki Ozamoto, Toshitaka Takagi, Hideki Takamori, Shinichiro Morita, Yoshito Ikada, Akeo Hagiwara

Division of Medical Life System, Department of Life and Medical Science, Doshisha University, Kyoto, Japan

01-P570: NF- κ B signaling is key in the wound healing processes of silk fibroin

Md. Tipu Sultan, Ok Joo Lee, Soon Hee Kim, Chan Hum Park Nano-Bio Regenerative Medical Institute, College of Medicine, Hallym University, Chuncheon, Korea

<u>01-P571:</u> Tropical tasar silk protein sericin based matrices for skin tissue regeneration

Sunaina Sapru, Subhayan Das, Mahitosh Mandal, Ananta Kumar Ghosh, Subhas Chandra Kundu Department of Biotechnology. Indian Institute of Technology (IIT) Kharagpur,

Kharagpur, West Bengal, India

<u>O1-P572:</u> Photo-crosslinkable, injectable sericin hydrogel as 3D

biomimetic extracellular matrix for minimally invasive repair of cartilage Lin Wang, Chao Qi, Jia Liu, Yang Jin, Luming Xu, Zheng Wang Research Center for Tissue Engineering and Regenerative Medicine, Union Hospital, Tongji Medical College, Huazhong University of Science and Technology, Wuhan, China

<u>01-P573:</u> Development of a new anti-adhesion material, thermally cross-linked gelatin film –Investigation of the physical and biological properties-

Tsunehito Horii, Hiroyuki Tsujimoto, Takahiro Demizu, Kazuyoshi Jyonin, Masayuki Nagasawa, Kenichi Kobayashi, Toshitaka Takagi, Akihiro Kawauchi, Yoshito Ikada, Akeo Hagiwara

Division of Medical Life System, Department of Life and Medical Science, Doshisha University, Kyoto, Japan / Department of Urology, Shiga University of Medical Science, Shiga, Japan

01-P574: Retinoic acid/ silk fibroin Film for Cornea Tissue Engineering Applications

Eunyeong Shin, Han Sol Kim, Yong Woon Jeong, Jeong Eun Song, Gilson Khang

Department of BIN convergence tech, Chonbuk national university, Jeonju, Korea

SYIS PA. SYIS poster presentation award candidates

SYIS PA-1: A Highly Bioactive Nanofibrous System for on-site Delivery of Endothelial Progenitor Cells with Rapid Angiogenesis Promotes Wound Healing

Cong Mao. Chenggui Wang, Xuazi Xu Department of Orthopedics, the Second Affiliated Hospital and Yuying Childrens Hospital of Wenzhou Medical University, China

<u>SYIS PA-2:</u> Reversal of natural chondrocyte aging through modulating cell morphology in a condensation-simulating process

He Shen, Hang Lin, Rocky S Tuan Division of Nanobiomedicine, Suzhou Institute of Nano-tech and Nano-bionics, Chinese Academy of Sciences, China / Center for Cellular and Molecular Engineering, Department of Orthopaedic Surgery, University of Pittsburgh, PA, USA

SYIS PA-3: Bi-Content Micro-Collagen Chip Provides Contractility-Based Biomechanical Readout for Phenotypic Drug Screening with Expanded and Profiled Targets

Lyu Zhou, Hui Zhao, Qiang Zhang, Xiaoying Zhou, Yonghui Zhang, Huijun Chen, Yanan Du

School of Life Sciences, Tsinghua University, Beijing, China / Department of Biomedical Engineering, School of Medicine, Collaborative Innovation Center for Diagnosis and Treatment of Infectious Disease, Tsinghua University, Beijing, China

SYIS PA-4: Recapitulating the Epithelium in Engineered Tracheas

Allison Marie Greaney, Liping Zhao, Laura E Niklason Department of Biomedical Engineering, Yale University, New Haven, CT, USA

<u>SYIS PA-5:</u> The use of nanocarriers for an improved muscle regeneration Jenny Ann Prange, Michael Duss, Tullio Sulser, Ehud Landau, Daniel Eberli

Department of Urology, University Hospital Zurich, Zurich, Switzerland / University of Zurich, Zurich, Switzerland

<u>SYIS PA-6:</u> Skeletal muscle fascicle engineering is improved by coculture with myofibroblasts and TGF- β 1

Jessica Rachel Krieger, Byung-Wook Park, Christopher R Lambert, Christopher Malcuit

Department of Biomedical Sciences, Kent State University, Kent, OH, USA

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<u>SYIS PA-7:</u> The effect of combined application of calcium polyphosphate granules and bFGF fibrin glue for tendon-bone healing in the tibial tunnel in a rabbit ACL reconstruction model

Duan Wang, Qi Li, Hao-Yang Wang, Jian Li, Zong-Ke Zhou Department of Orthopaedics, West China Hospital, Sichuan University, 37# Wuhou Guoxue road, Chengdu, China

<u>SYIS PA-8</u>: Dual release of bFGF and SDF-1 accelerates peripheral nerve regeneration

Kosuke Shintani, Kiyohito Takamatsu, Takuya Uemura, Takuya Yokoi, Ema Onode, Mitsuhiro Okada, Yasuhiko Tabata, Hiroaki Nakamura Department of Orthopedic Surgery, Osaka City University Graduate School of Medicine, Osaka, Japan

<u>SYIS PA-9</u>: The combined effect of fish bone derived hydroxyapatite and mesenchymal stem cells in bone regeneration: a study in the rabbit femoral condyle

Elna Paul Chalisserry, Seung Yun Nam, Sukumaran Anil Interdisciplinary Program of Marine-Biomedical, Electrical and Mechanical Engineering. Center for Marine-Integrated Biomedical Technology (BK21 Plus, Department of Biomedical Engineering, Pukyong National University, Busan, Korea

SYIS PA-10: Perfusable vascularized tissues for drug testing and modeling inter-organ biological events on a microfluidic plate

Benjamin Fook Lun Lai, Locke Davenport Huyer, Rick Xing Ze Lu, Stasja Drecun, Milica Radisic, Boyang Zhang Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, Canada

SYIS PA-11: Tissue engineering of esophagus: omentum-based recellularization technique

Sahar Eftekharzadeh, Aram Akbarzadeh, Minoo Rostami, Javad Hashemi, Abdol-Mohammad Kajbafzadeh

Pediatric Urology and Regenerative Medicine Research Center, Children's Hospital Medical Center, Tehran University of Medical Sciences, Tehran, Iran

SYIS PA-12: 4D Bioprinting of Articular Cartilage Substitutes with Biomimetic Collagen Fiber Alignment by Magnetism

Daniela F Duarte Campos, Catalin Cristian, Midhun A Phillip, Ying-Ying Lin, Andreas Blaeser, Jan Schöneberg, Sanja Aveic, Michael Vogt, Horst Fischer, Marcel Betsch

Department of Dental Materials and Biomaterials Research, RWTH Aachen University Hospital, Aachen, Germany

<u>SYIS PA-13:</u> Development of humanized bone organ to investigate species-specific cancer-bone interactions

Abbas Shafiee, Jacqui McGovern, Christoph Lahr, Christoph Meinert, Davide Moi, Ferdinand Wagner, Elena De-Juan-Pardo, Roberta Mazzieri, Dietmar Hutmacher

Institute of Health and Biomedical Innovation, Queensland University of Technology, Brisbane, Australia / The University of Queensland, UQ Centre for Clinical Research, Brisbane, Australia

<u>SYIS PA-14:</u> 3-Dimensional Artificial Cardiac Tissue Derived from Human Induced Pluripotent Stem Cell using Layer-by-Layer Technique Improve Functional Recovery of an Injured Heart

Junya Yokoyama, Shigeru Miyagawa, Koichi Toda, Takayoshi Ueno, Toru Kuratani, Mitsuru Akashi, Yoshiki Sawa

Department of Cardiothoracic surgery, Osaka University, Osaka, Japan

<u>SYIS PA-15:</u> HL-1 Cells Bioprinted within a Collagen Solution Suitable as a Cardiac Tissue Model

Aida Llucia-Valldeperas, Carlos Mota, Rabeil Sakina, Paul Wieringa, Lorenzo Moroni

Complex Tissue Regeneration department, MERLN Institute for Technology Inspired Regenerative Medicine, Maastricht University, Universiteitsingel 40, 6229 ER, Maastricht, The Netherlands / Department of Pulmonology and Physiology, VU University Medical Center, Amsterdam, The Netherlands.

<u>SYIS PA-16:</u> Spatiotemporal control of spiral waves in human cardiac cell models through optogenetics

Stephen P. Ma, Olaia F. Vila, Jinho Kim, LouJin Song, Danielle Huang, Harry Chiang, Kam Leong, Masayuki Yazawa, Gordana Vunjak-Novakovic

Department of Biomedical Engineering, Columbia University, New York, USA

Quentin Muller, Marie-Josée Beaudet, Evelyne Schaeffer, Christopher Georges Mueller, François Berthod, Vincent Flacher CNRS-UPR3572, Immune-microenvironment interactions in health and disease, IBMC-ICT, Strasbourg, France / Laboratoire d'Organogénèse EXpérimentale de l'Université Laval, CHU de Québec-Université Laval, Canada

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PO7. Cell research

<u>02-P001</u>: Simulated microgravity promotes the angiogenic potential of endothelial progenitor cells in a quality- and quantity-control cellculture system

Hiroko Hagiwara, Akira Higashibata, Shiho Ogawa, Shigeyuki Kanazawa, Hiroshi Mizuno, Rica Tanaka

Department of Plastic and Reconstructive Surgery, School of Medicine, Juntendo University, Tokyo, Japan / Center for Genomic and Regenerative Medicine, School of Medicine, Juntendo University, Tokyo, Japan

<u>02-P002:</u> Investigating the Role of Organotypic Endothelial Cells through Human Vascularized 3D Models

Chiara Arrigoni, Simone Bersini, Mara Gilardi, Martina Crippa, Maria Vittoria Colombo, Paola Ostano, Giovanna Chiorino, Carmen Ghilardi, Maria Rosa Bani, Matteo Moretti

Cell and Tissue Engineering Laboratory, IRCCS Istituto Ortopedico Galeazzi, Milano, Italy

<u>02-P003:</u> Tissue Development and Cell Migration Using Novel Avian Transgenic Technologies: From Primary Cilia to Fate Mapping

Josephine Bodle, Lynn McTeir, Amy Fraser, Megan Davey Roslin Institute / University of Edinburgh, UK

<u>02-P004</u>: Evaluation of secondary injury and glutamate excitotoxicity (neuron viability and [Ca²⁺], response) in *in vitro* model of CNS trauma

Vsevolod Pinelis, Zanda Bakaeva, Irina Krasilnikova, Oksana Lisina, Aleksey Moskovtsev, Varya Grinchenko, Nadezhda Zaitseva, Ekaterina Ivukina, Alexandr Surin

Lab. neurobiology, National Medical Research Center of Children's Health", the Ministry of Health of the Russian Federation, Russia

<u>02-P005</u>: Human umbilical cord mesenchymal stem cells derived extracellular vesicles inhibits UVB-induced dermal fibroblast photoaging by promoting expression of GPX1 and stimulating collagen synthesis Mingwu Deng

Department of Plastic and Reconstructive Surgery, Shanghai ninth People Hospital, Shanghai Jiao Tong University School of Medicine, Shanghai, China

<u>02-P006</u>: Angiogenic effect of platelet-rich plasma combined with gelatin hydrogel granules injected into murine subcutis

Natsuko Kakudo, Naoki Morimoto, Takeshi Ogawa, Masakatsu Hihara, Priscilla Valentin Notodihardjo, Makoto Matsui, Yasuhiko Tabata, Kenji Kusumoto

Department of Plastic and Reconstructive Surgery, Kansai Medical University, Osaka, Japan

<u>02-P007:</u> Platelet and growth factor concentrations in activated platelet-rich plasma: a comparison of seven commercial separation systems

Satoshi Kushida, Natsuko Kakudo, Naoki Morimoto, Tomoya Hara, Takeshi Ogawa, Toshihito Mitsui, Kenji Kusumot

Department of Plastic and Reconstructive Surgery, Kansai Medical University, Osaka, Japan

<u>02-P008</u>: Adipose-derived stromal cells secretome varies in different culture media: Implications for conditioned media-based research

Tacia Tavares de Aquinas Liguori, Gabriel Romero Liguori, Luiz Felipe Pinho Moreira, Martin Conrad Harmsen

Cardiovascular Regenerative Medicine Research Group (CAVAREM), Department of Pathology and Medical Biology, University Medical Center Groningen, Groningen, the Netherlands / Laboratório de Cirurgia Cardiovascular e Fisiopatologia da Circulação (LIM-11), Instituto do Coração (InCor), Hospital das Clinicas HCFMUSP, Faculdade de Medicina, Universidade de Sao Paulo, Sao Paulo, SP, Brazil

<u>02-P009:</u> A Novel Approach for Preparing Fractionation of Extracellular Membrane Vesicles Suitable for Biophysical Analyses

Noriyuki Ishii, Mitsushi J Ikemoto, Takayuki Odahara Biomedical Research Institute, Department of Life Science and Technology, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan / The United Graduate School of Agricultural Science, Gifu University, Gifu, Japan

02-P010: Small molecule-based direct reprogramming from human dermal fibroblasts into Brown adipocytes

Yukimasa Takeda, Yoshinori Harada, Ping Dai Department of Cellular Regenerative Medicine, Graduate School of Medical Science, Kyoto Prefectural University of Medicine, Kyoto, Japan

<u>02-P011:</u> Quantitative measurement of mobility of cell colony using image analysis methods for quality control of oral keratinocytes: A preliminary study

Emi Hoshikawa, Yoshitaka Kimori, Taisuke Sato, Hiroko Kato, Ayako Suzuki, Kenta Haga, Daisuke Nanba, Kenji Izumi Division Biomimetics, Niigata University Graduate School of Medical and Dental

Sciences / Division of Periodontology, Niigata University Graduate School of Medical and Dental Sciences, Japan

<u>02-P012:</u> Effect of isotropic gravity on cytoskeletal and nucleoskeletal structures of human mesenchymal stem cells

Mee-Hae Kim, Chaiyong Koaykul, Yumi Kawahara, Louis Yuge, Masahiro Kino-oka

Department of Biotechnology, Graduate School of Engineering, Osaka, Japan

02-P013: hnRNPC as a novel mechanosensor connecting ECM mechanics and mRNA homeostasis

Fabiana Martino, Stefania Pagliari, Ana Rubina Perestrelo, Jorge Oliver De La Cruz, Vladimir Vinarsky, Jan Vrbsky, Francesca Cavalieri, Giancarlo Forte

Center for Translational Medicine (CTM), International Clinical Research Center (ICRC), St. Anne's University Hospital, Brno, Czech Republic / Department of Biology, Faculty of Medicine, Masaryk University, Brno, Czech Republic / Competence Center for Mechanobiology in Regenerative Medicine, INTERREG ATCZ133, Brno, Czech Republic

02-P014: Biophysical stimuli by Extra Corporeal Shock Waves (ECSW) induce fibroblast activation trough pro-inflammatory pathway modulation

Valentina Basoli, Sidrah Chaudary, Peter Dungel, Carlo Ventura, Heinz Redl, Margherita Maioli

Laboratory of Molecular Biology and Stem Cell Engineering, National Institute of Biostructures and Biosystems, Innovation Accelerator, CNR, Bologna, Italy / Department of Biomedical Sciences, University of Sassari, Viale San Pietro 43 / Sassari, Switzerland

<u>02-P015</u>: Investigate osteogenesis and adipognesis in 7F2 mouse osteoblasts through the measurement of biomechanical properties

Hsin-I Chang, Kai-Chen Hu, Tsung-Yan Tsai, Chu-Wen Shao Department of Biochemical Science and Technology, National Chiayi University, Chiayi, Taiwan

<u>02-P016:</u> Does Effect of Shear Flow on Endothelial Cell remain after Stimulation?

Shigehiro Hashimoto, Haruka Hino, Hiromi Sugimoto, Yusuke Takahashi, Takuya Tamura

Department of Mechanical Engineering, Kogakuin University, Tokyo, Japan

<u>02-P017:</u> Harnessing the potential of amniotic exosomes for nanomedicine

Gina D Kusuma, Dandan Zhu, Jean L Tan, Mirja Krause, Rebecca Lim The Ritchie Centre, Hudson Institute of Medical Research, Clayton, Victoria, Australia

<u>02-P018</u>: Developing a small scale fluidised bed bioreactor for longterm culture of tissue-like structures for *in vitro* modelling

Joana Mendonca da Silva, Eloy Erro, Maooz Awan, Sherri-Ann Chalmers, Tarit Mukhopadhyay, Barry Fuller, Clare Selden The Liver Group, Institute for Liver and Digestive Health, University College London, London, UK

<u>02-P020:</u> A novel cell seeding technique to efficiently endothelialize surfaces of cardiovascular grafts by utilizing recombinant spider silk

Christos Panagiotis Tasiopoulos, Mona Widhe, My Hedhammar School of Engineering Sciences in Chemistry, Biotechnology and Health, Department of Protein Science, KTH Royal Institute of Technology, Stockholm, Sweden

<u>02-P021:</u> Establishment of optimal transporting condition to achieve cell viability and tissue regeneration of AFSCs

SoYoung Chun, Na Hee Yu, Jae Wook Chung , Yun Sok Ha , Bum Soo Kim, Tae Gyun Kwon

BioMedical Research Ins., Kyungpook National University Hospital, Daegu, Korea

<u>02-P022:</u> Effect of long-term culture on the biological and morphological characteristics of human mesenchymal stromal cells

Lubos Danisovic, Martin Bohac, Andreas Nicodemou, Zuzana Varchulova Novakova, Marcela Kuniakova, Lubica Krajciova, Michaela Babelova, Ivan Varga

Institute of Medical Biology, Genetics and Clinical Genetics, Faculty of Medicine, Comenius University in Bratislava, Slovakia

<u>02-P023:</u> *Ex vivo* studies of the behavior of nasal mucosal cell sheet after grafting

Yoshiyuki Kasai, Tsunetaro Morino, Kazuhisa Yamamoto, Hiromi Kojima

Department of Otorhinolaryngology, Jikei University School of Medicine, Japan

<u>02-P024:</u> New Compounds for Improving hASC Cell Sheets Resilience to Hypothermic and Hypoxic Insult

Sara Freitas Ribeiro, Andreia Filipa Carvalho, Mariana Teixeira Cerqueira, Alexandra Pinto Marques, Rui Luís Reis, **Rogério Pedro Pirraco**

3B's Research Group – Biomaterials, Biodegradables and Biomimetics, Headquarters of the European Institute of Excellence on Tissue Engineering and Regenerative Medicine, University of Minho, Avepark Barco, Guimarães, Portugal / . ICVS/3B's – PT Government Associate Laboratory, Braga/Guimarães, Portugal

02-P025: Evaluation of Liquid Nitrogen-free Electric Programming Freezer as Cellular Cryopreservation Technology

Toshihiko Okazaki

Molecular and Cell Processing Center, Kyushu University Hospital, Kyushu, Japan

<u>02-P026:</u> Automated Multi-Factor Medium Optimization of Human Hematopoietic Stem Cell Expansion Using Design of Experiments

Hirokazu Akiyama, Tatiana Oussenko, Julie Audet, Jastaranpreet Singh, Celine Bauwens, Laura Prochazka, Guy Sauvageau, Peter W. Zandstra

Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON, Canada

<u>02-P027:</u> Human Healthy Auricular Cartilage and Microtia Remnant Harbor Progenitor Cells Able to Produce Neocartilage in 3D Hydrogel Culture

Iris A Otto, Paulina Nuñez Bernal, **Riccardo Levato**, Corstiaan C Breugem, Jos Malda

Department of Orthopaedics, University Medical Center Utrecht, Utrecht, the Netherlands / Department of Plastic, Reconstructive & Hand Surgery, University Medical Center Utrecht, Utrecht, the Netherlands

02-P028: Effects of Cryopreservation on Adipose Tissue-Derived Mesenchymal Stem Cells

Jienny Lee, Da-Un Jeong, Jeong Su Byeon, Na-Yeon Gu, Mi Jeong Park, In-Soo Cho, Sang-Ho Cha

Animal and Plant Quarantine Agency, Gimcheon-si, Korea

<u>02-P029:</u> Systematic Review of Stem Cell-based Treatments for Diabetic Foot Ulcer: Look for the Perfect Cell Therapy

Olga A. Krasilnikova, Ilya D. Klabukov, Maxim V. Balyasin, Alexey V. Lyundup

Department of Advanced Cell Technologies, Institute for Regenerative Medicine, Sechenov First Moscow State Medical University, Russia

<u>O2-PO30:</u> The role of Wnt/ β -catenin signaling pathway in the process of adipose-derived stem cells differentiate into neurons

Wenchen Ji, Wanting Jiang

Department of orthopaedics, the First Affiliated Hospital of xi'an Jiaotong University, China

<u>02-P031:</u> Reducing the risks of tumorigenesis following human induced pluripotent stem cell-derived neural stem/progenitor cell (iPS-NS/PC) transplantation in spinal cord injury – The role of suicide genes

Kota Kojima, Hiroyuki Miyoshi, Narihito Nagoshi, Shuhei Ito, Tsuyoshi lida, Masahiro Ozaki, Soya Kawabata, Go Itakura, Osahiko Tsuji, Morio Matsumoto, Hideyuki Okano, Masaya Nakamura

Orthopaedic department, Keió University, Tokyo, Japan / Department of physiology, Keio University, Tokyo, Japan

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02-P032: Nanostructured substrates for single-cell multi-cue investigations Michael Robitaille, Joseph Christodoulides, Marc Raphael, Marc Christenbargen, Jianulia, Deans Dachu, Joff Duare

Christophersen, Jinny Liu, Deepa Raghu, Jeff Byers U.S. Naval Research Laboratory, USA

<u>02-P033</u>: In vitro disease models of retinal microvessels

Li-Jiun Chen, Shun Ito, Bibek Raut, Nobuhiro Nagai, Matsuhiko Nishizawa, Toshiaki Abe, Hirokazu Kaji Department of Finemechanics, Graduate School of Engineering, Tohoku university, Japan

<u>02-P034:</u> Fluctuations in Tumor m-Organoid Protrusions Govern Lung Cancer Invasiveness: An Organ-on-Chip Approach

David Caballero, Vitor M Correlo, Joaquim M Oliveira, Rui L Reis, Subhas C Kundu

3Bs Research Group, University of Minho / ICVS/3Bs, PT Government Associate Laboratory, Portugal

<u>02-P035</u>: Recent progress on hydrogel incorporated microfluidic assay for 3D and heterotypic cell culture

Seok Chung, Ji Hun Yang, Hyun Jeong Oh, Yesl Jun School of Mechanical Engineering, Korea University / KU-KIST Graduate School of Converging Science and Technology, Korea University, Korea

<u>02-P036:</u> Understanding Nanotopographical Regulation of Cell Behavior

Yong Yang, Kai Wang, Jiafeng Liu Department of Biomedical Engineering, University of North Texas, Denton, TX, USA

<u>02-P037:</u> Does Aspect Ratio of Checkered Convexo-concave Micro-

pattern control Orientation of Cultured Single Cell? Shigehiro Hashimoto, Yusuke Takahashi, Kenta Sugimoto, Haruka Hino, Takuya Tamura

Department of Mechanical Engineering, Kogakuin University, Tokyo, Japan

<u>02-P038:</u> Three dimensional migration of hematopoietic stem/ progenitor cells by mimicking bone marrow environment

Eunjin Lee, Yungyeong Kang, Yanru Wu, Jieun Kim, Minju Kim, Jungwoog Shin

Department of Biomedical Engineering, Inje University, Gimhae, Korea

<u>02-P039:</u> Implementation of a protocol for the isolation and culture of mouse spermatogonial stem cells (SSCs) in Costa Rica

Esteban Jose Solis. Stephanie Monge Biotechnology Research Center, Costa Rica Institute of Technology, Cartago, Costa Rica

<u>02-P040:</u> Imaging Oxygen Gradients in Cell Aggregates and Spheroids Gregor Liebsch, Robert Johannes Meier

Head of R&D Imaging Solutions, PreSens GmbH, Regensburg, Germany

02-P041: Comparative study of myogenic potential of mesenchymal stem cells from alveolar mucosa and attached gingiva in 2D and 3D culture

Irina N. Saburina, Irina M. Zurina, Anastasiya A. Gorkun, Nastasia V. Kosheleva, Andrey A. Pulin, Ilya I. Eremin, Vadim S. Repin FSBSI "Institute of general pathology and pathophysiology", Moscow, Russia

<u>02-P042:</u> Characterization of muscle satellite cells encapsulated in 3D hydrogel system

Seung Hwa Yoo, Sunju Lee, Dong-Mok Lee, Ki Young Kim, Sung Bum Park, Sunray Lee, Hyun-Sook Park Korea Institute of Industrial Technology (KITECH), Korea

02-P043: Cellular ecosystem of the human uterus

Bingbing Wu, Yu Li, Yanshan Liu, Kaixiu Jin, Kun Zhao, Chengrui An, Qikai Li, Lin Gong, HongWei Ouyang, XiaoHui Zou Clinical Research Center, the First Affiliated Hospital, School of Medicine, Zhejiang University, Hangzhou, Zhejiang China / Dr. Li Dak Sum & Yip Yio Chin Center for Stem Cell and Regenerative Medicine (LYCSRM), Zhejiang University, Hangzhou, China / Zhejiang Provincial Key Laboratory of Tissue Engineering and Regenerative Medicine,

Hangzhou, Zhejiang, China

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02-P044: A 3D bone marrow niche model to study normal hematopoiesis

Maaike Braham, Amélie S.P. Li Yim, Monique C. Minnema, F. Cümhur Öner, Catherine Robin, Jacqueline Alblas

Department of Orthopedics, University Medical Center Utrecht, the Netherlands

<u>02-P045</u>: Keloid Fibroblast Heterogeneity and the Development of an **Anti-Recurrence Keloid Biomaterial Treatment**

Stuart John Brown, Elena Garcia-Gareta

Regenerative Biomaterials Group, RAFT Institute, Middlesex, UK

<u>02-P046</u>: HDAC2 as a molecular driver of aging and Alzheimer's disease in a human *in vitro* model

Bonnie J. Berry, Hary Frankowski, Chizuru Kinoshita, Richard S.

Morrison, Jessica E. Young Department of Pathology, University of Washington, Seattle, Washington, USA / Institute for Stem Cell and Regenerative Medicine, University of Washington, Seattle, Washington, USA

<u>02-P047</u>: New *in vitro* model for studying reparation of retinal pigment epithelium based on laser microsurgery of multicellular spheroids

Nastasia V. Kosheleva, Inna V. Ilina, Irina M. Zurina, Anastasiya A. Gorkun, Dmitrii S. Sitnikov, Mikhail B. Agranat, Sergey A. Borzenok, Vadim S. Repin, Irina N. Saburina

FSBSI "Institute of general pathology and pathophysiology", Moscow, Russia / Department of Embryology, Faculty of biology, Lomonosov Moscow State University, Moscow, Russia

02-P048: Effects of Wnt Signaling on Differentiation of Estrogendeprived Human Bone Marrow Stromal Cells

Premjit Arpornmaeklong, Prison Pripatnanont Department of Oral and Maxillofacial Surgery, Faculty of Dentistry, Thammasat University, Thailand

02-P049: Soluble viscous polymer environments alter cell mechanosensing and behaviour

Jordi Gonzalez-Molina, Xiaoli Zhang, Michela Borghesan, Maooz Awan, Nuria Gavara, Barry Fuller, Clare Selden ILDH, University College London, London, UK

<u>02-P050</u>: Focusing on the Cellular Communication between Sensory Neurons and Endothelial Cells in view of Angiogenesis

Bruno Paiva dos Santos, Alice Leroux, Hugo Oliveira, Joelle Amedee Inserm U1026, Universite de Bordeaux, France

02-P051: HUVEC CULTIVATED ONTO DIFFERENT ELECRTOSPUN 3D MATRICES: COMPARATIVE STUDY OF GENE EXPRESSION BY NGS

Pavel Laktionov, Alena Stepanova, Petr Laktionov, Andrei Karpenko, Evgeny Pokushalov

E. Meshalkin National medical research center of the Ministry of Health of the Russian Federation, Novosibirsk, Russia / Institute of Chemical Biology and Fundamental Medicine SB RAS, Novosibirsk, Russia

02-P052: Immunomodulatory and Cytotoxic Effects of Silver **Antiseptics on Human Cells**

Kristina Nesporova, Vojtech Pavlik, Natalie Cisarova, Pavel Odraska, Vladimir Velebny

Physiology of Cell, Contipro a.s., Dolni Dobrouc, Czech Republic

02-P053: Isolation and characterization of primary fibroblast-like cells from pes equinovarus tissue for adjunctive non-invasive chemical treatment testing

Martina Doubkova, Jarmila Knitlova, Martin Plencner, Martin Ostadal, Adam Eckhardt, Marta Vandrovcova

Institute of Physiology of the Czech Academy of Sciences, Prague, Czech Republic / Second Faculty of Medicine, Charles University, Prague, Czech Republic

PO8. Drug discovery

02-P054: Upregulating mTOR/ERK signaling by Leonurine for promoting angiogenesis and tissue regeneration in a full-thickness cutaneous wound model

Cong Mao, Chenggui Wang

Department of Orthopedics, the Second Affiliated Hospital and Yuying Childrens Hospital of Wenzhou Medical University, China

02-P055: Effects of Tirofiban on Random Skin Flap Survival in Rats

Li Zhi Jie, lin din sheng, cheng liang Department of Hand and Plastic Surgery, University of Wenzhou Medical, Wenzhou, China

02-P056: Effects of Batroxobin on the Survival of Random Skin Flaps in Rats

Miao-Jie Fang, Ding-Sheng Lin Department of Hand Surgery, The 2nd Affiliated Hospital of Wenzhou Medical University, Wenzhou, China

<u>02-P057</u>: In vivo Application of Camptothecin-loaded Nanoparticles for **Targeted Breast Cancer Therapy**

Marietta Landgraf, Christoph A. Lahr, Ishdeep Kaur, Abbas Shafiee, Alvaro Sanchez, Christoph Meinert, Anna Cifuentes-Rius, Nicolas H. Voelcker, Dietmar W. Hutmacher, Jacqui A. McGovern Institute of Health and Biomedical Innovation, Centre in Regenerative Medicine, Queensland University of Technology, Brisbane, Australia

<u>02-P058</u>: A Tissue-Engineered Prostate Cancer *In Vivo* Model That Recapitulates The Human-Specific Effects of The Therapeutic Antibody Denosumab

Marietta Landgraf, Christoph A. Lahr, Abbas Shafiee, Alvaro Sanchez, Christoph Meinert, Dietmar W. Hutmacher, Jacqui A. McGovern Institute of Health and Biomedical Innovation, Centre in Regenerative Medicine, Queensland University of Technology, Brisbane, Australia

<u>02-P059</u>: The c-Met agonist of the bacterial origin Internalin B accelerates regeneration of soft tissues

Yaroslava Mikhailovna Chalenko, Konstantin Alexandrovich Sobyanin, Marina Rafailovna Kapkaeva, Elena Vladimirovna Sysolyatina, Alexandra Yakovlevna Lavrikova, Egor Valerievich Kalinin, Konstantin Yurievich Midiber, Luidmila Mikhailovna Mikhaleva, Olga Nikolaevna Sheglovitova, Svetlana Alexandrovna Ermolaeva

Gamaleya research center of epidemiology and micribiology, Russia

02-P060: Effects of Morroniside on the viability of random skin flaps in rats

Yuting Lin, Dingsheng Lin Department of Medicine, First Clinical Medicine School, Wenzhou Medical University, Wenzhou, China

02-P061: Effect and mechanism of Urinary Kallidinogenase on the survival of the free skin flaps in rats

YuZhi Lei Jin, Ding Sheng Lin Department of Hand Surgery, The 2nd Affiliated Hospital of Wenzhou Medical University, Wenzhou, China

02-P062: Development of a 3D model of bone tumor embedded in a healthy tissue

Joanna Maria Idaszek, Ewa Walejewska, Jakub Jaroszewicz, Vasif Hasirci, Wojciech Swieszkowski

Faculty of Material Science and Engineering, Warsaw University of Technology, Warsaw, Poland

02-P063: Improvement of Drug Virtual Screen by GA/GP: a web server for drug virtual screen and visualizing the docking structure by GP and X-Score

Po-Tsang Huang, Guo-Chung Dong Institute of Biomedical Engineering and Nanomedicine, National Health Research Institutes, Miaoli, Taiwan

02-P064: A novel three dimensional culture system (CELLFLOAT) for hiPSCs spheroids

Toshimasa Uemura, Kenji Kusumoto, Meihua Jin, Yo Uemura, Yasuhisa Sakurai, Shota Makino, Kenichi Morita, Takashi Tsumura JTEC CORPORATION, Osaka, Japan / Graduate School of Engineering, Osaka University, Osaka, Japan

02-P065: Novel strategies to modulate address cellular uptake and bioavailability of functional nucleic acids

Oommen Varghese, Sandeep Kadekar, Ganesh Nawale Department of Chemsitry-Angstrom Laboratory, Uppsala University, Sweden

02-P066: MicroRNA 141-5p inhibits cellular proliferation and invasion 02-P076: INDUCTION

by directly targeting 4-1BB variant type in colon cancer model Min-Kyoung Kim

Department of New drug development, Inha University College of Medicine, Incheon, Korea

02-P067: Gallic acid-based dendrimers modulate A β 42 fibrillization and reduces cellular toxicity

Ana Rita Rodrigues Araujo, Juan Correa, Eduardo Fernandez Megia, Rui Luis Reis, Ricardo Alexandre Pires

3B's Research Group / ICVS/3B's - PT Government Associate Laboratory, Portugal

02-P068: A microfluidic platform for high-throughput drug screening on 3D functional microtissues

Roberta Visone, Giovanni Stefano Ugolini, Vladimir Vinarsky, Miriam Penati, Alberto Redaelli, Giancarlo Forte, **Marco Rasponi** Department of Electronics, Information and Bioengineering, Politecnico di Milano,

Milan, Italy
<u>02-P069:</u> A beating heart-on-chip platform integrating real-time

measurement of cardiac electric potential as advanced preclinical screening model

Marco Rasponi, Giovanni Stefano Ugolini, Roberta Visone, Daniela Cruz-Moreira, Alberto Redaelli

Department of Electronics, Information and Bioengineering, Politecnico di Milano, Italy <u>02-P070:</u> NIH Organs-on-Chips Program: Tissue chips for Efficacy and

Toxicity Testing in Drug Development

Danilo Angeles Tagle

National Center for Advancing Translational Sciences, NIH, USA

02-P071: Fabrication of a 384PillarPlate for miniaturized 3D bioprinting

Moo-Yeal Lee, Parnian Bigdelou, Stephen Hong, Taban Larimian, Mujeeb Wafa, Tushar Borkar

Cleveland State University, USA / Bioprinting Laboratories, Inc., USA

<u>02-P072:</u> Modeling Osteoarthritis in a Chip through Hyper-Physiological Compression of a 3D Cartilage Model

Paola Occhetta, Andrea Mainardi, Emiliano Votta, Queralt Vallmajo-Martin, Martin Ehrbar, Ivan Martin, Andrea Barbero, Marco Rasponi Department of Biomedicine, University Hospital Basel, University of Basel, Basel, Switzerland

<u>02-P073:</u> Tissue Engineering Models of Breast Carcinoma and Malignant Glioma for Cancer Biology Research, Drug Testing and Diagnostic Tools' Development

Anna Guller, Annemarie Nadort, Zahra Khabir, Inga Kuschnerus, Sameera Iqbal, Vlada Rozova, Liuen Liang, Lindsay Parker, Alfonco Garcia-Bennett, Nicki Packer, Ewa Goldys, Andrei Zvyagin, Yi Qian Department of Biomedical Sciences, Macquarie University, Sydney, Australia / The Centre for Nanoscale BioPhotonics, ARC, Australia / Sechenov First Moscow State Medical University, Moscow, Russia

<u>02-P074:</u> A Blood-Vessel On-A-Chip for the Study of Drugs on Angiogenesis and Endothelial Barrier Function

Joris Pauty, Fabrice Soncin, Yukiko T Matsunaga

Center for International Research on Integrative Biomedical Systems (CIBiS), Institute of Industrial Science, The University of Tokyo, Tokyo, Japan / LIMMS/CNRS-IIS UMI, Institute of Industrial Science, The University of Tokyo, Tokyo, Japan / CNRS/IIS/ Centre Oscar Lambret/Université Lille 1 SMMiL-E project, CNRS Délégation Nord-Pas de Calais et Picardie, Lille, France

PO9. ES and iPS cells

<u>02-P075:</u> Novel differentiation procedure and expansion medium of iPSC-derived endothelial cells

Yasuhiro Tosaka, Tatsuji Enoki, Kaori Kubo, Sachiko Okamoto, Jun K Yamashita, Junichi Mineno

CDM Center Division 3, Takara-Bio Inc., Shiga, Japan

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02-P076: INDUCTION OF TRANSGENE FREE CANINE INDUCED PLURIPOTENT STEM CELLS BY USING SENDAI VIRUS VECTOR

Masaya Tsukamoto, Ryoji Kanegi, Toshiya Nishimura, Manami Ohtaka, Ken Nishimura, Makoto Nakanishi, Toshio Inaba, Kikuya Sugiura, Shingo Hatoya

Department of Advanced Pathobiology, Graduate School of Life and Environmental Sciences, Osaka Prefecture University, Izumisano, Japan

<u>02-P077:</u> The effect of epidermal growth factor on oral epithelial-like cell induction from mouse iPS cells

Azusa Onishi, Aimi Naim Abudullah, Kotaro Tanimoto, Koichi Kato Department of Biomaterials, Graduate School of Biomedical & Health Sciences, University of Hiroshima, Hiroshima, Japan / Department of Orthodontics and Craniofacial Developmental Biology, Graduate School of Biomedical & Health Sciences, University of Hiroshima, Hiroshima, Japan

<u>02-P078:</u> O-GlcNAc on PKC ζ Inhibits Differentiation of Mouse Embryonic Stem Cells via Inhibition of PKC ζ Phosphorylation Hayato Ota, Taichi Miura, Shoko Nishihara

Department of Bioinformatics, Graduate School of Engineering, Soka University, Japan

<u>02-P079:</u> The inhibition of FGF4 signaling by *O*-GlcNAc is required for the maintenance of the undifferentiated state of mouse embryonic stem cells

Taichi Miura, Fumiaki Nakayama, Shoko Nishihara Department of Bioinformatics, Graduate School of Engineering, Soka University, Japan / National Institute of Radiological Sciences (NIRS), National Institutes for Quantum and Radiological Science and Technology, Japan

<u>02-P080:</u> Exosomes derived from human induced pluripotent stem cells ameliorate dermal fibroblasts aging

Ju Hyun Park, Myeongsik Oh, Jinhee Lee, Wijin Kim, Jaeyoung Lee, Hyelim Lee, Won Jong Rhee

Department of Medical Biomaterials Engineering, Kangwon National University, Chuncheon-si, Korea

<u>02-P081:</u> Spontaneous differentiation to primordial germ cell-like cells and cyst formation from mES cells with microstructured mesh culture

Yuta Ando, Kennedy Omondi Okeyo, Taiji Adachi Department of Micro Engineering, Graduate School of Engineering, Kyoto University, Kyoto, Japan

<u>02-P082:</u> Elucidation of growth process of human induced pluripotent stem cell aggregates in floating culture condition

Akihiro Hashida, Toshimasa Uemura, Masahiro Kino-oka Department of Biotechnology, Graduate School of Engineering, Osaka University, Suita, Osaka, Japan

02-P083: Improvement of Pluripotent Stem Cell Culture Efficiency Using UV/ozone Surface Modification Combined with Atmospheric Pressure Plasma Treatment

Hayato Suzuki, Kohei Kasai, Yuka Kimura, Shogo Miyata School of Integrated Design Engineering, Graduate School of Science & Technology, Keio University, Tokyo, Japan

<u>02-P084:</u> Cell biological analysis of human iPS cell-derived beating cardiomyocytes *in vitro* and development of visible light-responsive collagen gel for cell purification

Yuji Haraguchi, Katsuhisa Matuura, Takeshi Kawano, Kaede Yokoyama, Kenji Takatsuka, Yusuke Taki, Yusuke Nakajima, Chie Kojima, Tatsuya Shimizu

Institute of Advanced Biomedical Engineering and Science, TWIns, Tokyo Womens Medical University, Japan

<u>02-P085:</u> An optimized and simplified human pluripotent stem cell culture system with StemFit® medium

Kenichiro Ito, Hirotaka Wagatsuma, Hajime Onuki, Takuya Matsumoto, Sho Senda, Atsushi Konishi Institution for Innovation, Ajinomoto Co., Inc., Tokyo, Japan

<u>02-P086:</u> Single-use pH electrode for cell culture medium monitoring

Yuichi Ichinari, Kazuhiro Miyamura, Keiko Kuwamoto, Katsuhisa Matsuura

Core Technology Development Department, HORIBA Advanced Techno Co.,Ltd., Kyoto, Japan

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<u>02-P087:</u> Effects of Cell Differentiation on EL M3 and ES-R1-EGFP B2/ EGFP Cells in Long-term Culture using Collagen Gel Derived from *Tilapia Scales*

Koichi Imai, Tsubasa Shirai

Department of Biomaterlals, Osaka Dental University, Japan

<u>02-P088:</u> Evaluation of non-invasive analysis of human iPS cell culture by a novel cell culture analysis platform using LC/MS/MS

Toyoda Kenichi, Suzuki Takashi, Yamamoto Kohei, Nozawa Tomonori, Nishio Tatsuya, Mito Yasuhiro, Bungo Hajime, Takahashi Masatoshi Shimadzu corp., Japan

02-P089: Improvement of hPSC-cardiomyocyte maturation by enzymemediated electrical stimulation

Soon-Jung Park, Joseph Seo, Yun Ho Song, Seong Woo Choi, Hana Kim, Sung-Hwan Moon

Department of Stem Cell Biology, Konkuk University School of Medicine, Korea

<u>02-P090:</u> Characterization of Morphologically Irregular iPS clones Kei Yoshida, Risako Nagasaka, Kei Kanie, Ryuji Kato

Department of Basic Medicinal Sciences, Graduate School of Pharmaceutical Sciences, Nagoya University, Aichi, Japan

<u>02-P091:</u> A novel method to evaluate quality of iPS cells with improved single-cell pulsed-field gel electrophoresis

Masao Miyake, Yuzo Takeguchi, Susumu Yoshie, Satoru Kaneko, Akihiro Hazama

Department of Cellular and Integrative Physiology, Fukushima Medical University, Fukushima, Japan

<u>02-P092:</u> Neural regeneration after transplantation of Neuronal cell sheet of cortical motor neuron phenotype

Nagisa Arimitsu Nakata, Chieko Hirotsu, Kenji Takai, Jun Shimizu, Naruyoshi Fujiwara, Yoko Okada, Noboru Suzuki Department of Immunology and Medicine, St. Marianna University School of Medicine, Kanagawa, Japan

<u>O2-P093:</u> Models for designing freeze-thaw process of human induced pluripotent stem cells towards commercial manufacturing

Yusuke Hayashi, Masahiro Kino-oka, Ikki Horiguchi, Masahiko Hirao, Hirokazu Sugiyama

Department of chemical system engineering, The university of Tokyo, Tokyo, Japan <u>02-P094:</u> Effect of hydrodynamics on cell quality in cryopreservation process of hiPSCs

Kazuhiro Fukumori, Yutaro Taki, Masahiro Kio-oka Department of Biotechnology, Graduate School of Engineering, Osaka University, Osaka, Japan

02-P095: Comparison of Pluripotency on Enzymatically and Mechanically Passaged Porcine Induced Pluripotent Stem Cells

Jienny Lee, Na-Yeon Gu, Mi Jeong Park, Jeong Su Byeon, Da-Un Jeong, In-Soo Cho, Sang-Ho Cha

Animal and Plant Quarantine Agency, Gimcheon-si, Korea

<u>02-P096:</u> Hepatocyte differentiation of genome-edited iPSC clones with the SNP at CYP2C9 screened by NGS analysis

Yasunori Amaishi, Yasuhiro Tosaka, Koichiro Aya, Sachiko Okamoto, Yoshimasa Tsujimoto, Tatsuji Enoki, Junichi Mineno CDM center, Takara Bio Inc., Shiga, Japan

<u>02-P097:</u> Enrichment of Specified Gene Editing Events in Human iPS Cells

Thomas L. Maurissen, Shin-Il Kim, Knut Woltjen Department of Life Science Frontiers, Center for iPS Cell Research and Application (CiRA), Kyoto University, Kyoto, Japan

<u>02-P098</u>: Generation of gene corrected iPSC line from Parkinson's disease patient iPSC line carrying an A53T mutation in alpha-SNCA

Seo-Young Lee, Sun-Ku Chung, Jung-Hyun Park, Soo A Oh, Sangkyun Jeong

Mibyeong Research Center, Korea Institute of Oriental Medicine(KIOM), Yuseong-gu, Daejeon, Korea

<u>02-P099:</u> Quantification of cell culture technique by moving particle simulation for stabilization of cellular quality control

Kei Kanie, Takeshi Matsuoka, Kei Yoshida, Ayako Sugimoto, Masaya Fujitani, Hiroto Sasaki, Tsuyoshi Yamada, Ryuji Kato Graduate School of Pharmaceutical Sciences, Nagoya University, Nagoya, Japan

02-P100: Models for designing suspension and filling processes of

human induced pluripotent stem cells considering survival rate Masaki Shiokaramatsu, Masahiro Kino-oka, Ikki Horiguchi, Masahiko Hirao, Hirokazu Sugiyama

Department of chemical system engineering, the university of tokyo, tokyo, Japan

<u>02-P101:</u> Solving the environmental issues for cells: Towards precise regulation of stem cell functions

Ken-ichiro Kamei

Institute for Integrated Cell-Material Sciences, Kyoto University, Kyoto, Japan

<u>02-P102:</u> Three-dimensional cardiac tips with multiple cell types are useful drug screening model in vitro for evaluating cardiotoxicity

Maki Takeda, Shigeru Miyagawa, Emiko Ito, Akima Harada, Noriko Mochizuki-Oda, Mitsuru Akashi, Yoshiki Sawa Department of cardiovascular, Osaka University, Osaka, Japan

02-P103: Isolation and characterization of an endodermal cell

population in a three-dimensional culture of human iPS cells using hollow fibers

Sakiko Matsushita, Hiroshi Mizumoto, Toshihisa Kajiwara Graduate School of Systems Life Sciences, Kyushu University, Fukuoka, Japan

<u>02-P104:</u> Hepatic differentiation of human induced pluripotent stem cells (iPSC) using 3D human liver extracellular matrix hydrogel

Luca Frenguelli, Rute Tomaz, Walid Al-Akkad, Mustapha Najimi, Etienne Sokal, Massimo Pinzani, Ludovic Vallier, Giuseppe Mazza Institute for Liver & Digestive Health, UCL, London, UK

<u>02-P105</u>: Improvement of safety for transplantation using cell encapsulation technique

Shogo Nagata, Fumisato Ozawa, Shoji Takeuchi Institute of Industrial Science, The University of Tokyo, Japan

<u>02-P106</u>: Comparison of the characteristics between human iPS cell-derived endothelial cells and mature vascular endothelial cells

Shinako Masuda, Katsuhisa Matsuura, Tatsuya Shimizu Institute of Advanced Biomedical Engieering and Science, Tokyo Women's Medical University, Tokyo, Japan

<u>02-P107:</u> Differentiation of human embryonic stem cells into cardiomyocytes cultured on biomaterials immobilized nanosegments with optimal culture medium

Tzu-Cheng Sung, Cheng-Hui Liu, Akon Higuichi Department of Chemical and Materials Engineering National Central University, Taiwan

P10. Mesenchymal stem cells

02-P108: Total Autologous Angiogenic Therapy with Cultured Bone Marrow Derived MSC Grown in Platelet-Rich Plasma against Critical Limb Ischemia

Shoji Fukuda, Shotaro Hagiwara, Hitoshi Okochi, Ryo Yakabe, Hiroko Suzuki, Satsuki Fukuda

Department of Cardiovascular Surgery, National Center for Global Health and Medicine, Japan

<u>02-P109:</u> Employment of a prolyl hydroxylase inhibitor to promote vascularization in tissue engineered constructs

Antje Kremer, Maximiliane Wußmann, Marietta Herrmann, Michael Raghunath, Heike Walles

Department Tissue Engineering and Regenerative Medicine (TERM), University Hospital of Wuerzburg, Wuerzburg, Germany

<u>02-P110:</u> Using adipose-derived stromal cells to induce vascularization and soft tissue wound healing

Alejandra Penuelas Alvarez, Joey Shepherd, Vanessa Hearnden Department of Materials Science and Engineering, Faculty of Engineering, University of Sheffield, UK

<u>02-P111:</u> Is hypoxic pre-conditioning of mesenchymal stem cells key to

angiogenesis of tissue engineering and regenerative medicine research? Jasmine Ho, Katerina Stamati, Martin Birchall, Mark Lowdell, Paolo De Coppi, Umber Cheema University College London, UK

<u>02-P112:</u> Mesenchymal stem cells secretome effects on muscletendinous unit for Massive rotator cuff tears treatment

Nuno E. Sevivas, Fábio G. Teixeira, Raquel V. Portugal, João D. Espregueira-Mendes, Filipe J. Oliveira, Rui F. Silva, Nuno J. Sousa, Kee Woei Ng, António J. Salgado

Life and Health Sciences Research Institute (ICVS), School of Medicine, University of Minho, Portugal

<u>02-P113:</u> Intra-articularly injected mesenchymal stem cells do not migrate and engraft in other, distant organs

Maria Satue, Reinhold G. Erben

Department of Biomedical Sciences, University of Veterinary Medicine, Vienna, Austria

<u>02-P114:</u> Epiregulin promoted migration and chemotaxis ability of

adipose-derived mesenchymal stem cells via MAPK signaling pathways Zhipeng Fan

Capital Medical University School of Stomatology, China

02-P115: Tuning substrate stiffness to unlock the potential of

mesenchymal stem cells paracrine signalling

Gina D Kusuma, Aeolus Vilar, Jean L Tan, Rebecca Lim, Jessica E Frith The Ritchie Centre, Hudson Institute of Medical Research, Clayton, Australia / Department of Materials Science and Engineering, Monash University, Clayton, Australia

<u>02-P116:</u> Impact of standardized platelet-derived growth factor lyophilisates on human MSC and chondrocytes *in vitro*

Olga Hahn, Anika Jonitz-Heincke, Thomas Tischer, Rainer Bader, Matthias Kieb, Cornelia Prinz, Kirsten Peters

Department of Cell Biology, Rostock University Medical Center, Rostock, Germany

<u>02-P117:</u> Injury modulates mesenchymal stromal cell secretory activity: effects on angiogenesis

Cansu Gorgun, Yannick M. Nossin, Eric Farrell, Gerjo J.V.M van Osch, Roberta Tasso

Department of Experimental Medicine, University of Genova, Genova, Italy / Regenerative Medicine Laboratory, Ospedale Policlinico San Martino, IRCCS per l'Oncologia, Genova, Italy

02-P118: Naringin Nanomicelles Delivery as a Bioinstuctive Strategy for Triggering Mesenchymal Stem Cells Osteogenic Differentiation

Pedro Lavrador, Vítor M Gaspar, **João F. Mano** CICECO, Aveiro Institute of Materials Department of Chemistry, University of Aveiro Portugal

02-P119: Exosome Mediated Multi-lineage Differentiation of Mesenchymal Stem Cells

Chun-Chieh Huang, Praveen Gajendrareddy, Raghuvaran Narayanan, Sriram Ravindran

Department of Oral Biology, University of Illinois at Chicago, Chicago, Illinois, USA

<u>02-P120:</u> Layer-by-layer Surface functionalized Microcarriers for Delivery of Pro-osteogenic Inducers to Mesenchymal Stem/Stromal Cells

Vitor M Gaspar, Clara Correia, Pedro Lavrador, João F. Mano CICECO - Aveiro Institute of Materials, Department of Chemistry, University of Aveiro, Aveiro, Portugal

<u>02-P121:</u> Three dimensional culture effect on the gene expression profile in human mesenchymal stem cells derived from bone marrow and adipose tissue under serum-free condition

Soon Jung Hwang, In Sook Kim

Department of Oral and Maxillofacial Surgery, College of Dentistry, Seoul National University, Seoul, Korea / Dental Research Institute, Seoul National University, Seoul, Korea

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02-P122: The Control of MSCs Differentiation by Fibrin Assemblies Endowed with Immobilized Growth Factors

Jana Musilkova, Elena Filova, Ondrej Kaplan, Eduard Brynda, Lucie Bacakova

Department of Biomaterials and Tissue Engineering, Institute of Physiologyof the Czech Academy of Sciences, Prague, Czech Republic

02-P123: Human Adipose Mesenchymal Cells Inhibit Melanocyte Differentiation and the Pigmentation of Human Skin via Increased Expression of TGF- β1

Agnes S. Klar, Thomas Biedermann, Katarzyna Michalak, Teresa Michalczyk, Claudia Meuli-Simmen, Arnaud Scherberich, Martin Meuli, Ernst Reichmann

Tissue Biology Research Unit, University Children's Hospital Zurich, University of Zurich, Switzerland

<u>02-P124:</u> Natural polymers mimicking human ECM orchestrate human adipose-derived stem cells behaviour

Prasad Sawadkar, Sturat Brown, Nupur Kohli, Elena Garcia-Gareta Regenerative Biomaterials group, The RAFT Institute, Mount Vernon Hospital, UK

02-P125: Characterization of Adipose Mesenchymal Stem Cells on HA/ ZrO2/PRP/HS Scaffold

mona latifi, Tahereh Talaei-Khozani, Maryam Kabir-Salmani, mahsa sani, Mahin Salmannejad

Department of Stem Cell and Regenerative Medicine, Medical Biotechnology Faculty, National Institute of Genetic Engineering and Biotechnology, Tehran, Iran

<u>02-P126:</u> Accelerated bone regeneration via three-dimensional cell printed constructs containing human nasal stem cells as a clinically applicable therapy

Sung Won Kim, Jung Yeon Lim, Byeong Gon Yun, Seok-Won Kim, Sun Hwa Park, Su Young Kim, Min Suk Lee, Jung Ho Jeon, Do Hyun Kim, Mi Hyun Lim, Sang A Back, Jinah Jang, Hee Seok Yang, Dong-Woo Cho

Department of Otolaryngology-Head and Neck Surgery, Seoul St. Mary's Hospital, The Catholic University of Korea, Seoul, Korea

02-P127: Engineering structures and functions of stem cells by suspended large-area graphene nanopatterned scaffolds

Sujin Kim, Sunho Kim, Dohyeon Lee, Daun Kim, Woochan Kim, Sungmin Park, Jangho Kim

Department of Rural and Biosystems Engineering, Chonnam National University, Korea <u>02-P128:</u> Optimization of the "Nichoid" substrate for the Culture and

Quantification of Stem Cell Function

Valentina Parodi, Emanuela Jacchetti, Tommaso Zandrini, Roberto Osellame, Giulio Nicola Cerullo, Manuela Teresa Raimondi Department of Chemistry, Materials and Chemical Engineering, Politecnico di Milano, Milano, Italy

<u>02-P129:</u> Noninvasive monitoring of mesenchymal stem cell viability labeled with indocyanine green using photoacoustic imaging

Jin Myoung Yoo, Chulhee Yun, Eun-Yeong Park, Nhat Quang Bui, Yong Wook Lee, Sang-Hyug Park, Won-Kyo Jung, Hyun Wook Kang, Junghwan Oh, Chulhong Kim, Seung Yun Nam

Interdisciplinary Program of Marine-Bio, Electrical & Mechanical Engineering, Pukyong National University, Busan, Korea / Department of Biomedical Engineering, Pukyong National University, Busan, Korea

<u>02-P130:</u> Differential and Interactive Effects of Substrate Topography and Chemistry on Human Mesenchymal Stem/Stromal Cell Gene Expression

Bo Zhang, Naresh Kasoju, Qiongfang Li, Jinmin Ma, Aidong Yang, Hui Wang, Zhanfeng Cui, Hua Ye

Institute of Biomedical Engineering, Department of Engineering Science, University of Oxford, Oxford, UK / Department of Engineering Science, University of Oxford, Oxford, UK

02-P131: Human mesenchymal stem cell responses to hydrostatic pressure and shear stress

Morad Bensidhoum, Magali Cruel, Pierre Becquart, Rena Bizios, Delphine Logeart-Avramoglou, Thierry Hoc, Herve Petite Laboratory of Bioengineering and Bioimaging for Bone Articulation, B2OA, INSIS CNRS, University of Paris 7, Paris, France

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02-P132: Using Mechanical Stretch Methodologies to Investigate the Circadian Clock and Differentiation Potential of Human Adult Progenitor Cells

Eve H Rogers, Vanja Pekovic Vaughan, John A Hunt Institute of Ageing and Chronic Disease, University of Liverpool, Liverpool, UK

<u>02-P133:</u> Novel xeno-free medium for expansion of human mesenchymal stem cells

Yasuhiro Tosaka, Tatsuji Enoki, Asako Hatsuyama, Sachiko Okamoto, Junichi Mineno

CDM Center Division 3, Takara-Bio Inc., Shiga, Japan

<u>02-P134:</u> Comprehensive gene expression analysis of human mesenchymal stem cells cultured on the micro elastically triangle patterned gel matrix

Rumi Sawada, Kousuke Moriyama, Kazusa Tanaka, Ken Kono, Yoji Sato, Hiroyuki Ebata, Saori Sasaki, Thasaneeya Kuboki, Satoru Kidoaki Division of Cell-Based Therapeutic Products, National Institute of Health Sciences, Kanagawa, Japan

02-P135: Comparative Study of xeno and xeno-free culture condition on human MSC & amp; iPSC

Soyeong Kang, Ho Kim, Dabin Seong, Joung Hee Baek, Min-jung Kim, Ki Dae Park, Jun Ho Eom, Chiyoung Ahn

Advanced Therapy Product Research Division, National Institute of Food and Drug Safety Evaluation, Ministry of Food and Drug Safetry, Korea

02-P136: Characterization of Rabbit Mesenchymal Stem Cells Cultured on Disc-Type Microcarriers

EunAh Lee, Seoyoung Jang, Jisoo Lee, Jaeseong Park, Tingting Zhang, Tong In Oh

Department of Medicine, Graduate School, Kyung Hee University, Seoul, Korea

02-P137: Platelet-rich Plasma Enhances the Proliferation of Human Adipose Stem Cells Through Multiple Signaling Pathways

Fangyuan Lai, Natsuko Kakudo, Naoki Morimoto, Shigeru Taketani, Tomoya Hara, Takeshi Ogawa, Kenji Kusumoto

Department of Plastic & Reconstructive Surgery, Kansai Medical University, Osaka, Japan

02-P138: A Novel Type of Microcarriers Manufactured by Microfluidic 3D Printing for In Vitro Expansion of Adherent Stem Cells in 3D Platform

EunAh Lee, Wook Park, Tong In Oh Impedance Imaging Research Center, Kyung Hee University, Seoul, Korea

<u>02-P139:</u> Fabrication of Microcarriers by 3D Micro Printing for In Vitro Stem Cell Expansion by 3D Culture and Monitoring by 2D Tools EunAh Lee, Wook Park, Eung Je Woo, Tong In Oh

Impedance Imaging Research Center, Kyung Hee University, Seoul, Korea

02-P140: The next generation of large scale MSC culture using 3D fabrics Shunmei Chiba, Taro Uchida

FullStem CO, Ltd., Japan

02-P141: ADULT BOVINE PLATELET-RICH PLASMA (PRP)-DERIVED SERUM "NeoSERA" IS SAFE AND POWERFUL ALTERNATIVE TO FETAL BOVINE SERUM FOR THE CULTURE OF MSCs

Kenichi Yamahara, Toshita Sudo, Ryuji Takata, Akiko Hamada, Shoko Kuroda, Kyoko Yoshihara, Satoshi Yoshihara, Masaya Okada, Toshihiro Soma, Shunsuke Ohnishi, Yoshihiro Fujimori

Department of Transfusion Medicine and Cellular Therapy, Hyogo College of Medicine, Hyogo, Japan / Japan Biomedical, Japan

02-P142: Generation of Myogenic Cell Sheet Fragments from Human Mesenchymal Stem Cells using Thermosensitive, Stretchable, and Piezoelectric Substrate for Skeletal Muscle Regeneration

SeokHyeong Go, Jeong-Kee Yoon, Mirnmoy Misra, Seung Jung Yu, Han Young Kim, Suk Ho Bhang, Seuk Young Song, Ju-Ro Lee, Seungmi Ryu, Yeon Woong Choo, Gun-Jae Jeong, Sung Pil Kwon, Sung Gap Im, Tae II Lee, Byung-Soo Kim

Interdisciplinary Program for Bioengineering, Seoul National University, Seoul, Korea

<u>02-P143:</u> Tissue-engineered constructs preservation using a novel slow vitrification method with polyampholytes

Kazuaki Matsumura, Sho Hatakeyama, Suong-Hyu Hyon Japan Advanced Institute of Science and Technology, Japan

02-P144: Stromal Cells Act as Guardians for Endothelial Progenitor Cells in Inflammatory Microenvironments

Martina Seifert, Meaghan Stolk, Dirk Strunk, Katharina Schallmoser, Hans-Dieter Volk, Naima Souidi

Berlin Brandenburg Center for Regenerative Therapies (BCRT), Charite-Universitaetsmedizin Berlin, corporate member of Freie Universitaet Berlin, Humboldt-Universitaet zu Berlin, and Berlin Institute of Health, Berlin, Germany / Institute of Medical Immunology, Charite Universitaetsmedizin Berlin, Berlin, Germany

02-P145: Phenotypic Delineation of the Endometrial Stromal Cell Compartment

Suzanna Mae Queckborner, Parameswaran Grace Lalitkumar, Kristina Gemzell-Danielsson, Lindsay C Davies

Department of Womens and Childrens Health, Karolinska Institutet, Stockholm, Sweden

<u>02-P146:</u> Neural crest stem cells: a novel source of cell therapy for neonatal hypoxic-ischemic brain damage

Cynthia Xiaohua Jiang, JiaWei Huang, Kin Pong U, Zhihui Weng, Biao Huang

School of Biomedical Sciences, the Chinese University of Hong Kong, Hong Kong

<u>02-P147:</u> Biocompatibility of Polyamide/Gelatin Mesh With or Without Endometrial MSC in an Ovine Model of Pelvic Organ Prolapse

Stuart James Emmerson, Sharon Edwards, Joan Melendez, Shayanti Mukherjee, Ker Sin Tan, Anna Rosamilia, Jerome Werkmeister, Caroline Gargett

Ritchie Centre, Hudson Institute of Medical Research, Melbourne, Australia / Department of Obstetrics and Gynaecology, Monash University, Melbourne, Australia

02-P148: Preconditioned Human Gingival Mesenchymal Stromal Cells Improve Skin Engraftment and Wound Healing Through Their Paracrine Activity

Brice Magne, Marina Trouillas, Muriel Nivet, Marianne Dedier, Bernard Coulomb, Sebastien Banzet, Jean-Jacques Lataillade INSERM U1197 / IRBA, Clamart, France

<u>02-P149:</u> *In-vitro* analysis of the immunomodulatory potential of MSCs and the accompanying phenotypic T cell switch in the context of differential immunogenicity evoked by hiPSC-derived cell types

Vera J. Mehler, Melanie L. Moore, Robert J. Francis, Hans Stauss, Chris J. Burns

Infection and Immunity, University College London, London, United Kingdom / Endocrinology, Biotherapeutics, National Institute for Biological Standards and Control (NIBSC), South Mimms, UK

<u>02-P150:</u> Therapeutic effects of autologous adipose derived regenerative cells for osteoarthritis in an experimental rabbit model

Yuichi Kuroda, Tomoyuki Matsumoto, Masanori Tsubosaka, Hirokazu Takeuchi, Koji Takayama, Shingo Hashimoto, Shinya Hayashi, Ryosuke Kuroda

Department of Orthopaedic Surgery, Kobe University Graduate School of Medicine, Kobe, Japan

02-P151: Effects of Three-Dimensional Culture on Plasticity of Equine Adipose Mesenchymal Stem Cells

Jienny Lee, Jeong Su Byeon, Mi Jeong Park, Da-Un Jeong, Na-Yeon Gu, In-Soo Cho, Sang-Ho Cha

Animal and Plant Quarantine Agency, Gimcheon-si, Korea

02-P152: Preventive effect of tonsil-derived mesenchymal stem cell on osteoradionecrosis

Hae Sang Park, Harry Jung, Han Su Kim Department of Otorhinolaryngology, Chuncheon Sacred Heart Hospital, Hallym University, College of Medicine, Chuncheon, Korea / Institute of New Frontier Research, Hallym University, College of Medicine, Chuncheon, Korea

02-P153: Combining Nonviral Genetically-Engineered Stem Cells with 3D Bioprinted Scaffolds for Accelerating Wound Healing

Yi-Chen Bai, Yee-Hsien Lin, Shang-Mo Tsai, Chien-Wen Chang* Department of Biomedical Engineering & Environmental Sciences, College of Nuclear Science, National Tsing Hua University, Taiwan

<u>02-P154</u>: Characterization of mesenchymal stem cell-conditioned media derived from human bone marrow, adipose tissue and Wharton 5 jelly with the focus on spinal cord injury repair

Sarka Kubinova, Irena Vackova, Karolina Turnovcova, Yuri Petrenko, Milada Chudickova, Zuzana Koci, Kristyna Zaviskova, Lucia Urdzikova-Machova, Pavla Jendelova

Institute of Experimental Medicine of the Czech Academy of Sciences, Prague, Czech Republic

02-P155: The Effect of Pulsed Electromagnetic Field (PEMF) Pre-treated Mesenchymal Stem Cells on the Regeneration of Crush - Injured Rat Mental Nerve

Na Ri Seo, Sung-Ho Lee, Kyung Won Ju, Bongju Kim, Jeong Won Jahng, Soung-Min Kim, Jong-Ho Lee

Department of Oral & Maxillofacial Surgery, Seoul National University Dental Hospital, Seoul, Korea / Dental Research Institute, Seoul National University School of Dentistry, Seoul, Korea / Dental Life Science Research Institute, Clinical Translational Research Center for Dental Science, Seoul National University Dental Hospital, Seoul, Korea

02-P156: Placenta-derived mesenchymal stem cells promote hepatic regeneration underlying mesenchymal-to-epithelial transition in rat model with bile duct ligation

Jaeyeon Kim, Ji Hye Jun, Han Oll Pi, Si Hyun Bae, Gi Jin Kim Department of Biomedical Science, CHA University, Seongnam-si, Korea

02-P157: Alteration of multipotent mesenchymal stromal cell functions upon interaction with allogeneic immune cells

Polina Bobyleva, Mariia Ezdakova, Aleksandra Gornostaeva Laboratory of Cellular Physiology, Institute of Biomedical Problems, RAS, Moscow, Russia

02-P158: Actin-depolymerization inducing by Col-1 gel culture accelerates osteoblastic differentiation of human umbilical cord mesenchymal stem cells

Mayumi Iwatake, Yoshinori Sumita, Tokiko Nagamura, Izumi Asahina Basic and Translational Research Center for Hard Tissue Disease, Nagasaki University, Nagasaki, Japan

02-P159: Hydrogel soft embossing for mass production of sizecontrolled stem cell spheroids

Se-jeong Kim, Jaesung Park, Heungsoo Shin

Department of Bioengineering, Hanyang University, Seoul, Republic of Korea / BK21 Plus Future Biopharmaceutical Human Resources Training and Research Team, Seoul, Korea

02-P160: Enhancement of post-islet transplantation graft survival rate using 3D stem cell aggregates with pro-angiogenesis and antiapoptotic effects

Chih-Ping Yu, Jyuhn-Huarng Juang, Chieh-Cheng Huang Institute of Biomedical Engineering, National Tsing Hua University, Hsinchu, Taiwan

02-P161: MESENCHYMAL STEM CELL ENCAPSULATION IN ALGINATE MICRO-PARTICLES FOR INTRA-ARTICULAR INJECTION IN **OSTEOARTHRITIS**

Audrey Smith, Anne Des Rieux, Mélanie Marquis, Denis Renard, Claire Vinatier, Jérôme Guicheux, Catherine Le Visage

Inserm, UMR, RMeS, Regenerative Medicine and Skeleton, Universite de Nantes, ONIRIS, Nantes, France / Louvain Drug Research Institute, Advanced Drug Delivery and Biomaterials, Université Catholique de Louvain, Bruxelles, Belgium

02-P162: Exposing mesenchymal stem cells to chondroitin sulphated proteoglycans reduces their angiogenic and neuro-adhesive paracrine activity

Chelsea Rheannon Wood, Ibtesam RT Al Delfi, John F Innes, Peter Mint, William EB Johnson

Biological Sciences, University of Chester, Chester, UK

02-P163: ATAC-seq revealed the tissue-of-origin specific epigenomes in mouse mesenchymal stem cells

Takashi Shimbo, Ho Yen-Ting, Edward Wijaya, Eiichi Takaki, Yuya Ouchi, Yasushi Kikuchi, Yasufumi Kaneda, Katsuto Tamai Department of Stem Cell Therapy Science Graduate School of Medicine, Osaka University, Osaka, JAPAN

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02-P165: Adipose-Derived Microtissues

Eleni Priglinger, Carolin Lindner, Christoph Wurzer, Sylvia Nuernberger, Julia Maier, Karin Strohmeier, Matthias Sandhofer, Christian Gabriel, Heinz Redl. Susanne Wolbank

Ludwig Boltzmann Institute for Experimental and Clinical Traumatology, AUVA Research Center, Linz/Vienna, Austria / Austrian Cluster for Tissue Regeneration, Vienna, Austria

<u>02-P166</u>: Ex vivo and in situ Activation of Adipose-Derived Cells by **Extracorporeal Shockwave Therapy**

Julia Maier, Eleni Priglinger, Carolin Lindner, Christoph Wurzer, Sylvia Nuernberger, Susanne Suessner, Heinz Redl, Susanne Wolbank Ludwig Boltzmann Institute for Experimental and Clinical Traumatology, AUVA Research Center, Linz/Vienna, Austria / Austrian Cluster for Tissue Regeneration, Vienna, Austria

<u>02-P167:</u> CD271+ selected MSCs are less angiogenic than plastic adherent selected MSCs with a similar differentiation potential

William E Johnson, Nupur Kohli, Martyn Snow, Ibtesam R Aldelfi University of Chester, UK

<u>02-P168:</u> Human adipose tissue-derived mesenchymal stem/stromal cells adhere to and inhibit the growth of Staphylococcus aureus and Pseudomonas aeruginosa

Chelsea Rheannon Wood, Douaa Al Dhahri, Ibtesam RT Al Delfi, Neil A Pickles, Rachel L Sammons, Tony Worthington, Karina T Wright, William EB Johnson

Biological Sciences, University of Chester, Chester, UK

02-P169: Perspectives of mesenchymal stem cell therapy for retinal degenerative disorders

Barbora Hermankova, Jan Kossl, Eliska Javorkova, Pavla Bohacova, Michaela Hajkova, Alena Zajicova, Magdalena Krulova, Vladimir Holan Institute of Experimental Medicine, Czech Academy of Sciences, Prague, Czech Republic / Faculty of Science, Charles University, Prague, Czech Republic

02-P170: Rapid Separation of Specific Stem Cell Populations for Autologous Cell Therapies

Alice Philipson, Christopher Wood, Michael McPherson, Jennifer Kirkham, Christoph Walti

School of Mechanical Engineering, University of Leeds, England, UK

02-P171: Application of Schwann cells differentiated from human tonsilderived MSCs to Charcot-Marie-Tooth disease mouse model

Saeyoung Park, Namhee Jung, Seoha Myung, Ji-Yeon kim, Inho Jo,

Sung-Chul Jung Department of Biochemistry, School of Medicine, Ewha Womans University, Seoul, Korea

02-P172: Comparison of Donor-matched Human Bone Marrow- and Adipose-derived Mesenchymal Stem/Stromal Cells in Xeno-free Conditions

Siddharth Shanbhag, Samih Mohamed Ahmed, Salwa Suliman, Anne Isine Bolstad, Kamal Mustafa

Department of Clinical Dentistry, University of Bergen, Bergen, Norway

<u>02-P173:</u> Mesenchymal stem cell-based therapy improves lower limb movement after spinal cord ischemia in rats

Kei Nakagawa, Shinya Takahashi, Tomoyuki Kurose, Takeshi Imura, Takashi Otsuka, Koki Kido, Mayumi Tomiyasu, Yumi Kawahara, Taijiro Sueda, Louis Yuge

Division of Bio-Environmental Adaptation Sciences, Institute of Biomedical and Health Sciences, Hiroshima University, Hiroshima, Japan

<u>02-P174</u>: The effect of adipose-derived stem cells for wound healing: **Comparison of application method**

Sang Wha Kim, Hyeonwoo Kim, Youn Hwan Kim Department of Plastic and Reconstructive Surgery, College of Medicine, Seoul National University, Seoul National University Hospital, Seoul, Korea

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<u>02-P175:</u> Human umbilical cord blood-derived mesenchymal stem cells transplantation after selective retinal laser treatment in retinal degeneration rodent model

In Hwan Cho, Dae Joong Ma, Un Chul Park, Hyeong Gon Yu Department of Ophthalmology, Soonchunhyang University, College of Medicine, Cheonan, Republic of Korea / Retinal degeneration Research Lab, Seoul National University Hospital Biomedical Research Institute, Seoul, Korea

02-P176: Effect and Influence of Morphological Information Content obtained for Image-based Cell Evaluation

Masaya Fujitani, Shun Kawai, Kei Kanie, Ryuji Kato

Department of Basic Medicinal Sciences, Graduate School of Pharmaceutical Sciences, Nagoya University, Nagoya, Japan

02-P177: Regenerative Potential of Tonsil Mesenchymal Stem Cells on Surgical Cutaneous Defect

Sung-Chan Shin, Ji Min Kim, **Hyun-Keun Kwon**, Hee Young Park, Hyung-Sik Kim, Byung-Joo Lee

Department of Otorhinolaryngology-Head and Neck Surgery, Pusan National University School of Medicine, Busan, Korea

<u>02-P178:</u> The Quality of Mesenchymal Stem Cells Isolated from Bone Marrow of Pseudoarthrosis Patients

Retno Wahyu Nurhayati, Fajar Mujadid, Ismail Hadisoebroto Dilogo, Aryadi Kurniawan

Stem Cell and Tissue Engineering Cluster, Indonesian Medical Education and Research Institute (IMERI), Faculty of Medicine, Universitas Indonesia, Central Jakarta, Indonesia

<u>02-P179:</u> Comparison of Osteogenic Capacity of Donor-Matched Bone Marrow and Adipose-Derived Stem Cells

Samih S. M. Mohamed-Ahmed, Inge Fristad, Mohammed A. A. Y. Yassin, Ahmad Rashad, Salwa M. N. Suliman, Kamal B. E. Mustafa, Hallvard A. Vindenes, Shaza B. M. Idris

Department of Clinical Dentistry, University of Bergen, Bergen, Norway

<u>02-P180:</u> Characterization of Stem Cells Derived by Human Adipocytes Dedifferentiation

Anna Figiel-Dabrowska, Krystyna Domanska-Janik, Anna Sarnowska Stem Cell Bioengineering Unit, Mossakowski Medical Research Centre, Polish Academy of Sciences, Warsaw, Poland / Translational Platform for Regenerative Medicine, Mossakowski Medical Research Centre, Polish Academy of Sciences, Warsaw, Poland

02-P181: Identification of anti-fibrotic factors of human adipose derived mesenchymal stromal/stem cells cultured in serum-free medium

Yui Ueno, Shigeyuki Ota, Hidenori Nonaka, Tsuyoshi Ishii, Arinobu Tojo ROHTO Pharmaceutical CO.,LTD., Japan

<u>02-P182:</u> Skeletal Muscle Induction from Dedifferentiated Fat (DFAT) Cells

Chikako Yoshida-Noro, Haruka Yamazaki, Keigo Inoue, Souta Shimizu, Tomohiko Kazaa, Taro Matsumoto

Department of Applied Molecular Chemistry, College of Industrial Technology, Nihon University, Chiba, Japan / Department of Applied Molecular Chemistry, Graduate School of Industrial Technology, Nihon University, Chiba, Japan / Division of Cell Regeneration and Transplantation Department of Functional Morphology, Nihon University School of Medicine, Tokyo, Japan

<u>02-P183:</u> A case of stroke exhibited significant recovery of neurological functions by adipocyte-derived stem cells transplanted intravenously

Masaki Tanaka, Narumi Nagoe, Asami Ueda, Takashi lizuka, Osamu Matsuo, Ken-ichi Mizutani, Masamitsu Ichihashi Arts Ginza Clinic, Chief Director, Tokyo Japan

02-P184: Stem cells in bone regeneration, a systematic approach and pilot study in humans

Cecilie Gudveig Gjerde, Kamal Mustafa, Solve Hellem, Mohammed Yassin, Aymen Ahmed, Markus Rojewski, Hubert Schrezenmeier, Pierre Layrolle

University of Bergen, Norway

<u>02-P185:</u> Stem cell-based therapies for neuro-muscular degenerative disorders: today and tomorrow

Erdal Karaoz Liv Hospital, Center for Regenerative Medicine and Stem Cell Research & Manufacturing (LivMedCell). Istanbul/Turkey / Istinye University, Faculty of Medicine, Department of Histology & Embryology, Istanbul/Turkey

02-P186: Construction of TRAIL-Expressing Stem Cells for Treating Human Prostate Cancer

Chien-Wen Chang, Yee-Hsien Lin, Rih-Yang Huang Department of Biomedical Engineering & Environmental Sciences, College of Nuclear Science, National Tsing Hua University, Taiwan

<u>02-P187:</u> Genetically-modified bone mesenchymal stem cells with TGF- β 3 improve wound healing and reduce scar tissue formation in a rabbit model

Mingyong Li, Lin Qiu, Xiang Deng, Qing Li, Hanfeng Xu, Zijian Xiao, Liangyu Peng, Peter Timashev, Shawn Johnson, Paul A Kingston, Anthony Atala, Wei Hu, Yuanyuan Zhang

First affiliated hospital, University of South China, Hengyang, Hunan, China

<u>02-P188:</u> Cellularized silver-pig skin nanocomposite as promising antibiofilm cellular dressing for wound healing

Cristina Velasquillo, Mario Alberto Pérez-Díaz, Phaedra Silva-Bermudez, Valentín Martínez-López, Yaaziel Melgarejo-Ramírez, Ana Brena-Molina, Clemente Ibarra, Isabel Baeza, M. Esther Martínez-Pardo, Erik Márquez-Gutiérrez, Gabriel Martínez-Castañon, Fidel Martinez-Gutierrez

Biotechnology Department, National Institute of Rehabilitation Luis Guillermo Ibarra Ibarra, Mexico City, Mexico

<u>02-P189:</u> Near infrared region-II (NIR-II) *in vivo* fluorescence imaging of transplanted stem cells labeled with quantum nanomaterials Hiroshi Yukawa, Yoshinobu Baba

Department of Biomolecular Engineering, Graduate School of Engineering, Nagoya University / ImPACT Research Center for Advanced Nanobiodevices, Nagoya University, Japan

<u>02-P190:</u> Vascularized human "fat-on-a-chip" model to recapitulate and study adipose tissue expansion and angiogenesis

Andres Sanz-Garcia, Sudong Kim, Christopher S. Chen, Carmen Escobedo-Lucea

Faculty of Pharmacy, University of Helsinki, Helsinki, Finland / The Wyss Institute for Biologically Inspired Engineering, Harvard University, Boston, USA / Department of Bioengineering and the Biological Design Center, Boston University, Boston, USA

<u>02-P191:</u> Multicellular Spheroids for Cartilage Tissue Engineering: High-throughput Cell Encapsulation in Microdroplets

Juan Aviles Milan, Xize Niu, Rahul Tare, Jonathan Ian Dawson Human Development and Health, University of Southampton, Southampton, UK / Mechatronics, Engineering and the Environment, University of Southampton, Southampton, UK

<u>02-P192:</u> Study of Pericytes potential for bone repair in a perfusable 3D microvascularized model

Sophie Verrier, Ana Rita Pereira, Laurent Barbe, Mauro Alini AO Research Institute Davos, Switzerland

<u>02-P193:</u> Multipotent mesenchymal stromal cells more effectively suppressed allogeneic activated T cells in vitro at tissue-related oxygen level

Aleksandra Nikolaevna Gornostaeva, Polina Ivanovna Bobyleva Cell physiology lab., Institute of Biomedical Problems of RAS, Moscow, Russia

<u>02-P194:</u> The regulation of lamin A/C in a 3D environment

Jip Zonderland, Ivan Lorenzo Moldero, Carlos Mota, Lorenzo Moroni MERLN, Maastricht University, Maastricht, The Netherlands

02-P195: An Enzyme Mediated Gelatin Hydrogel for Human Adipose-Derived Stem Cell Spheroids Culture and Guided Differentiation

Jiashing Yu, Nai-Chen Cheng, Ching-Cheng Tsai National Taiwan University, Taiwan
02-P196: Chondrogenic potential of human adipose-derived stem cells cultured onto gelatin-chitosan based hydrogels

Yaaziel Melgare jo-Ramirez, Erick Martinez-Colin, Roberto Sanchez-Sanchez, Rogelio Rodriguez-Rodriguez, Hugo Espinosa-Andrews, Clemente Ibarra, Cristina Velasquillo, Zaira Yunuen Garcia-Carvajal, Yaaziel Melgare jo-Ramirez

Laboratory of Biotechnology, National Institute of Rehabilitation, Mexico City. Mexico

02-P197: Development of Carriers for Mesenchymal Stem Cell (MSC) Therapy

Souta Shimizu, Taro Matsumoto, Daisuke Akita, Chikako Yoshida-Noro Department of Applied Molecular Chemistry, College of Industrial Technology, Nihon University, Chiba, Japan / Department of Applied Molecular Chemistry, Graduate School of Industrial Technology, Nihon University, Chiba, Japan

<u>02-P198</u>: Effects of astaxanthin in gelatin-methacryloyl (GelMA) scaffolds on proliferation of adipose-derived stem cells

Bo Young Choi, Elna Paul Chalisserry, Seung Yun Nam Department of Biomedical Engineering, Pukyong National University, Busan, South Korea / Interdisciplinary Program of Marine-Bio, Electrical & Mechanical Engineering, Pukyong National University, Busan, South Korea / Center for Marine-Integrated Biomedical Technology (BK21 Plus), Pukyong National University, Busan, Korea

<u>02-P199:</u> Vessel growth and bone formation depend on surface micromorphology of 3D-scaffolds

Daria Kuznetsova, Anastasia Koroleva, Anastasia Shpichka, Svetlana Rodimova, Boris Chichkov, Viktor Bagratashvili, Peter Timashev, Elena Zagaynova

Institute of Biomedical Technologies, Nizhny Novgorod State Medical Academy, Russia

<u>02-P200:</u> Mechanobiological regulation of stem cell function and tissue regeneration by nanotopographical extracellular matrix cues

Sungmin Park, Sunho Park, Dohyeon Lee, Woochan Kim, Daun Kim, Sujin Kim, Jangho Kim

Department of Rural and Biosystems Engineering, Chonnam National University, Korea 02-P201: Influence of carboxymethylcellulose hydrogel as a porogen

agent to acrylic bone cement on physicochemical properties and *in vitro* cell responses

Marjorie Durand, Mathilde Maillard, Florent Montespan, Vincent Larose, Sophie Frasca, Jean-Marc Collombet

Institut de Recherche Biomedicale des Armees (IRBA), Bretigny sur Orge, France

<u>02-P202:</u> The role of MMP-13 in remodeling of type I collagen during osteogenic differentiation of human adipose-derived stem cells

Yoshie Arai, Bogyu Choi, Byoung Ju Kim, Sunghyun Park, Hyoeun Park, Deogil Kim, In-bo Han, Soo-Hong Lee Department of Biomedical Sciences, University of CHA, Seoul, Korea

<u>02-P203:</u> Live Detection of a Fluorescent Myogenic Factor to estimate its Nuclear Import Flow in Mesenchymal Stem Cells growing in the 3D "nichoid" culture substrate

Lucia Boeri, Emanuela Jacchetti, Alessandro Negro, Diego Albani, Manuela Teresa Raimondi

Department of Chemistry, Materials and Chemical Engineering "Giulio Natta", Politecnico di Milano, Milan, Italy

<u>02-P204:</u> Oxygen-driven Regulation of DNMT3B Defines Methylation Status in Human Mesenchymal Stem Cells

Nicholas Robert Forsyth, Mark Kitchen, Rakad M K AL-Jumaily Institute for Science and Technology in Medicine, Keele University, UK

02-P205: Cell Product "Adipose Stroma-Associated Primitive HSCs" Demonstrates Immunosuppressive and Angiogenic Capacities

Ludmila B. Buravkova, Irina V. Andrianova, Aleksandra N. Gornostaeva, Elena R. Andreeva

Institute of Biomedical Problems RAS, Moscow, Russia

<u>02-P206</u>: Non-invasive and reversible cell adhesion and detachment through magnetic field on tunable substrate stiffness

Siu Hong Wong, Wai Ki Wong, Liming Bian Department of Biomedical Engineering. The Chinese University of I

Department of Biomedical Engineering, The Chinese University of Hong Kong, Hong Kong, China

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02-P207: Notch-inducing hydrogels to investigate the perivascular fate switch of human MSCs

Martin Ehrbar, Ulrich Blache, **Queralt Vallmajo-Martin**, Edward R Horton, Julien Guerrero, Valentin Djonov, Arnaud Scherberich, Janine T Erler, Ivan Martin, Jess G Snedeker, Vincent Milleret Department of Obstetrics, University of Zurich, Switzerland

02-P208: Pericyte Metabolic Mechanisms to Regulate a Bone Marrow Niche-Like Phenotype in vitro

Hannah Donnelly, Ewan Ross, Chris West, Bruno Peault, Manuel Salmeron-Sanchez, Matthew J Dalby

Centre for Cell Engineering, Institute of Molecular, Cell and Systems Biology, CMVLS, Joseph Black Building, University of Glasgow, Glasgow, UK

<u>02-P209:</u> Development of Custom 3D-Printed Polystyrene Bioreactors for the Generation of Mesenchymal Stem Cell Niche

Max Jonah Lerman, Josephine Lembong, Shin Muramoto, Michael Van Order, Greg Gillen, John Patrick Fisher

Department of Materials Science and Engineering, University of Maryland, College Park, MD, USA / Surface and Trace Chemical Analysis Group, Materials Measurement Laboratory, National Institute of Standards and Technology, Gaithersburg, MD, USA / Center for Engineering Complex Tissues, University of Maryland, College Park, MD, USA

02-P210: 3D hydrogel system: a tool towards hMSCs quiescent/statis state

David Boaventura Gomes, Abhishek Harichandan, Sandra Camarero-Espinosa, Lorenzo Moroni

MERLN institute, Maastricht University, Maastricht, the Netherlands

02-P211: Establishment of Bovine Tongue Epithelium-Derived Mesenchymal Stem Cells

Jienny Lee, Jeong Su Byeon, Mi Jeong Park, Na-Yeon Gu, Da-Un Jeong, In-Soo Cho, Sang-Ho Cha

Animal and Plant Quarantine Agency, Gimcheon-si, Korea

<u>02-P212:</u> Up-Scaling of the "Nichoid" Stem Cell Culture Substrate on a Large Surface

Tommaso Zandrini, Roberto Osellame, Giulio Cerullo, Manuela T Raimondi

Department of Chemistry, Materials, and Chemical Engineering "Giulio Natta", Politecnico di Milano, Milano, Italy / Istituto di Fotonica e Nanotecnologie - CNR, Milano, Italy

<u>02-P213:</u> The 3D nichoid culture substrate better preserves mesenchymal stromal cell structure and function than cell monolayer

Barbara Bonandrini, Lorena Longaretti, Marina Figliuzzi, Sara Conti, Tommaso Zandrini, Roberto Osellame, Giulio Cerullo, Andrea Remuzzi, Manuela Teresa Raimondi

Dept. of Chemistry, Materials and Chemical Engineering "G. Natta", Politecnico di Milano, Milan, Italy

02-P214: Pluripotency and Differentiation of Human Adipose-Derived Stem Cells in 2-D and 3-D culure

Chi-Sheng Hung, Chao-Wen Hsieh, Nien-Ju Ku, Akon Higuchi Department of Chemical and Material Engineering, National Central University, Zhongli, Taiwan

<u>02-P215:</u> Differences in biomarker release of 3D-spheroids of human mesenchymal stem/stromal cells in adipogenic differentiation *in vitro* compared to 2D culture

Anne Wolff, Kirsten Peters

Department of Cell Biology, University Medicine Rostock, Schillingallee Rostock, Germany

02-P216: Efficient human adipose stem cell osteogenic induction in 3D hydrogels

Kaisa Leena Vuornos, Miina Ojansivu, Janne Koivisto, Jenny Parraga Meneses, Heikki Häkkänen, Nick J Walters, Birhanu Belay, Toni Montonen, Jari Hyttinen, Janne Ihalainen, Leena Hupa, Minna Kellomäki, Susanna Miettinen

BioMediTech Institute and Faculty of Medicine and Life Sciences, University of Tampere, Tampere, Finland / Science Center, Tampere University Hospital, Tampere, Finland

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02-P217: Scalable Culture of Human Mesenchymal Stem Cells in Bioreactor

Shangwu Chen, Katsuhiko Nakashima, Keisuke Shibuya, Ryosuke Takahashi, Hiroshi Yoshida

Regenerative Medicine Business Sector, Hitachi Chemical co., Ltd., Japan

02-P218: Functional Evaluation of Cell Aggregation Induced Peptide for 3D Cell Culture

Yoshiaki Hirano, Shin-nosuke Takashiro, Yuki Yamamoto, Sachiro Kakinoki

Faculty of Chemistry, Materials and Bioengineering, Kansai University, Osaka, Japan / Organization for Research and Development of Innovative Science and Technology, Kansai University, Osaka, Japan

<u>02-P219:</u> Realtime monitoring of cell growth and differentiation in 3D MSC/PLLA constructs cultured in bioreactors

Vassilios Sikavitsas, Aaron Simmons

Stephenson School of Biomedical Engineering, The University of Oklahoma, USA

<u>02-P220:</u> The role of cadherin signalling in the differentiation of mesenchymal stem cells

Fiona Rosaleen Passanha, Clemens A. van Blitterswijk, Vanessa L.S. LaPointe

MERLN, Maastricht University, Maastricht, the Netherlands

<u>02-P221</u>: Application of synthetic gel for osteogenic differentiation of mesenchymal stem cells

Sunray Lee, Seol Chu, Jun Hyuk Bae, Ji Eun Kim, Hyun Jung Mo, Hyun-Sook Park

CEFO RESEARCH CENTER, Korea

02-P222: Human Mesenchymal Stem Cell Failure to Adapt to Glucose Shortage and Rapidly Use Intracellular Energy Reserves Through Glycolysis Explains Poor Cell Survival After Implantation

Herve Petite, Adrien Moya, Joseph Paquet, Michael Deschepper, Nathanael Larochette, Karim Oudina, Cyprien denoeud, Morad Bensidhoum, delphine Logeart-Avramoglou B2OA UMR CNRS, University Paris Diderot, Paris, France

02-P223: The Effect of Neighboring Endothelial Cells on Migration of Mesenchymal Stem Cells

Ji Eun Kim, Yun Gyeong Kang, Yanru Wu, Eun Jin Lee, Min Ju Kim, Jung-woog Shin

Department of Biomedical Engineering, Inje University, Gimhae, Korea

<u>02-P224:</u> Controlling mesenchymal stem cell fate with mechanosensitive microRNAs

Gina D Kusuma, James Carthew, Fanyi Li, Nicole Cloonan, Guillermo A Gomez, Justin J Cooper-White, Jessica E Frith Department of Materials Science and Engineering, Monash University, Clayton, Australia

<u>02-P225:</u> Use of the "Nichoid" Culture Substrate to study the Mechanobiology of Mesenchymal Stem Cells

Emanuela Jacchetti, Lucia Boeri, Alessandro Negro, Diego Albani, Giulio Cerullo, Roberto Osellame, Manuela Teresa Raimondi Department of Chemistry Materials and Chemical Engineering, Politecnico di Milano, Milan, Italy

<u>02-P226:</u> β -Glucan Derived from <u>Pleurotus Ostreatus</u> Induces MAPK Signaling Pathway Enhancing Osteogenic Differentiation Efficiency in Human Mesenchymal Stem Cells

Gokhan Duruksu, Leyla Kayiş, Seda Z. Halbutoğulları, Gulcin Gacar, Yusufhan Yazir

Center for Stem Cell and Gene Therapies Research and Application, Kocaeli University, Kocaeli, Turkey / Department of Stem Cell, Institute of Health Sciences, Kocaeli University, Kocaeli, Turkey

<u>02-P227:</u> Esophageal epithelial regeneration using nanofibrous scaffold with mesenchymal stem cells culture system in a bioreactor

Yanru Wu, Yun Gyeong Kang, Eun-Jae Chung, Hana Cho, Eun Jin Lee, Ji Eun Kim, Jung-Woog Shin

Department of Health Science and Technology, Inje University, Gimhae, Korea, Korea

02-P228: Bioinspired 3D printed PCL construct incorporating gellan gum gel as in vitro bone model

Piergiorgio Gentile, Elvira De Giglio, Maria A Bonifacio, Ana M Ferreira, Stefania Cometa, Zhi Y Ti, Antonella Stanzione, Kenneth Dalgarno

School of Engineering, Newcastle University, Newcastle upon Tyne, UK

<u>02-P229</u>: Establishment of three-dimensional anti-aging culture system for large-scale expansion of mesenchymal stem cells

Qin Zhang, Jiayan Zhang, Asma Mechakra, Ouyang Hongwei Dr. Li Dak Sum & Yip Yio Chin Center for Stem Cell and Regenerative Medicine, Zhejiang University, Hangzhou, China

<u>02-P230:</u> Attachment and Organisation of Human Mesenchymal Stem Cells on Poly(ethylene glycol) Hydrogels

Aman Singh Chahal, Manuel Schweikle, Catherine Anne Heyward, Hanna Tiainen

Department of Biomaterials, Faculty of Dentistry, University of Oslo, Norway

<u>02-P231:</u> Tissue-O₂ Related Level ("Physioxia") Provides Alteration of Extracellular Matrix Transcriptome of Multipotent Mesenchymal Stromal Cells

Maria I. Ezdakova, Elena R. Andreeva, Sergey V. Buravkov, Olga O. Udartseva, Ludmila B. Buravkova

Institute of Biomedical Problems of RAS, Moscow, Russia

02-P232: Reconstruction of the Alveolar Process in Kids with Orofacial Cleft by Using Bone Substitute Supported by Mesenchymal Stem Cells Derived from Umbilical Cord

Michal Kosinski, Anna Figiel-Dabrowska, Wioletta Lech, Anna Sarnowska

Translational Platform for Regenerative Medicine, Mossakowski Medical Research Centre, Polish Academy of Sciences, Warsaw, Poland / Department of Immunology, Faculty of Biology, University of Warsaw, Warsaw, Poland

02-P233: Comprehensive characterization of TRP receptors in human MSCs and brown adipose tissue reveals new potential therapeutic targets to modulate adipocyte phenotype

Anna Goralczyk, Marc van Vijven, Mathilde Koch, Cedric Badowski, Shabeer Muhammad, Sue-Anne Toh, Asim Shabbir, Alfredo Franco-Obregon, Michael Raghunath

Dept of Biomedical Engineering, National University of Singapore (NUS), Singapore / NUS Tissue Engineering Program, Life Science Institute, Singapore

<u>02-P234:</u> Capabilities of a new device for on-site separation and concentration of SVF cells from adipose tissue

Juliane Meyer, Anne Wolff, Kirsten Peters Department of Cellbiology, University Medicine Rostock, Rostock, Germany

02-P235: Catechol conjugated-chondroitin sulphate biopolymer as platform for mesenchymal stem cell culture for tissue engineering

Piergiorgio Gentile, Maria A Bonifacio, Yi Zhang, Fabio Cucinotta, Elvira De Giglio, Ana M Ferreira

School of Engineering, Newcastle University, Newcastle upon Tyne, UK <u>02-P236:</u> Comparison of adipose stem cell characteristics in

monozygotic twin pairs Mila Juntunen, Mimmi Patrikoski, Sini Heinonen, Aila Rissanen, Kirsi Pietiläinen, Susanna Miettinen

Adult Stem Cell Group, Faculty of Medicine and Life Sciences, University of Tampere, Tampere, Finland

02-P237: A HYBRID-MEMBRANE MIGRATION METHOD TO ISOLATE HIGH-PURITY OF ADIPOSE-DERIVED STEM CELLS FROM FAT TISSUES THROUGH MEMBRANES COATED WITH EXTRACELLULAR MATRICES

Yu-Chun Lee, Akon Higuchi Department of Chemical and Materials engineering, University of National Central, Taoyuan, Taiwan

02-P238: Interpositional jump-graft using a hybrid artificial nerveconduit with adipose-derived stem cells for rat facial nerve paralysis model

Wataru Kamei, Hajime Matsumine, Mari Shimizu, Satoshi Tsunoda, Kazuki Hashimoto, Hiroshi Fujimaki, Hiroyuki Sakurai Department of Plastic and Reconstructive Surgery, Tokyo Women's Medical University, Tokyo, Japan

<u>02-P239:</u> Educational and training on Stem Cells and Regenerative Medicine program for undergraduate medical students as an elective course at a Public School Medicine in Colombia: A 8-year Experience Nichole Marcela Rojas Chaverra, Iván Mauricio González, Daniel

Rodriguez, Cristian Murcia, Diana Gallo, Nebai González, Carlos Garzón, Sandra Bernal, Maria Camila Cuellar, Valeria Goyeneche, Justinne Patiño, Adriana Ramirez, Federico González, Perla Salgado, Orietta Ivonne Beltrán

Grupo de Investigación BioGenÉtica & BioDerecho. Facultad de Medicina Universidad Militar Nueva Granada, Bogotá, Colombia

<u>02-P240:</u> Development of a Novel Rapid and Label-free Device Using Remote Dielectrophoresis for Human MSCs Enrichment

Africa Sara Smith de Diego, Akshay Kale, Alban Smith, Jennifer Kirkham, Xuebin Yang, Christoph Wälti, Christopher Wood School of Dentistry, St James University Hospital, Leeds, UK / School of Electrical and Electronic Engineering, University of Leeds, Leeds, UK

<u>02-P557:</u> Morphology-based Post-performance Prediction of Mesenchymal Stem Cells after Cryopreservation

Ryuji Kato, Megumi Matsumoto, Kei Kanie, Kazunori Shmizu, Hiroyuki Honda

Graduate School of Pharmaceutical Sciences, Nagoya University, Nagoya, Japan / Graduate School of Engineering, Nagoya University, Nagoya, Japan

P11. Oral cavity, pharynx, larynx

<u>O2-P241:</u> Slow and fragmented release of sericin from silk mat induces tumour necrosis factor- α and indirectly regulates bone formation Seong-Gon Kim, Yei-Jin Kang

Department of OMFS, Gangneung-Wonju National University, Gangneung, Korea

<u>02-P242:</u> Role of TNS3 on the proliferation and differentiation of tonsilderived mesenchymal stem cells

Byungjoo Lee, JiMin Kim, Hyun-Keun Kwon Department of Otorhinolaryngology, Pusan National University, Busan, Korea

<u>02-P243:</u> The use of a 3D collagen matrix cell sheet and decellularized dermis to regenerate the mucosal layer in a bioengineered laryngeal transplant

Nick Hamilton, Angela Tait, Martin Birchall

University College London, London, UK / Royal National Throat Nose & Ear Hospital, London, UK

02-P244: Effective Peripheral Blood Mononuclear Cells Promote the Regeneration of Radiation Injured Salivary Glands

Yoshinori Sumita, Takashi I, Mayumi Iwatake, Takako Yoshida, Simon D Tran, Takayuki Asahara, Izumi Asahina

Basic and Translational Research Center for Hard Tissue Diseases, Nagasaki University, Nagasaki, Japan

02-P245: SWALL-E: A ROBOTIC SYSTEM MIMICKING THE DYNAMICS OF SWALLOWING FOR DEVICE TESTING

Nihal Engin Vrana, Nicolas Perrin, Julian van der Giessen, Fabrice Neveu, Yo Fujiso

Protip Medical, Strasbourg, France

<u>02-P246:</u> Development of a Micropatterned Fish Scale Collagen Scaffold to Manufacture a Tissue-Engineered Oral Mucosa

Ayako Suzuki, Hiroko Kato, Takahiro Kawakami, Yoshihiro Kodama, Mayuko Shiozawa, Emi Hoshikawa, Kenta Haga, Aki Shiomi, Atsushi Uenoyama, Issei Saito, Haruaki Hayasaki, Hiroyuki Kuwae, Keito Miwa, Jun Mizuno, Kenji Izumi

Division of Biomimetics, Niigata University Graduate School of Medical and Dental Science, Japan / Division of Pediatric Dentistry, Niigata University Graduate School of Medical and Dental Sciences, Japan

<u>02-P247:</u> Characteristic analyses of spheroids from oral mucosal cells in mice

Ni Li, Xianqi Li, Kai Chen, Hongwei Dong, Michiko Yoshizawa, Hideaki Kagami

Department of Hard Tissue Research, Graduate School of Oral Medicine, Matsumoto Dental University, Japan

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02-P248: Generation and analysis of spheroid from mouse compact bone-derived cells

Kai Chen, Xianqi Li, Ni Li, Hongwei Dong, Michiko Yoshizawa, Hideaki Kagami

Department of Hard Tissue Research, Graduate School of Oral Medicine, Matsumoto Dental University, Japan

<u>02-P249:</u> Application of basic fibroblast growth factor to the extraction socket prevents the occurrence of bisphosphonate-related osteonecrosis of the jaws after tooth extraction: An experimental study in rats

Mitsuhiko Imada, Takahiro Yagyuu, Yoshihiro Ueyama, Masahiko Maeda, Kazuhiko Yamamoto, Satoshi Kurokawa, Jun-ichiro Jo, Yasuhiko Tabata, Tadaaki Kirita

Depertment of Oral and Maxillofacial Surgery, Nara Medical University, Nara, Japan 02-P250: 3D models of head-neck squamous cell carcinoma via tissue

engineering

Serena Danti, Claudio Ricci, Luisa Trombi, Alessandra Fusco, Delfo D'Alessandro, Luca Bruschini, Giovanna Donnarumma, Alessandro Franchi, Stefano Berrettini

Dept. of Civil and Industrial Engineering, University of Pisa, Pisa, Italy / Consorzio Interuniversitario Nazionale per la Scienza e Tecnologia dei Materiali (INSTM), Florence, Italy

<u>02-P251</u>: Increased expression of calcium voltage-gated channel expression in aging vocal fold by comprehensive transcriptome analysis of next generation sequencing

Byungjoo Lee, Sungchan Shin, JiMin Kim Department of Otorhinolaryngology, Pusan National University, Busan, Korea

<u>02-P252:</u> MSC delivery by hyaluronic acid to treat vocal fold scarring

Jons Gunnar Hilborn, Katarina LeBlanc, Stellan Hertegård Department of Chemistry-Angstrom Laboratory, University of Uppsala, Sweden / Department of Bioengineering, University of Tokyo, Japan

P12. Respiratory organ

<u>02-P253:</u> Efficiency of low-level laser therapy to prevent tracheal stenosis in an animal model

Hyoung Shin Lee, Van N. Tran, Ye-Chan Lee, Sung Won Kim, Chulho Oak, Hyun Wook Kang, Kang Dae Lee

Department of Otolaryngology-Head and Neck Surgery, Kosin University College of Medicine, Busan, Korea / Marine-Integrated Bionics Research Center, Pukyong National University, Busan, Korea

<u>02-P254</u>: Comparison of The Effects of Growth Factors Supplemented to Collagen Sponge Scaffold on Rat Tracheal Epithelial Regeneration: Contrasting Effects of bFGF and EGF on the Regeneration of Cilia motility

Ryosuke Nakamura, Tatsuya Katsuno, Morimasa Kitamura, Masaru Yamashita, Takuya Tsuji, Ryo Suzuki, Yo Kishimoto, Atsushi Suehiro, Ichiro Tateya, Tatsuo Nakamura, Koichi Omori

Department of Otolaryngology-Head and Neck Surgery, Graduate School of Medicine, Kyoto University, Japan

02-P255: Proteomic Analysis of Nasal Fibroblast Secretory Product That Accelerates *In Vitro* Wound Healing of Respiratory Epithelial Cells

Rohaina binti Che Man, Yogeswaran Lokanathan, Muhammad Dain Yazid, Aminuddin bin Saim, Ruszymah binti Hj Idrus Tissue Engineering Centre, University Kebangsaan Malaysia Medical Centre, Kuala Lumpur, Malaysia

<u>02-P256:</u> Analysis of Airway Fibroblast Secretome to Identify the Airway Epithelium Wound Healing Mediators

Yogeswaran Lokanathan, Nundisa Jaulin, Rohaina Che Man, Shiplu Roy Chowdhury, Aminuddin Saim, Ruszymah Hj Idrus Tissue Engineering Centre, UKM Medical Centre, Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia

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$\begin{array}{l} \underline{\textbf{O2-P257:}} \ The \ Potential \ of \ Olea \ europea \ Extract \ in \ Preventing \ TGF- \ \beta \ Induced \ Epithelial \ to \ Mesenchymal \ Transition \ in \ Human \ Respiratory \ Epithelial \ Cells \end{array}$

Rabiatul Adawiyah Razali, Nik Ahmad Hafiz Nik Ahmad Eid, Turkambigai Jayaraman, Muhammad Asyrafi Amir Hassan, Nabilah Qistina Azlan, Nur Farhana Ismail, Nur Qisya Afifah Veronica Sainik, Muhammad Dain Yazid, Yogeswaran Lokanathan, Aminuddin Saim, Ruszymah Haji Idrus

Department of Physiology, Faculty of Medicine, Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia

<u>02-P258:</u> Remodeling the vasculature in the decellularized lung scaffold using adipogenic stromal cells

Tomoshi Tsuchiya, Ryoichiro Doi, Tomohiro Obata, Sadanori Akita, Norisato Mitsutake, Hiroshi Yukawa, Toshinobu Baba, Keitaro Matsumoto, Takuro Miyazaki, Go Hatachi, Hironosuke Watanabe, Daisuke Taniguchi, Yoshikazu Higami, Eiji Kobayashi, Takeshi Nagayasu

Department of Surgical Oncology, Nagasaki University Graduate School of Biomedical Sciences, Nagasaki, Japan / Translational Research Center, Research Institute for Science & Technology, Tokyo University of Science, Chiba, Japan

02-P259: Pulmonary Vascular Engineering Using Induced Endothelial Progenitor-like Cells

Takaya Suzuki, Golnaz Karoubi, Pascal Duchesneau, Thomas K Waddell

National Hospital Organization, Sendai Medical Center / Latner Thoracic Surgery Laboratories, University of Toronto, Canada

<u>02-P260:</u> Tranilast-loaded tubular scaffold and tranilast-loaded suture for suppression of stenosis after tracheal

Ji Suk Choi, Sang Jin Lee, Beom Kang Huh, Mi-Jung Han, Hee-Jin Ahn, Young-Ju Jin, Su-A Park, Young Bin Choy, Seong Keun Kwon Department of Otorhinolaryngology-Head and Neck, Seoul National University Hospital, Seoul, Korea

<u>02-P261:</u> Infusion of Lung-derived Mesenchymal Stem Cells Preconditioned by Culturing on Lung Extracellular Matrix and Cyclic Stretch Optimizes Treatment of Ventilator-induced Lung Injury in Rats

Isaac Almendros, Bryan Falcones, Paula Nonaka, Ramon Farre, Daniel Navajas

University of Barcelona, Spain / CIBER Enfermedades Respiratorias / Institut Investigacions Biomediques August Pi Sunyer, Spain

<u>02-P262:</u> Laryngotracheal reconstruction with artificial trachea

Yo Kishimoto, Ryosuke Nakamura, Atsushi Suehiro, Masaru Yamashita, Morimasa Kitamura, Ichiro Tateya, Tatsuo Nakamura, Koichi Omori

Department of Otolaryngology, Head and Neck Surgery, Graduate School of Medicine, Kyoto University, Kyoto, Japan

<u>02-P263:</u> The promotion of tracheal cartilage growth by tracheal administration of basic fibroblast growth factor

Makoto Komura, Hiroko Komura, Kenichiro Konishi, Yasuhiko Tabata Division of Tissue Engineering, The University of Tokyo Hospital / Dept. of Pediatric Surgery, Graduate School of Medicine, Saitama Medical University, Japan

<u>02-P264:</u> Intrapleural administration of gelatin-embedded, sustainedrelease basic fibroblast growth factor for the regeneration of emphysematous lungs

Yumi Yata, Tatsuya Yoshimasu, Yasuhiko Tabata, Mitsumasa Kawago, Yoshimitsu Hirai, Takuya Ohashi, Aya Fusamoto, Takahiro Kinoshita, Yoshiharu Nishimura

Department of Thoracic and Cardiovascular Surgery, Wakayama, Japan

<u>02-P265:</u> Organotypic culture of human nasal epithelial cells and its applications

Kyuhwan Na, Youngkyu Cho, Jihee Won, Yesl Jun, Ji hun Yang, Seok Chung

School of mechanical engineering, Korea University, Seoul, Korea

02-P266: A pulmonary model for assessment of particulate matter health effects

Jia-Wei Yang, Pei-Yi Ho, Ming-Liang Tseng, Guan-Yu Chen Institute of Biomedical Engineering, College of Electrical and Computer Engineering, University of National Chiao Tung, Hsinchu City, Taiwan / Department of Electrical and Computer Engineering, College of Electrical and Computer Engineering, National Chiao Tung University, Hsinchu, Taiwan

<u>02-P267:</u> Restoring Tracheal Defects with Tissue Engineered Patches Based on TGF- β 3 Encapsulated Electrospun PLCL/collagen Scaffolds in a Rabbit Model

Xiaomin He, Hui Jing, Xiaoyang Zhang, Jinghao Zheng Department of Cardiothoracic Surgery, Shanghai Children Medical Center, Shanghai Jiao Tong University School of Medicine, Shanghai, China

02-P268: In vitro Airway Mucus Model for Drug Screening

Daniela Peneda Pacheco, Francesco Briatico Vengosa, Lorenzo Sardelli, Giulia Villa, Laura Pastorino, Livia Visai, Sonja Visentin, Paola Petrini

Department of Chemistry, Materials and Chemical Engineering "Giulio Natta" at Politecnico di Milano, Milano, Italy

<u>02-P269:</u> Rock inhibitor Y-27632 enables feeder-free expansion of *Sus scrofus domesticus* bronchial stem cells for regenerative medicine research

Tina Patricia Dale, Emily Borg D'Anastasi, Nicholas Robert Forsyth Institute for Science and Technology in Medicine, Keele University, UK

<u>02-P270:</u> Functional characterization of various ion channelsexpressing airway epithelial cells generated from induced pluripotent stem cells

Susumu Yoshie, Ryosuke Nakamura, Daisuke Kobayashi, Masao Miyake, Koichi Omori, Akihiro Hazama Department of Cellular and Integrative Physiology, School of Medicine, Fukushima Medical University, Fukushima, Japan

02-P271: Assessing a candidate scaffold for an alveolar structural mimic in lung tissue engineering

Ana Yuliyanova Kyoseva, Nicholas Robert Forsyth , Ying Yang Institute for Science and Technology in Medicine, Keele University, Newcastle-under-Lyme, England, UK

<u>02-P272:</u> Acellular scaffolds by High hydrostatic pressure (HHP) for airway reconstruction in porcine model : findings of a long-term observation

Yasushi Fuchimoto, Michinobu Ohno, Shin Enosawa, Tetsuji Yamaoka Department of Pediatric Surgery, International University of Health and Welfare School of Medicine, Chiba, Japan

P13. Skeletal muscle

02-P273: Solar Cell-Facilitated Electrical Stimulation for Therapeutic Angiogenesis

Songhyun Lim, Gun-Jae Jeong, Jin Young Oh, Yeon-Ju Kim, Tae Il Lee, Byung-Soo Kim

School of Chemical and Biological Engineering, Seoul National University, Seoul , Korea 02-P274: Fibroblast Growth Factor, Potential Game Plan for

Regeneration of Skeletal Muscle

Kirankumar Gudagudi, Kathryn H Myburgh Department of Physiological Sciences, University of Stellenbosch, South Africa

02-P275: The mass analysis of constitutively secreted compounds in tissue-engineered muscle

Tomohiro Nakamura, Tatsuki Shibahara, Aya Takamori, Aki Nunomiya, Makoto Miyata, Ryoichi Nagatomi, Toshia Fujisato Division of Human Sciences, Osaka Institute of Technology, Osaka, Japan

<u>02-P276:</u> Development of a controlled drug release system of Cripto for muscular dystrophies therapy

Rachel Lev, Olga Kossover, Yonatan Lati, Dror Seliktar, Ombretta Guardiola, Gabriella Minchiotti Faculty of Biomedical Engineering, Technion-Israel Institute of Technology, Haifa, Israel

<u>02-P277:</u> Enhancing performance of engineered skeletal muscles through vascularization

Hyeonyu Kim, Tatsuya Osaki, Roger D Kamm, Haruhiko Harry Asada Department of Mechanical Engineering, Massachusetts Institute of Technology, Cambridge, MA, USA

02-P279: Engineering of Volumetric Skeletal Muscle Tissue for Accelerated Restoration of Pelvic Floor Muscle Function

Ji Hyun Hyun Kim, In Kap Ko, Myung Jae Jeon, Ickhee Kim, Sang Jin Lee, Anthony Atala, James J Yoo

Wake Forest Institute for Regenerative Medicine, USA

<u>02-P280:</u> 3D printing skeletal muscle tissue with wet-spun hydrogel fibers

Marco Costantini, Jan Guzowski, Wojciech Święszkowski, Cesare Gargioli

Institute of Physical Chemistry, Polish Academy of Sciences, Warsaw, Poland

02-P281: 3D Bioprinting of Biomimetic Neural Skeletal Muscle Tissue Constructs

Ji Hyun Hyun Kim, Young-Joon Seol, In Kap Ko, Ickhee Kim, James J Yoo, Anthony Atala, Sang Jin Lee

Wake Forest Institute for Regenerative Medicine, USA

02-P282: Endothelium Muscle-specificity Induction and Fibroblast Recruitment in Engineered 3D Human Muscle Environment for the Study of Fibrosis

Simone Bersini, Mara Gilardi, Stefano Ugolini, Veronica Sansoni, Giuseppe Talò, Silvia Perego, Simona Zanotti, Marina Mora, Monica Soncini, Marco Vanoni, Giovanni Lombardi, Matteo Moretti Cell and Tissue Engineering Lab, IRCCS Istituto Ortopedico Galeazzi, Milano, Italy

02-P283: Fabrication of Anisotropic Nano/Micro Hierarchical Collagen Scaffold Mimicking Skeletal Muscle Extracellular matrix

JiUn Lee, WonJin Kim, Gi Hoon Yang, YoungWon Koo, JaeYoon Lee, Miji Yeo, YoungEun Choe, Haeri Kim, JaeHeon Jeong, Soo Jung Chae, Yeon Soo Lee, GeunHyung Kim

Department of Biomechatronic Engineering, Sungkyunkwan University (SKKU), Korea

<u>02-P284:</u> Fiber based real-time fluorescent imaging platform to determine the effect of myogenic modulators

Shay Soker, Etai Sapiznik, Guoguang Niu, Yu Zhau, Yong Xu Wake Forest University School of Medicine / Wake Forest Institute for Regenerative Medicine, USA

<u>02-P285</u>: Non-invasive monitoring of skeletal muscle regeneration after human-derived myoblast transfer therapy in a mouse hind limb via magnetic resonance imageing

Daniel Keller, Christian Eberhardt, Andreas Boss, Daniel Eberli Laboratory for Tissue Engineering and Stem Cell Therapy, Department of Urology, University Hospital Zurich, Zurich, Switzerland / Department of Diagnostic and Interventional Radiology, University Hospital Zurich, Zurich, Switzerland / Zurich Center of Integrative Human Physiology, University of Zurich, Zurich, Switzerland

02-P286: PET/CT Tracking of Human Muscle Precursor Cells and Neo-Vascularization for Tissue Engineering of Skeletal Muscles

Deana Mohr-Haralampieva, Souzan Salemi, Simon M Ametamey, Daniel Eberli

Laboratory for Tissue Engineering and Stem Cell Therapy, Department of Urology, University Hospital Zurich and University of Zurich, Switzerland / Institute of Pharmaceutical Sciences, ETHZ, Zurich, Switzerland / Zurich Center for Integrative Human Physiology (ZIHP), Switzerland

<u>02-P287:</u> Optimal Conjugation of Uniaxial Pattern and Electric Field for Musculoskeletal Differentiation

Ung Hyun Ko, Sukhee Park, Hyunseung Bang, Mina Kim, Hyunjun Shin, Jennifer H. Shin

Department of Mechanical Engineering, Korea Advanced Institute of Science and Technology, Daejeon, Korea

02-P288: Fully automated, personalized small batch cell culturing bioreactor for regenerative medicine

Dominik Ralph Siallagan, Stephan Cecil Fox, Marianne Schmid Daners, Mirko Meboldt

Product Development Group Zurich, Department of Mechanical and Process Engineering, ETH Zurich, Switzerland

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<u>02-P289:</u> Importance of the Timing Between the Induction of Muscle Regeneration and the Transplantation of Myogenic Cells in the Outcome of Muscle Cell Therapy: a Study in Non-Human Primates

Daniel Skuk, Jacques P. Tremblay Axe Neurosciences, Research Center of the CHU de Quebec - CHUL, Quebec, QC, Canada

<u>02-P290:</u> Age-related factors regulate integration and maturation of muscle progenitor cells upon transplantation into muscle injury

Shay Soker, Yu Zhou, Tracy Criswell Wake Forest University School of Medicine / Wake Forest Institute for Regenerative Medicine, USA

02-P291: The use of Skeletal Muscle-Derived Pericytes in Tissue Engineering of Skeletal Muscle Graft based on 3D Pluronic-Fibrinogen (FF-127) Hydrogel Environment

Raziel Hamami, Cesare Gargioli, Dror Seliktar Department of Bio Medical Engineering, Technion - Israel Institute of Technology, Haifa, Israel

<u>02-P292:</u> Treatments Reported to Improve Muscle Precursor Cell Transplantation in Mice Fail to Improve it in Non-Human Primates: a Cautionary Note in the Clinical Relevance of Cell Therapy Experiments in Mice

Daniel Skuk, Vanessa Couture, Marlyne Goulet, Jacques P. Tremblay Axe Neurosciences, Research Center of the CHU de Quebec - CHUL, Quebec, QC, Canada

02-P293: Diabetes Approach by Multi-Organ-on-a-Chip

Javier Ramón-Azcón, Xiomara Fernández-Garibay, Ferran Velasco-Mallorquí, Alejandro Hernández, Albert G. Castaño, María G. Ortega Institute for Bioengineering of Catalonia (IBEC), The Barcelona Institute of Science and Technology, Barcelona Spain

02-P295: ENDOPLASMIC RETICULUM STRESS LEVEL CHANGED UNFOLDED PROTEIN RESPONSE MODULATION IN DYSTROPHIN-DEFICIENT MYOBLASTS

Muhammad Dain Yazid, Janet Smith, Neil A Hotchin Tissue Engineering Centre, UKM Medical Centre, Cheras, Kuala Lumpur, Malaysia. / School of Biosciences, University of Birmingham, Edgbaston, Birmingham, UK

<u>02-P296:</u> Electrical Stimulation of Myoblast-laden Conductive Spongy-Like Hydrogels for Skeletal Muscle Tissue Engineering

Lucilia P da Silva, Andreia F Carvalho, Ana I Barbosa, João F Riebiro, Pathomthat Srisuk, Luca Gasperini, Rui L Reis, Alexandra P Marques, Vitor M Correlo

3B's Research Group – Biomaterials, Biodegradables and Biomimetics, Headquarters of the European Institute of Excellence on Tissue Engineering and Regenerative Medicine, University of Minho, Avepark Barco, Guimarães, Portugal / ICVS/3B's – PT Government Associate Laboratory, Braga/Guimarães, Portugal

02-P298: Myogenic differentiation triggered by zinc ions

Roser Sabater i Serra, Hayk Mnatsakanyan, Patricia Rico, Manuel Salmerón-Sánchez

Centre for Biomaterials and Tissue Engineering. Universitat Politecnica de Valencia, Spain / Biomedical Research Networking Center in Bioengineering, Biomaterials and Nanomedicine (CIBER-BBN), Spain

<u>02-P299:</u> Effective development of neuromuscular junction in coculture with hiPS cell-derived motor neurons and oriented engineered muscle tissue

Fumiko Oikawa, Hironobu Takahashi, Tatsuya Shimizu, Naoya Takeda Department of Life Science and Medical Bioscience, Graduate School of Advanced Science and Engineering, Waseda University (TWIns), Tokyo, Japan

<u>02-P300</u>: The Effect of Irradiation on Cultured Myoblasts

Tracy Criswell, Yu Zhou, Hailey Premo, Shay Soker Institute for Regenerative Medicine, Wake Forest University, Winston-Salem, NC USA

<u>02-P301:</u> Absence of SIRT2 induces muscular adipogenesis in aged mice

by PPAR-gamma signaling pathway Kyu-Shik Jeong, Soong-Koo Kim, Yong Deuk Kim, Myung-Jin Chung, Ahmed K. Elfadl, Arif H Ullah, Sul-Gi Jeon, Hye-Ju Choi, Jin-Kyu Park Depatment of Veterinary Medicine, Kyungpook National University, Daegu, Korea / Stem Cell Therapeutic Research Institute, Kyungpook National University, Daegu, Korea

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<u>02-P302:</u> Development of a urinary rhabdosphincter tissue scaffold on the basis neuromuscular stimulation and multiple cell types for improved innervation and vascularisation

Marc Vollenweider, Daniel Keller, Daniel Eberli

Department of Urology, University Hospital Zurich / Department of Diagnostic and Interventional Radiology, University Hospital Zurich, Zurich, Switzerland / Zurich Center of Integrative Human Physiology, University of Zurich, Zurich, Switzerland

P14. Stromal cell / fibroblast

<u>02-P303:</u> Transfection of synthetic modified mRNA encoding VEGFA into skin fibroblasts promotes revascularization in a murine model of limb ischemia

Ziyou Yu

Shanghai Ninth People's Hospital, Shanghai Jiaotong University School of Medicine, China

<u>02-P304:</u> FGF-2, but not the adipose tissue-derived stromal cells' secretome, inhibits differentiation of human cardiac fibroblasts into myofibroblasts

Tacia Tavares de Aquinas Liguori, Gabriel Romero Liguori, Luiz Felipe Pinho Moreira, Martin Conrad Harmsen

Cardiovascular Regenerative Medicine Research Group (CAVAREM), Department of Pathology and Medical Biology, University Medical Center Groningen, Groningen, the Netherlands / Laboratório de Cirurgia Cardiovascular e Fisiopatologia da Circulação (LIM-11), Instituto do Coração (InCor), Hospital das Clinicas HCFMUSP, Faculdade de Medicina, Universidade de Sao Paulo, Sao Paulo, SP, Brazil

<u>02-P305:</u> Tracking tissue turnover and scaffold degradation in 3D constructs

Ying Yang, Rachel Gater, Alicia El Haj

Institute of $\bar{\rm S}{\rm cience}$ & Technology in Medicine, Úniversity of Keele, Stoke-on-Trent, ST4 7QB, UK

<u>02-P306:</u> Platelet Lysate Prepared from Expired Platelet Concentrates for the Culture of Skin Dermal Fibroblasts

Jia Xian Law, Chooi Fun Leong, Angela Min Hwei Ng Tissue Enginering Centre, Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia

<u>02-P307:</u> Interactions between cancer and stromal cells in silk biomaterial-based 3D breast cancer model

Virginia Brancato, Banani Kundu, Joaquim Miguel Oliveira, Vitor Correlo, Rui Luis Reis, Subhas Chandra Kundu

3B's Research Group – Biomaterials, Biodegradable and Biomimetics, Avepark – Parque de Ciência e Tecnologia, Zona Industrial da Gandra, Barco – Guimarães, Portugal / ICVS/3B's – PT Government Associate Laboratory, Braga/Guimarães, Portugal

<u>02-P308:</u> Improved adipocyte viability in autologous fat grafting with ascorbic acid supplemented tumescent solution

Alexander Lunger, Tarek Ismail, Atanas Todorov, Joel Buergin, Fabian Lunger, Ida Oberhauser, Martin Haug, Daniel Felix Kalbermatten, Rene Denis Largo, Ivan Martin, Arnaud Scherberich, Dirk Johannes Schaefer

Department of Plastic Surgery, Basel University Hospital, Switzerland / Laboratory of Tissue Engineering, Department of Biomedicine, University Hospital Basel, Switzerland

<u>02-P309</u>: Effects of scriptaid on reprogramming of donor cell and development of interspecies SCNT embryos

Seunghoon Lee, Jin-gu No, Tai-Young Hur, Yoon-seok Nam, Gi-sun Im, Dong-hoon Kim Animal Biotechnology Division, National Institute of Animal Science, Wanju, Korea

P15. Tendon

<u>02-P310:</u> In Vivo Biocompatibility of Magnetic Responsive Scaffolds Envisioning Tendon Healing

Ana I Goncalves, Márcia T Rodrigues, Rui L Reis, Manuela E Gomes 3B's Research Group - Biomaterials, Biodegradables and Biomimetics, University of Minho, Headquarters of the European Institute of Excellence on Tissue Engineering and Regenerative Medicine, Avepark - Zona Industrial da Gandra, Barco, Guimarães, Portugal / ICVS/3B's - PT Government Associate Laboratory, Braga/Guimarães, Portugal

02-P311: Mesenchymal stem cell aggregates with gelatin hydrogel microspheres for regenerative therapy of tendon injury in equine practice

Norihisa Tamura, Taisuke Kuroda, Kentaro Fukuda, Atsushi Tomita, Yasuhiko Tabata, Yoshinori Kasashima Clinical Veterinary Medicine Division, Equine Research Institute, Japan Racing Association, Tochigi, Japan

<u>02-P312:</u> Functionalized 3D printed micro fibre scaffolds to bridge the gap between tendon/ligament and bone tissues

Miguel Dias Castilho, João Crispim, Chella Hagmeijer, Pascal Jonkheijm, Daniel Saris, Jos Malda

Department of Orthopaedics, University Medical Center Utrecht, the Netherlands / Department of Biomedical Engineering, Eindhoven University of Technology, the Netherlands

<u>02-P313:</u> Histological evaluation of tendon regeneration using scaffoldfree 3D-bioprinted construct from human dermal fibroblasts under static tensile culture in vitro

Yoshitaka Nakanisi, Takamitsu Okada, Koichi Nakayama, Naohide Takeuchi, Naoya Kozono, Takahiro Senjyu, Yasuharu Nakashima Department of Orthopaedics Surgery, University of Kyushu, Fukuoka, Japan

02-P314: MECHANICAL STIMULATION OF TENDON ENGINEERED CONSTRUCT

Alejandro Garcia-Garcia, Jean Baptiste Perot, Megane Beldjilali-Labro, Marie Naudot, Sophie Le Ricousse, **Cecile Legallais**, Fahmi Bedoui UMR 7338 Laboratory of Biomechanics and Bioengineering, BMBI, University of Technology of Compiegne, Compiegne, France

02-P315: Development of an automated stretch-perfusion bioreactor system for the culture of reseeded decellularized tendon matrices

Giuseppe Talo', Daniele D'Arrigo, Renato Auriemma, Arianna Barbara Lovati, Matteo Moretti

Cell and Tissue Engineering Laboratory, IRCCS Galeazzi Orthopaedic Institute, Milan, Italy

<u>02-P316:</u> 3D printed bioreactors for tendon tissue engineering:

characterising load-induced changes by the 'collagen barcode' Adam Janvier, Elizabeth Laird, James Henstock Institute of Ageing and Chronic Disease, University of Liverpool, Liverpool, UK

<u>O2-P317:</u> Unveiling the Role of Pulsed Electromagnetic Field on human tendon-derived cells response in an IL-1B inflammation model

Adriana Vinhas, **Ana I. Gonçalves**, Márcia T. Rodrigues, Rui L. Reis, Manuela E. Gomes

3B's Research Group—Biomaterials, Biodegradables and Biomimetics, University of Minho, Headquarters of the European Institute of Excellence on Tissue Engineering and Regenerative Medicine, AvePark, Barco, Guimarães, Portugal / ICVS/3B's – PT Government Associate Laboratory, Braga/Guimarães, Portugal

02-P318: Unraveling the crosstalk between pre-osteoblasts and tendon cells in tendon-to-bone regeneration

Isabel Calejo, Raquel Costa-Almeida, Ana I. Gonçalves, Dominika Berdecka, Rui L. Reis, **Manuela E. Estima**

3B's Research Group - Biomaterials, Biodegradables and Biomimetics, University of Minho, Headquarters of the European Institute of Excellence on Tissue Engineering and Regenerative Medicine, AvePark-Parque de Ciência e Tecnologia, Barco, Guimarãe, Portugal / ICVS/3B's-PT Government Associate Laboratory, Braga/ Guimarães, Portugal

02-P319: Multi-domain Collagen-based Scaffold as Multi Cargo Delivery Vehicle for Tendon-to-Bone Interface Tissue Engineering

Eugenia Pugliese, Andrea De Pieri, Yves Bayon, Dimitrios I. Zeugolis REMODEL / CURAM, Bioscience Building, National University of Ireland, Galway, Ireland

<u>02-P320:</u> The new combined therapy of PRP and b-FGF using gelatin hydrogel sheet for rotator cuff healing in rat models

Takeshi Kataoka, Yutaka Mifune, Atsuyuki Inui, Hanako Nishimoto, Yauhiro Ueda, Takashi Kurosawa, Kohei Yamaura, Ryusuke Tanaka, Yasuhiko Tabata, Ryosuke Kuroda

Department of Orthopaedic Surgery, Kobe University Graduate School of Medicine, Hyogo, Japan

<u>02-P321</u>: Development and Characterization of a Synthetic Biodegradable Scaffold for Rotator Cuff Augmentation

Sergi Rey Vinolas, Miguel Angel Mateos-Timoneda, Elisabeth Engel Institute for Bioengineering of Catalonia (IBEC), The Barcelona Institute of Science and Technology, Baldiri Reixac Barcelona Spain

<u>02-P322:</u> A Multi-factorial Approach Towards Tenogenic Phenotype Maintenance

Dimitrios V. Tsiapalis, Andrea De Pieri, Ignacio Sallent, Dimitrios I. Zeugolis

Regenerative, Modular & Developmental Engineering Laboratory (REMODEL) National University of Ireland Galway (NUI Galway), Galway, Ireland / Science Foundation Ireland (SFI) Centre for Research in Medical Devices (CÚRAM) National University of Ireland Galway (NUI Galway), Galway, Ireland / Proxy Biomedical Galway, Ireland

02-P323: The effect and mechanism of curcumin on tendon stem/

progenitor cells in the pathological microenvironment of tendinopathy Zi Yin, Yangwu Chen, Yubin Xie, Jiajie Hu, Weiliang Shen, Xiao Chen zhejiang university, China

<u>02-P324:</u> Biophysical Cues for Modulation of Tenogenic Phenotype Diana Gaspar, Dimitrios Zeugolis

Regenerative, Modular & Developmental Engineering Laboratory (REMODEL), National University of Ireland Galway / Science Foundation Ireland (SFI) Centre for Research in Medical Devices (CÚRAM), National University of Ireland Galway, Ireland

<u>02-P325:</u> Tendon Tissue Interfaces – SPARC at the Crossroads of Mechanotransduction and AKT/S6K Signaling

Andreas Traweger, Tao Wang, Andrea Wagner, Herbert Tempfer, Christine Thien, Renate Gehwolf, Ming-Hao Zheng, Andreas Traweger Institute of Tendon and Bone Regeneration, Paracelsus Medical University, Salzburg, Austria

<u>02-P326</u>: Regeneration of decellularised porcine tendon using human mesenchymal stem cells and uniaxial tensile strain

Normalina Sandora, Daniel Thomas, John Fisher, Eileen Ingham iMBE, University of Leeds / Faculty of Medicine, University of Riau, Indonesia

P16. Tissue engineering

<u>02-P327:</u> 3D vascular network development in tissue engineered bone constructs

Johanna Melke, Esther Cramer, Keita Ito, Sandra Hofmann Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, the Netherlands / Institute for Complex Molecular Systems, Eindhoven University of Technology, Eindhoven, the Netherlands

<u>02-P328:</u> Therapeutic concept of the future – tissue engineered transplantable lymphatic tissue

Anja Miriam Boos, Jan W Robering, Majida Majida Al-Abboodi, Rafael Schmid, Aldo R Boccaccini, **Annika Weigand**, Raymund E Horch Department of Plastic and Hand Surgery, University Hospital of Erlangen, Germany

<u>02-P329</u>: Functionalised scaffolds for promoting angiogenesis and bone regeneration: Two potent alternatives to the use of VEGF

Serkan Dikici, Naside Mangir, Janos M. Kanczler, Richard OC Oreffo, Sheila MacNeil Department of Materials Science and Engineering, Kroto Research Institute, University

of Sheffield, Sheffield, UK

<u>02-P330:</u> Tissue Engineering Scaffold Formulations based on Gelatin, Crosslinkable Hyaluronic Acid Derivatives and Chain Length Controlled Polyarginine with Inherent Angiogenic and Antimicrobial Properties

Helena Knopf-Marques, Julien Barthès, Sarah Lachaal, Angela Mutschler, Julie Bystroňová, Nihal Engin Vrana, Philippe Lavalle INSERM UMR 1121, Biomaterials and Bioengineering, Strasbourg, France / Faculté de Chirurgie Dentaire, Université de Strasbourg, Strasbourg, France

<u>02-P331:</u> 3D *in vitro* Endothelial Cell and Pericyte Co-Culture Model for Visualization and Quantification of Angiogenesis

Eujin Lee, Haruko Takahashi, Joris Pauty, Maki Kabara, Jun-ichi Kawabe, Yukiko T. Matsunaga

Center for International Research of Integrative Biomedical Systems (CIBIS), Institute of Industrial Science, The University of Tokyo, Japan

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02-P332: hVE-cadherin fusion protein enhancing vascularization of hyaluronic hydrogel

Jun Yang, Chao Gao, Jinghui Xie, Ke Xu, Xiaoning Li The Key Laboratory of Bioactive Materials Ministry of Education, Nankai University, Tianjin, China

02-P333: Vascularized Tissue Blocks Using a Suspension 3D Printed Spheroid Blood Vessel

Vasileios Trikalitis, Fabian Stein, Julia Perea Paizal, Nasim Salehi Nik, Jeroen Rouwkema

Department of Biomechanical Engineering, Faculty of Engineering Technology, University of Twente, Enschede, the Netherlands

02-P334: Perlecan promotes enhanced vascularisation on implanted biomaterials

Fengying Tang, Megan Lord, John Whitelock, Jelena Rnjak-Kovacina Graduate school of biomedical engineering, University of New South Wales, Sydney, Australia

02-P335: High-Throughput Assembling of Pre-Vascularized Spheroids of Stromal/Vascular Cells under Xeno-Free Conditions

Talia F Figueiredo, Ewa Bauman, **Cristina Carvalho Barrias** Biomaterials for Multistage Drug and Cell Delivery, INEB , i3S, Universidade do Porto, Portugal

<u>02-P336:</u> Localization of Engineered Vasculature within 3D Tissue Constructs

Shulamit Levenberg, shira Landau, Shaowei Guo Department of Biomedical Engineering, Technion, Haifa, Israel

02-P337: Preclinical Evaluation of a Tissue-engineered Vascularized Bone Implant – a Minipig Study

Corina Vater, Henriette Bretschneider, Jaroslaw Pyrc, Thomas Aper, Martin Scharffenberg, Roland Jung, Mathias Wilhelmi, Maik Stiehler Center for Translational Bone, Joint and Soft Tissue Research, University Hospital Carl Gustav Carus Dresden at TU Dresden, Germany / University Center of Orthopaedics and Traumatology, University Hospital Carl Gustav Carus at TU Dresden, Germany

<u>02-P338:</u> Effect of Sleep-Promotion in a Mixture of Rice bran and Neungee Mushroom (*Sarcodon aspratus*)

Yu-Ri Seo, Ki-Taek Lim Department of Biosystems Engineering, Kangwon National University, Chuncheon, Korea

<u>02-P339</u>: Study of different poly(ε -caprolactone) prototypes for anterior cruciate ligament reconstruction in rat model

Amelie Leroux, Emeline Maurice, Véronique Viateau, Véronique Migonney

CSPBAT/Institut Galilee, University of Paris 13, Villetaneuse, France

02-P340: CONTROLLED RELEASE SYSTEM OF BIOLOGICAL FACTORS FOR THE PROGENITOR CELLS-MEDIATED ENDOGENOUS REPAIR OF INTERVERTEBRAL DISC

Leslie Frapin, Johann Clouet, Nina Henry, Claire Chedeville, Jérôme Guicheux, Catherine Le Visage

Inserm, UMR 1229, RMeS, Regenerative Medicine and Skeleton, Univ Nantes, ONIRIS, Nantes, France / Univ Nantes, UFR Odontologie, Nantes, France

<u>02-P341:</u> Combined Effect of NELL-1 and Ultra-low Dose of BMP-2 on Mesenchymal Stem Cell Osteogenic Differentiation and Angiogenesis

Ling Liu, Raymond Wing Moon Lam, Ming Wang, Mathanapriya Naidu, Xiafei Ren, James Cho Hong Goh, Kang Ting, Chia Soo, Hee-Kit Wong Department of Orthopaedic Surgery, Yong Loo Lin School of Medicine, National University of Singapore, Singapore

02-P342: Platelet Derivatives and Platelet Derived Biomaterials

Ennio Tasciotti, Fernando J. Cabrera, Joseph Fernandez-Moure, Jeff L. VanEps, Xin Wang, Matthew Murphy, Bradley k. Weiner Center for Biomimetic Medicine, Houston Methodist Research Institute / Department of Orthopedics & Sports Medicine, Houston Methodist Hospital, USA

<u>02-P343:</u> Beneficial effects of platelet-rich plasma for stem cell differentiation and fibroblast activation

Sorina Dinescu, Simona Ignat, Dana Jianu, Marieta Costache Department of Biochemistry and Molecular Biology, University of Bucharest, Bucharest, Romania

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02-P344: Effective immobilization of Lactoferrin on electrospun nanofibers for bone tissue engineering

Jinki Lee, Jinkyu Lee, Heungsoo Shin

Department of Bioengineering, Hanyang University, Seoul, Korea / BK21 plus Future Biopharmaceutical Human Resources Training and Research Team, Seoul, Korea

02-P345: Generation of a Collagen Type I Based Three-Layered Human Skin Substitute

Agnes S. Klar, Jakub Zimoch, Thomas Biedermann, Claudia Meuli-Simmen, Martin Meuli, Ernst Reichmann Tissue Biology Research Unit, University Children's Hospital Zurich, University of Zurich, Switzerland

02-P346: Human tissue-engineered skeletal muscle: a novel 3D in vitro model for intramuscular injection

Dacha Gholobova, Mélanie Gerard, Lieselot Decroix, Linda Desender, Nico Callewaert, Pieter Annaert, Lieven Thorrez Tissue Engineering Lab, Department of Development and Regeneration, KU Leuven

- KULAK, E. Sabbelaan Kortrijk, Belgium

02-P347: Development of small-diameter vascular grafts using a combination of electrospun micro and nano fibre scaffolds

Rajesh K. Kampa, Sheila MacNeil

Department of Materials Science and Engineering, Kroto Research institute, University of Sheffield, Sheffield, UK

02-P348: Development of a natural polymer based novel tissueengineered breast implant

Prasad Sawadkar, Norbert Kang, Elena Garcia-Gareta Regenerative Biomaterials group, The RAFT Institute, Mount Vernon Hospital, UK

02-P349: Optimization of culture medium for human fetal cartilage progenitor cells (hFCPCs) for fabrication of a scaffold-free cartilage tissue

Bo Ram Song, Hwal Ran Kim, Ji Young Lee, So Ra Park, Byung Hyune Choi, Byoung-Hyun Min Department of Physiology, Inha University College of Medicine, Incheon, Korea

02-P350: Design and Synthesis of Cell Instructive Bioinks for 3D **Bioprinting of Skin and Cartilage**

Paul Gatenholm, Linnea Strid Orrhult, Erdem Karabulut 3D Bioprinting Center, Department of Chemistry and Chemical Engineering, Chalmers University of Technology, Goteborg, Sweden / Wallenberg Wood Science Center, Chalmers University of Technology, Göteborg, Sweden

02-P351: Segmental Additive Tissue Engineering

Giuseppe Maria de Peppo, Martina Sladkova The New York Stem Cell Foundation Research Institute, USA

02-P352: Self-healing and tissue adhesive PAAM-gelatin based semi-

IPN hydrogel for tissue engineering applications Seunghun S Lee, Hwan D Kim, Inseon Kim, Nathaniel S Hwang Seoul National University, Korea

02-P353: High-Precision 3D Inkjet Technology for Live Cell Bioprinting

Waka Lin, Takahiko Matsumoto, Hidekazu Yaginuma, Manabu Seo, Daisuke Takagi

Biomedical Research Department, Healthcare R&D Center, Ricoh Institute of Future Technology, RICOH Company, Ltd., Kanagawa, Japan

02-P354: Fat Grafting – a 3D Bioprinting Approach

Linnea Strid Orrhult, Karin Säljö, Peter Apelgren, Lars Kölby, Paul Gatenholm

Chemistry and chemical engineering, Chalmers University of Technology, Gothenburg, Sweden

<u>02-P355</u>: Elastin-like vessel substitutes for in situ tissue engineering

Alicia Fernandez Colino, Frederic Wolf, Hans Keijdener, Stefan Jockenhoevel, José Carlos Rodríguez-Cabello, Petra Mela Dept. of Biohybrid and Medical Textiles AME, Helmholtz Institute of Applied Medical Engineering, CBMS, Center for Biohybrid Medical Systems. RWTH Aachen University, Aachen, Germany

02-P356: 3D cell-laden collagen villi model for mimicking intestinal villus epithelium and capillary

WonJin Kim, Miji Yeo, JaeYoon Lee, Gi Hoon Yang, Hae Ri Kim, JuYoen Kim, GeunHyung Kim

Department of Biomechatronics, University of Sungkyunkwan, Suwon, Korea

02-P357: Computational Modeling of Basic Cellular Processes and Role of Metabolism During Spheroid-Based Tissue Biofabrication

Nicanor I. Moldovan, David Bustamante, Guilherme Oliveira, Maciej Swat

Department of Biomedical Engineering, Indiana University-Purdue University Indianapolis (IUPUI), IN, USA

<u>02-P358</u>: Transplantation of tailored cell sheets using micro stereolithography and electrochemical cell transfer

Sena Ozawa, Yuka Kobayashi, Christopher E.J Cordonier, Shingo Kozaki, Hideo Honma, Shoji Maruo, Junji Fukuda Department of Chemistry, Chemical Engineering and Life Science, Yokohama national University, Yokohama, Japan

02-P359: Direct Writing Electrospinning of Scaffolds with

Multidimensional Fiber Architecture for Hierarchical Tissue Engineering Afonso B Malheiro, Honglin Chen, Clemens van Blitterswijk, Paul Wieringa, Carlos Mota, Lorenzo Moroni

MERLN Institute, Maastricht University, Maastricht, the Netherlands

02-P360: Bioprinting of Microalgae/Mammalian Cell Hybrid Constructs - a Concept for Photosynthetic Oxygen Supply of Cells in Regenerative Therapies

Anja Lode, Felix Krujatz, Christian Senwitz, Sarah Duin, Barbara Ludwig, Ashwini Rahul Akkineni, Michael Gelinsky Centre for Translational Bone, Joint and Soft Tissue Research, Technische Universitaet Dresden, Germany

02-P361: Engineering GelMA-based bio-inks with tunable mechanical stiffness

Pei Zhuang, Weilong Ng, Jia An, Lay Poh Tan, Chee Kai Chua Singapore Centre for 3D Printing, School of Mechanical and Aerospace Engineering, Nanyang Technological University, Singapore

02-P362: 3D Bioprinting strategy for Chitosan-based bioinks

Ana Mora Boza, Małgorzata K. Włodarczyk Biegun, Aránzazu del Campo, Blanca Vázquez Lasa, Julio San Román Institute of Polymer Science and Technology, ICTP-CSIC, Madrid, Spain / CIBER-BBN. Health Instituté Carlos III, Madrid, Spain

<u>02-P363</u>: Controllable Fabrication of Porous PLGA/PCL GTR Membrane Using Supercritical Carbon Dioxide Foaming

Zhenhao XI, Chaobo Song, Hongbo Zhang, Ling Zhao, Shuang Li, Eryi

Shanghai Key Laboratory of Multiphase Materials Chemical Engineering, East China University of Science and Technology, China

02-P364: 3D bioprinting microenvironments for studying cancer metastasis

Monica Moya, William F Hynes, Javier Alvarado Lawerence Livermore National Laboratory, USA

02-P365: Fabrication of Microfiber Cylindrical Scaffold Using Cotton **Candy Machine for Vascular Tissue Engineering**

Azizah Intan Pangesty, Mitsugu Todo Department of Molecular and Material Science, Kyushu University, Fukuoka, Japan

02-P366: A fabrication approach to form perfusable 3D microvascularized hydrogel

Jung Bok Lee, Hye Ryeon Jang, Jeong-Kee Yoon, Jin You, Young Min Shin, Hak-Joon Sung Severance Biomedical Science Institute, College of Medicine, Yonsei University, Seoul, Korea

02-P367: 3-Dimensional cell patterning technique using acoustic wave for tissue engineering

Byungjun Kang, Jisoo Shin, Hyun-Ji Park, Chanryeol Rhyou, Seung-Woo Cho, Hyungsuk Lee School of Mechanical Engineering, Yonsei University, Seoul, Korea

<u>02-P368</u>: Development of an extrusion-based 3D bioprinting approach for the applications of bone tissue engineering

Miina Ojansivu, Ahmad Rashad, Astrid Ahlinder, Jonathan Massera, Kristin Syverud, Anna Finne-Wistrand, Susanna Miettinen, Kamal Mustafa

Adult Stem Cell Research Group, Faculty of Medicine and Life Sciences and BioMediTech Institute, University of Tampere, Tampere, Finland / Science Center, Tampere University Hospital, Tampere, Finland / Tissue Engineering Group, Department of Clinical Dentistry, Faculty of Medicine, University of Bergen, Bergen, Norway

<u>02-P369:</u> An *in vitro* tumor angiogenesis model with bioprinted vascular channels mimicking *in vivo* conditions

Jan Schoeneberg, Benjamin Theek, Federica De Lorenzi, Andreas Blaeser, Fabian Kiesling, Horst Fischer

Dental Materials and Biomaterials Research, RWTH Aachen University Hospital, Aachen, Germany

<u>02-P370:</u> Biofabrication of 3D Cardiac Tissues with Bio-Printing and Bio-Assembly technologies

Yuta Hamada, Shintaroh Iwanaga, Yoshinari Tsukamoto, Kazuyuki Sugimoto, Shinji Sakai, Makoto Nakamura

Department of Life Sciences and Bioengineering, University of Toyama, Toyama, Japan **02-P371:** Modular Type II Photoinitiator for Functional 3D Printing

Xin Yang, Nathan J Castro, Mina Mohseni, Onur Bas, Dietmar W Hutmacher

Institute of Health and Biomedical Innovation, Queensland University of Technology, Brisbane, Queensland, Australia

<u>02-P372:</u> Biomimetic 3D cell-laden scaffold inducing alignment fabricated using cell-printing process with electric field for muscle regeneration

Miji Yeo, WonJin Kim, JiUn Lee, Minseong Kim, Gi Hoon Yang, GeunHyung Kim

Department of Biomechatronic Engineering, Sungkyunkwan University, Suwon, Korea

<u>02-P373:</u> Regulation, Protocol, and Clinical applications of 3d bio printers in Dermatology, Plastic Surgery, Orthopedics, Urology, and Ophthalmology

Heon Ju Lee, Hyun Woo Jo, Min Chae Lee, Bo Mi Nam, Joshua Kim, Ji Eun Kim, Seung Jin Kim

Bio Division, ROKIT inc., Seoul, Korea

<u>02-P374:</u> *In* vivo 3D bioassembly of cellularized 3D printed scaffolds supports vascularization within entire tissue engineering construct

Vera Guduric, Robin Siadous, Maxime Seimbille, Reine Bareille, Sylvie Rey, Hugo De Oliveira, Ognjan Luzanin, Sylvain Catros BioTis, Inserm U1026, University of Bordeaux, France / CHU de Bordeaux, France

<u>02-P375:</u> Miniaturized 3D bioprinting on a chip for 3D cell cultures

Moo-Yeal Lee, Kyeong-Nam Yu, Alexander D. Roth, Pranav Joshi, Parnian Bigdelou, Soo-Yeon Kang, Stephen Hong, Noor Janto, Nick Lesh, Rushabh Patel

Cleveland State University, USA / Bioprinting Laboratories, Inc., USA

02-P376: Development of gellan gum gel devices

Ryu-ichiro Tanaka, Katsuhisa Sakaguchi, Tatsuya Shimizu, Shinjiro Umezu

Majors in Modern Mechanical Engineering, University of Waseda, Tokyo, Japan

<u>O2-P377:</u> The Development of Bioinks Incorporating Co-Cultures of MSCs and HUVECs for 3D Bioprinting of Vascularised Tissues

Jessica Nulty. Fiona E Freeman, Daniel J Kelly Trinity Centre for Bioengineering, Trinity Biomedical Sciences Institute, Trinity College Dublin, Dublin, Ireland / Department of Mechanical and Manufacturing Engineering, School of Engineering, Trinity College Dublin, Dublin, Ireland

02-P378: 3D Bioprinting Endometrium To Facilitate Uterus Functional Regeneration

Jiang Deming, Haoyu Wu, Yu Li, Binbin Wu, Xiaohui Zou, Hongwei Ouyang

Department of Stem Cell and Regenerative Medicine, Zhejiang University, Zhejiang, China / Obstetrics and Gynecology, First Affiliated Hospital of Medicine School, Zhejiang University, China

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<u>02-P379:</u> Reinforcing IPN Hydrogels with 3D-Printed Polymeric Frames to Engineer Cartilage Mimetic Scaffolds

Rossana Schipani, Swetha Rathan, Romain Florentin, Caitríona Lally, Daniel John Kelly

Trinity Centre for Bioengineering, Trinity Biomedical Science Institute, Trinity College Dublin, Dublin, Ireland / Department of Mechanical and Manufacturing Engineering, School of Engineering, Trinity College Dublin, Dublin, Ireland

<u>02-P380</u>: Biomimetic scaffolds via additive manufacturing as functional eardrum replacements

Serena Danti, Carlos Mota, Luisa Trombi, Delfo D'Alessandro, Alessandra Fusco, Giovanna Donnarumma, Lorenzo Moroni, Stefano Berrettini

Dept. of Civil and Industrial Engineering, University of Pisa, Pisa, Italy / Consorzio Interuniversitario Nazionale per la Scienza e Tecnologia dei Materiali (INSTM), Florence, Italy

02-P381: Automated Printability Analysis of Bioinks

Patrick Thayer, Hector Martinez CELLINK LLC, USA

<u>02-P382:</u> Enhancement in Cellular Activities of MG63 Cells Encapsulated in 3D-printed Collagen-based Scaffold by Mimicking Physiological Conditions Using Collagenase (MMP-1)

YoungWon Koo, GeunHyung Kim, Minseong Kim, JiUn Lee, Wonjin Kim

Department of Biomechatronic Engineering, College of Biotechnology and Bioengineering, Sungkyunkwan University (SKKU), Suwon, Korea

<u>02-P383</u>: Optimized porosity of 3D printed gelatin methacrylamide scaffolds promotes angiogenic behavior of human mesenchymal stromal cells

Taimoor H Qazi, Liesbeth Tytgat, Georg N Duda, Sven Geissler, Peter Dubruel, Sandra Van Vlierberghe

Julius Wolff Institute, Charité Universitätsmedizin Berlin, Berlin, Germany

02-P384: Green Foaming Strategy for Biocompatible PGA and TPP/PGA Scaffolds

Jiapeng Zhang, Zhenhao Xi, Lian Cen, Ling Zhao, Ying Yang Shanghai Key Laboratory of Multiphase Materials Chemical Engineering, East China University of Science and Technology, Shanghai, China / Institution of Science and Technology in Medicine, University of Keele, UK

02-P385: Extracellular Matrix Derived Hydrogel from Decellularised Uterine Tissue: A Synthesis and Analysis

Kritchai Vutipongsatorn, Jeong Hyun Kim, Narintadech Charoensombut, Kawabata Kinyoshi, Takeda Shu, Takashi Ushida, Katsuko Furukawa

Department of Medicine, Imperial College London, London, UK / Department of Bioengineering, University of Tokyo, Tokyo, Japan

<u>02-P386:</u> Ligament structures produced by using bio three-dimensional printer

Daiki Murata, Anna Nakamura, Kenichi Arai, Koichi Nakayama Department of Medicine, Saga University, Saga, Japan

<u>02-P387</u>: Biomimetic construction of cervical structure with protein sustained release functionality by three dimensional (3D) printing

Yuan Pang, Chenjia Zhao, Zitong Wang, Wei Sun Biomanufacturing Center Dept. of Mechanical Engineering, Tsinghua University / Biomanufacturing and Rapid Forming Technology Key Laboratory of Beijing, Beijing, China

02-P388: Surface Treatment Of Gelatin Scaffolds Using Camphene Designed with Core/shell Tubular

Gi Hoon Yang, Haeri Kim, JeaYoon Lee, Minseong Kim, GeunHyung Kim

Department of Bio-Mechatronics Engineering, Sungkyunkwan University, Suwon, Korea

<u>02-P389:</u> Contrast Enhanced Computed Tomography (CECT) Method for Non-Invasive Bioimaging of GAG Content in Cartilage Tissue Engineered Constructs

Joao Pedro Garcia, Laura B Creemers, Mark W Grinstaff, Juha Töyräs, Harrie H Weinans, Behdad Pouran Department of Orthopedics, UMC Utrecht, Utrecht, the Netherlands

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<u>02-P390:</u> Informative three-dimensional survey of cell/tissue architectures in thick paraffin sections by simple low-vacuum scanning electron microscopy

Akira Sawaguchi, Takeshi Kamimura, Atsushi Yamashita, Nobuyasu Takahashi, Kaori Ichikawa, Fumiyo Aoyama, Yujiro Asada Division of Ultrastructural Cell Biology, Department of Anatomy, Faculty of Medicine, University of Miyazaki, Japan

02-P391: Targeted Imaging for Regenerative Medicine

GwangLi Kate Park, Janet Kwon, Nathaniel S Hwang Gordon Center for Medical Imaging/ Department of Radiology, Massachusetts General Hospital and Harvard Medical Center, Charlestown, MA / Interdisciplinary Program in Bioengineering, School of Chemical and Biological Engineering, Seoul National University, Seoul, Korea

<u>02-P392:</u> *In Vivo* Monitoring Of Vascularisation Of Decellularised Scaffolds In Tissue Engineering Using Photoacoustic Imaging

Jasmine Ho, Olumide Ogunlade, Tammy Kalber, Robert Hynds, Edward Zhang, Sam Janes, Martin Birchall, Colin Butler, Paul Beard University College London, UK

<u>02-P393:</u> Raman Spectral Analysis and Imaging of Biological Cells and Tissues

Erhan Biskin, Farzaneh Moghtader, Erdem Orhan Haberal, Ahmad Salmanogli

Department of Chemical Engineering, University of Hacettepe, Ankara, Turkey

<u>02-P394</u>: Folding Artificial Mucosa with Cell-Laden Hydrogels

Hon Fai Chan, Ruike Zhao, German Parada, Kam W Leong, Linda G Griffith, Xuanhe Zhao

Institute of Tissue Engineering and Regenerative Medicine, Chinese University of Hong Kong, Hong Kong / Department of Mechanical Engineering, Massachusetts Institute of Technology, Cambridge, MA / Department of Biological Engineering, Massachusetts Institute of Technology, Cambridge, MA / School of Biomedical Science, The Chinese University of Hong Kong, Hong Kong

<u>02-P395:</u> Extracellular-matrix tethering and ligand type modulate how deeply cells mechanosense

Camelia Gratiela Tusan, Shoufeng Yang, Eileen Gentleman, Bram Sengers, Nicholas D Evans

Centre for Human Development, Stem Cells and Regeneration, University of Southampton, UK

<u>02-P396</u>: Optimizing the design of EngNT conduits to promote neurite growth in a peripheral nerve injury *in silico* model

Simao Laranjeira, James B Phillips, Rebecca J Shipley UCL Mechanical Engineering, London, UK / UCL Centre for Nerve Engineering, UK

02-P397: Mechanical Stimulation Device for Spherical Micro-Muscular Tissues

Shogo Miyata, Takahiro Sumi

Department of Mechanical Engineering, Faculty of Science and Technology, Keio University, Kanagawa, Japan

02-P398: Mechanical Assessment Of Neocartilage Growth In Hydrogel

Romane Blanchard, Cathal D. O'Connell, Serena Duchi, Carmine Onofrillo, Gordon Wallace, Peter F.M. Choong, Claudia Di Bella St Vincent's Department of Surgery, The University of Melbourne, Australia

<u>02-P399:</u> Effects of Fluid Shear Stress and Melatonin on 3T3-L1 Preadipocytes

Jeongkun Lee, Yeong Hun Lee, Chae Lim Park, Hee Won Jin, Seohyun Lee, Chi Hyun Kim

Biomedical Engineering, Yonsei University, Korea

<u>02-P400:</u> A new Miniaturized Optically Accessible Bioreactor to investigate the microbiota-gut-brain axis: magnetic characterization of the chambers

Luca Izzo, Marta Tunesi, Matteo Laganà, Carmen Giordano, Manuela Teresa Raimondi

Department of Chemistry, Materials and Chemical Engineering Giulio Natta, Politecnico di Milano, Milan, Italy

<u>02-P401:</u> External intermittent positive pressurized perfusion improves the organ viability on ex-vivo organ perfusion

Kazunori Sano, Hidekazu Sekine, Jun Homma, Eiji Kobayashi, Tatsuya Shimizu

Institute of Advanced Biomedical Engineering and Science, Tokyo Women's Medical University (TWIns), Tokyo, Japan / Tokaihit co., Itd., Shizuoka, Japan

02-P402: Coupling X-ray contrast-enhanced – CT to perfusion bioreactors for on-line tissue engineering construct visualization

Sebastien de Bournonville, Toon Lambrechts, **Ioannis Papantoniou**, Johan Vanhulst, Greet Kerckhofs, Liesbet Geris Prometheus, Division of Skeletal Tissue Engineering, KU Leuven, Belgium / Biomechanics Research Unit, University of Liège, Belgium / Biomechanics Section, KU Leuven, Belgium

<u>02-P403:</u> Developing of a transparent single-use perfusion bioreactor to allow real-time imaging of the production of tissue engineered small diameter blood vessels

Rajesh K. Kampa, Sheila MacNeil Department of Materials Science and Engineering, Kroto Research institute, University of Sheffield, Sheffield, UK

<u>02-P404:</u> Predictive Mathematical Model of a Microcarrier Cell Culture for Bone Tissue Engineering

Iva D Burova, Ivan B Wall, Rebecca J Shipley Department of Mechanical Engineering, University College London, London, UK

<u>02-P405</u>: The study of manufacturing technique of hollow fiber bioreactor for tissue engineering

Seongmi Song, Soyeon Jin, **Changmo Hwang** Biomedical Engineering Research Center, ASAN Medical Center, Seoul, Korea

<u>02-P406:</u> Nutrient Flow and Cell Growth inside a Simplified Model of Hollow Fibre Membrane Bioreactor fitted with Deformable Scaffold Prakash Kumar, Raja Sekhar G P

Department of Mathematics, Indian Institute of Technology Kharagpur, India

02-P407: Analysis of Cell Proliferation with Nutrient Transport inside a Hollow Fibre Membrane Bioreactor Containing Deformable Scaffold Raja Sekhar G P, Prakash Kumar

Department of Mathematics, Indian Institute of Technology Kharagpur, India

<u>02-P409:</u> Combined automated system for tissue engineered vascular graft production and follow up

Kazutomo Baba, Yoshiyuki Sankai Graduate School of Systems and Information Engineering, University of Tsukuba, Japan

<u>02-P410:</u> The formation of chondrocyte-like aggregates on zirconia porous three-dimensional microwell substrata using equine, bone marrow-derived mesenchymal stem cells

Naoki Sasaki, Tomohiro Inui, Shingo Haneda, Motoki Sasaki, Hidefumi Furuoka, Megumi Ito, Masashi Yanagawa, Yasuhiko Tabata Department of Clinical Veterinary Science, University of Yamaguchi, Yamaguchi, Japan

02-P411: Taking Medium and Cell Samples out from the Inside of an Isolator without Breaking the Sterile Environment

Hodaka Makino, Tetsuya Ogawa, Yuki Kagawa, Hirotsugu Kubo, Kazuhiro Fukumori, Manabu Mizutani, Masahiro Kino-oka, Naoki Kobayashi

Ogino Memorial Laboratory, Nihon Kohden Corporation, Tokyo, Japan

<u>02-P412:</u> Oxygen levels strongly influence metabolic parameters of the human amniotic mesenchymal stromal cells *in vitro*

Susanne Wolbank, Asmita Banerjee, Adelheid Weidinger, Andrea Lindenmair, Simone Hennerbichler, Ralf Steinborn, Andrey V Kozlov, Heinz Redl

Ludwig Boltzmann Institute for clinical and experimental Traumatology /AUVA research center, Vienna, Austria / Austrian Cluster for Tissue Regeneration, Vienna, Austria

<u>02-P413:</u> Wettability assessment based on liquid behavior by air-jet application and polysaccharide distribution on tissue surface

Nobuyuki Tanaka, Junko Takahara, Akane Awazu, Yoshihide Haruzono, Hiromitsu Nasu, Yo Tanaka RIKEN, Japan

<u>02-P414:</u> Flatbed cell monitoring system for daily cell quality control

Minami Masumoto, Tatsuya Osaki, Yuka Shimazu, Dina Mysnikova, Shintaro Takahashi, Shinichi Takimoto, Junji Fukuda Faculty of Engineering, Yokohama National University, Yokohama, Japan

<u>02-P415:</u> Exploration of humoral factor related to cartilage regeneration produced by polydactyly-derived chondrocyte sheets and adult chondrocyte sheets

Miki Maehara, Masato Sato, Eriko Toyoda, Takumi Takahashi, Eri Okada, Takehiko Takagi, Tadashi Akamatsu, Hidenori Akutsu, Masahiko Watanabe

Department of Orthopaedic Surgery, Surgical Science, Tokai University School of Medicine, Kanagawa, Japan

<u>02-P416</u>: Cryopreservation of Bioengineered Cell Sheet by Vitrification

Asuka Hayashi, Miki Maehara, Ayuko Uchikura, Hitomi Matsunari, Kazuaki Matsumura, Suong-Hyu Hyon, Masato Sato, Hiroshi Nagashima Laboratory of Developmental Engineering, School of Agriculture, Meiji University, Kawasaki, Japan

02-P417: Regeneration of Tracheal Epithelium Using Human iPS

Cell-derived Multi-ciliated Airway Cells with a Bioengineered Trachea Hideaki Okuyama, Hiroe Ohnishi, Ryosuke Nakamura, Masaru Yamashita, Yo Kishimoto, Ichiro Tateya, Atsushi Suehiro, Shimpei Gotoh, Toshiaki Takezawa, Tatsuo Nakamura, Koichi Omori Department of Otolaryngology-Head and Neck Surgery, Graduate School of Medicine, Kyoto University, Kyoto, Japan

<u>02-P418</u>: Development of contractile force measurement system for cardiac cell sheet-tissues and optimization of the tissue fabrication process

Hirotsugu Kubo, Yuki Kagawa, Yuto Hinata, Hiromi Baba, Ryo Narita, Takahiro Shioyama, Daisuke Sasaki, Katsuhisa Matsuura, Tatsuya Shimizu, Naoki Kobayashi

Ogino Memorial Laboratory, NihonKohden Corporation, Tokyo, Japan

<u>02-P419:</u> Creation of cellular tissue with blood vessel-like structure utilizing titanium wire and cell sheets

Kei Akimoto, Katsuhisa Sakaguchi, Tatsuya Shimizu, Shinjiro Umezu Department of Modern Mechanical Engineering, School of Creative Science and Engineering, Waseda University, Tokyo, Japan

<u>02-P420:</u> Structure and function analysis of cell sheet and cell suspension towards stem cell therapy

Mitsuyoshi Nakao, Kenichi Nagase, Teruo Okano, Hideko Kanazawa Graduate School of Pharmaceutical Sciences, Keio University, Tokyo, Japan

<u>02-P421:</u> Transplantation of Resident Mesenchymal Progenitor Cell Sheet Onto Infarcted Heart Promotes Cardiogenesis and Suppresses Negative Cardiac Remodeling: Long Term Follow-up

Konstantin Dergilev, Zoya Tsokolaeva, Irene Beloglazova, Ekaterina Zubkova, Maria Boldyreva, Mikhail Menshikov, Yelena Parfyonova Laboratory of angiogenesis, National Medical Research Center of Cardiology, Moscow, Russia

<u>02-P422</u>: Rapid fabrication of engineered human primary hepatocyte/ fibroblast sheets

Yu Huang, Yusuke Sakai, Akihiko Soyama, Masaaki Hidaka, Mitsuhisa Takatsuki, Susumu Eguchi

Department of Surgery, Nagasaki University Graduate School of Biomedical Sciences, Japan

<u>02-P423:</u> Development of a Heating Plate-centrifuge and its Application in Tissue Engineering

Yuki Kagawa, Yuji Haraguchi, Hirotsugu Kubo, Tatsuya Shimizu, Naoki Kobayashi

Ogino Memorial Laboratory, Nihon Kohden Corporation, Tokyo, Japan

<u>02-P424:</u> Effect of supercooling storage process on the transplantable sources

Tania Sultana, Jeong Ik Lee, Park kanghyo, Kwon Jaeyeon, Hun-Young Yoon, Soojung Lee

Regenerative Medicine Laboratory, Department of Biomedical Science and

Technology, Institute of Biomedical Science and Technology, Konkuk University, Seoul, Korea

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02-P425: Using bacterial adhesins to direct human stem cells to the myocardium

Wenjin Xiao, Thomas I. P Green, Xiaowen Liang, Guillaume Perry, Rosalia Cuahtecontzi Delint, Haolu Wang, Robert Barker, Kris le Vay, Duncan J McGillivray, Michael S Roberts, Paul R Race, Adam W Perriman

School of Cellular and Molecular Medicine, University of Bristol, Bristol, UK

<u>02-P426:</u> Autophagy is needed during the Differentiation of Adipose Derived Stem Cells to Functional Smooth Muscle Cells for use in Bladder Engineering

Souzan Salemi, Christopher Millan, Ashkan Mortezavi, Benedikt Kranzbühler, Tullio Sulser, Deana Mohr-Haralampieva, Daniel Eberli Department of Urology, University Hospital Zurich, Zürich, Switzerland

<u>02-P427:</u> The survey on cellular and tissue-engineered therapies in Europe and neighboring Eurasian countries in 2014 and 2015

Max Hans-Peter Gay, Hilary Ireland, Helen Baldomero, Barbara De Angelis, Hossein Baharvand, Mark Lowdell, Jakob Passweg, Ivan Martin

Department of Biomedicine, University Hospital Basel, Basel, Switzerland

02-P428: Sticky Stem Cells: Reengineering the Cell Membrane using Nanobiohybrid Materials

Rosalia Cuahtecontzi Delint, Wenjin Xiao, Terrence McMaster, Adam Willis Perriman, Wael Kafienah

The School of Cellular and Molecular Medicine, University of Bristol, Bristol, UK / The Bristol Centre for Functional Nanomaterials, University of Bristol, Bristol, UK / The School of Physics, University of Bristol, Bristol, UK

<u>02-P429:</u> Efficacy of human adipose stem cell injections in the treatment of anal sphincter injury

Susanna Miettinen, Miia Juntunen, Nathaniel Narra Girish, Heikki Tuominen, Heini Huhtala, Kari Nieminen, Jari Hyttinen, Kirsi Kuismanen Adult Stem Cell Group, BioMediTech, Faculty of Medicine and Life Sciences, University of Tampere, Tampere, Finland

02-P430: BMP9/GDF2 rescues chondrogenesis in articular cartilagederived chondroprogenitors from mature synovial joints

Ilyas Khan, Yadan Zhang, Riccardo Levato, Jos Malda, P. R. van Weeren

Swansea University Medical School, UK

<u>02-P431:</u> Regeneration of Periodontal Tissue by Allogeneic Transplantation of Adipose tissue Derived Multi-lineage Progenitor Cells Venkata Suresh Venkatatiah, Keisuke Handa, Masahide Takedachi, Shinya Murakami, Hanayuki Okura, Akifumi Matsuyama, Masahiro Saito

Department of Restorative Dentistry, Tohoku university, Sendai, Japan

<u>02-P432:</u> Growth factor-immobilized microparticles with leaf-stacked structure as a cell carrier for intervertebral disc reconstruction

Min Ji Kim, Jae-Hoon Lee, Jun-Soo Kim, Jin Ho Lee, Se Heang Oh Department of Nanobiomedical Science, Dankook University, Cheonan, Korea

02-P433: Tissue Engineered Constructs Based On Mesenchymal Stromal Cells And Acellular Dermis Induce The Release Of Repair Factors For Cutaneous Lesions

Luz Stella Correa, Gustavo A Salguero, Bernardo Camacho, Ingrid Z Silva-cote

Unidad de terapia celular, IDCBIS, Bogota, Colombia

<u>02-P434:</u> Efficacy of Gelatin Hydrogel Impregnated with Concentrated Platelet Lysate in Murine Wound Healing

Sharon Claudia Notodihardjo, Naoki Morimoto, Natsuko Kakudo, Toshihito Mitsui, Tien Minh Le, Yasuhiko Tabata, Kenji Kusumoto Department of Plastic and Reconstructive Surgery, Kansai Medical University, Osaka, Japan

<u>02-P435:</u> Biofunctionalization Of Biodegradable Conductive Patch For Myocardial Infarction Treatment

Nazanin Zanjanizadeh Ezazi, Marianna Kemell, Heikki Ruskoaho, Jouni Hirvonen, Hélder A. Santos

Drug Research Program, Division of Pharmaceutical Chemistry and Technology Faculty of Pharmacy University of Helsinki, Finland

02-P436: Combinatorial Non-viral Gene Delivery for Stable Chondrogenesis of Bone Marrow-derived Mesenchymal Stem Cells

Tomas Gonzalez-Fernandez, Pierluca Pitacco, Nicholas Dunne, Helen

McCarthy, Fergal O'Brien, Daniel Kelly Trinity Centre for Bioengineering, Trinity College Dublin, Dublin, Ireland / Department of Mechanical and Manufacturing Engineering, School of Engineering, Trinity College Dublin / Advanced Materials and Bioengineering Research Centre, Trinity College Dublin and Royal College of Surgeons in Ireland / Tissue Engineering Research Group, Dept. of Anatomy, Royal College of Surgeons in Ireland, Ireland

02-P437: Comparison of fibroblasts expression via gene transfer or via poly(sodium styrene sulfonate) coating onto poly(ε -caprolactone) surfaces for ligament reconstruction

Amelie Leroux, Jagadeesh K. Venkatesan, Magali Cucchiarini, Véronique Migonney

CSPBAT/Institut Galilee, University of Paris 13, Villetaneuse, France

<u>02-P438</u>: Pore-forming Bioinks to Enable Spatiotemporally Defined Non-viral Gene Delivery for Osteochondral Tissue Engineering

Tomas Gonzalez-Fernandez, Swetha Rathan, Christopher Hobbs, Pierluca Pitacco, Fiona Freeman, Grainne Cunniffe, Nicholas Dunne,

Heltocarthy, Fergal O'Brien, Daniel Kelly Trinity Centre for Bioengineering (TCBE), Trinity College Dublin, Dublin, Ireland / Advanced Materials and Bioengineering Research (AMBER) Centre, Trinity College Dublin and Royal College of Surgeons in Ireland, Dublin, Ireland / Tissue Engineering Research Group (TERG), Royal College of Surgeons in Ireland, Dublin, Ireland / Department of Mechanical and Manufacturing Engineering, School of Engineering, Trinity College Dublin, Ireland

<u>02-P439</u>: Gene delivery as a tool to promote the deposition of elastin by smooth muscle cells in collagen gel-based scaffolds

Dimitria Bonizol Camasao, Daniele Pezzoli, Giorgio Alfredo Biribin, Dieter Reinhardt, Gabriele Candiani, Diego Mantovani Department of Mining, Metallurgy and Materials Engineering, Universite Laval, Quebec, Canada

02-P440: Regulatory and Ethical Guidelines of Tissue Engineering and **Regenerative Medicine in the Muslim World**

Abdurezak Abdulahi Hashi, Nur Syamimi Mohd. Azharuddin, Muhammad Aa'zamuddin Ahmad Radzi, Azran Azhim, Munirah Sha'ban Department of Biotechnology, Kulliyyah of Science, International Islamic University Ma'aysia, Jalan Sultan Ahmad Shah, Bandar Indera Mahkota, Kuantan, Pahang Darul Makmur, Malaysia

02-P441: Muslim Jurists' Opinions on the Permissibility of Tissue **Engineering Experimentation: Analysis of Selected Examples**

Muhammad Aa'zamuddin Ahmad Radzi, Nur Syamimi Mohd. Azharuddin, Abdurezak Abdulahi Hashi, Azran Azhim, Munirah Sha'ban Department of Biomedical Science, Kulliyyah of Allied Health Sciences, International Islamic University Malaysia, Kuantan, Pahang, Malaysia

02-P442: Tissue Engineering Practices and the Issue of "Playing God": A Theological Exposition

Nur Syamimi Mohd. Azharuddin, Muhammad Aa'zamuddin Ahmad Radzi, Azran Azhim, Munirah Sha'ban, Abdurezak Abdulahi Hashi Department of Biomedical Science, Kulliyyah of Allied Health Sciences, International Islamic University Malaysia, Kuantan, Pahang Darul Makmur, Malaysia

02-P443: Nanodiamonds as a platform for skeletal tissue regeneration

Despoina Paschou, Alice Taylor, Patrizia Ferretti, Richard Jackman Great Ormond Street Institute of Child Health, University College London, London, United Kingdom / London Centre for Nanotechnology and Department of Electronic and Electrical and Engineering, University College London, London, UK

02-P444: When electrospinning takes lesson from bees: Honey-comb like Electrospun Matrices with Pore Size Controlled for Tissue Engineering

Manon Allais, Wassim Ammiali, Anne Hébraud, Vincent Ball, Guy Schlatter, Florent Meyer

Inserm 1121, Universite de Strasbourg, Strasbourg, France

02-P445: Cell Separation Column using Thermoresponsive Polymer **Brush Modified Beads**

Kenichi Nagase, Yuki Nagata, Daimu Inanaga, Aya Mizutani Akimoto, Hideko Kanazawa Faculty of Pharmacy, Keio University, Tokyo, Japan

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02-P446: Extracorporeal magnetic separation of cells from blood

Olivia Lauren Lanier, Camilo Velez, Adam G Monsalve, Samuel Warnock, Peter S McFetridge, Jon P Dobson J. Crayton Pruitt Family Department of Biomedical Engineering, University of Florida, Gainesville, USA

<u>02-P447</u>: Cellulose nanocrystals as nanostructuring tools to modulate

the artificial cell microenvironment in nanocomposite hydrogels Rui M.A. Domingues, Sandra Araújo, Bárbara B. Mendes, Manuel Gómez-Florit, Pedro Babo, Rui L. Řeis, Manuela E. Gomes 3B's Research Group, University of Minho, Guimaraes, Portugal / ICVS/3B's - PT Government Associate Laboratory, Braga/Guimaraes, Portugal

02-P448: Bioactive Mineral Coatings Derived from SiO₂ - CaO - MgO - P₂O₅ - ZnO - CaF₂ System

Cristina Busuioc, Izabela Constantinoiu, Dana Miu, Sorin-Ion Jinga University POLITEHNICA of Bucharest, Romania

<u>02-P449</u>: Fabrication of electrospun piezoelectric scaffolds for bone tissue engineering

Serena Danti, Bahareh Azimi, Luisa Trombi, Delfo D'Alessandro, Massimiliano Labardi, Hussain Istiak, Jasim M. Uddin, Andrea Lazzeri Dept. of Civil and Industrial Engineering, University of Pisa, Pisa, Italy / Consorzio Interuniversitario Nazionale per la Scienza e Tecnologia dei Materiali, Florence, Italy

02-P450: Three-dimensional Co-culture of Salivary Gland Stem Cells with Perivascular Stem Cells: A New Model for Studying Radiationinduced Salivary Hypofunction

Hyun-Soo Shin, Songyi Lee, Seok-Ho Hong, Jae-Yol Lim Department of Otorhinolaryngology, Yonsei University College of Medicine, Korea

02-P451: Development of perfusion cultivation system or renal organoid for regulation self-organization

Sachiko Sekiya, Tetsutaro Kikuchi, Tatsuya Shimizu Institute of advanced biomedical engineering and science, Tokyo medical women's university, Japan

02-P452: Microfluidic Tissue Engineering of a 3D Vascularized Tissueon-a-Chip using Human iPSC-derived Cells to Study Cancer Immunotherapy

Yu-suke Torisawa, Yuta Mishima, Emi Sano, Masazumi Waseda, Hitomi Takakubo, Chihiro Mori, Shoichi Iriguchi, Shin Kaneko Hakubi Center for Advanced Research, Kyoto University, Kyoto, Japan / Department of Micro Engineering, Kyoto University, Kyoto, Japan / AMED-PRIME, Japan Agency for Medical Research and Development, Tokyo Japan

02-P453: A new microfluidic device supporting mouse spermatogenesis with higher visibility

Hiroyuki Yamanaka, Mitsuru Komeya, Hiroko Nakamura, Hiroyuki Sanjo, Takuya Sato, Masahiro Yao, Hiroshi Kimura, Teruo Fujii, Takehiko Ogawa

Laboratory of Biopharmaceutical and Regenerative Sciences, Institute of Molecular Medicine and Life Science, Yokohama City University Association of Medical Science, Yokohama, Kanagawa, Japan. / Department of Urology, Yokohama City University Graduate School of Medicine, Yokohama, Kanagawa, Japan

02-P454: Development of a Microfluidic Organ-on-a-chip to Study Skeletal Muscle Tissue Metabolism

Maria Alejandra Ortega, Alejandro Hernández-Albors, Albert G. Castaño, Xiomara Fernández-Garibay, Ferrán Velasco-Mallorquí, Javier Ramón-Azcón

Biosensors for Bioengineering Group, Institute for Bioengineering of Catalonia (IBEC), The Barcelona Institute of Science and Technology (BIST), Barcelona, Spain

02-P455: A Combined Strategy of Human Induced Pluripotent Stem Cells, Organ-on-a-chip Engineering and Precision Proteomics Analysis for Cardiac Disease Study

Erika Yan Wang, Uros Kuzmanov, Yimu Zhao, Naimeh Rafatian, Anthony Gramolini, Andrew Emili, Peter Backx, Milica Radisic Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON, Canada

<u>02-P456:</u> Modified Chitosan/PEI Patch Releasing EGF protein and EGFR gene for regeneration of Chronic Tympanic Membrane Perforation

Myungchul Lee, Kyoung-Je Jang, Sangbae Park, Pankaj Garg, Shanmhavi Pandey, Bog Hee kim, Jong Hoon Chung Department of Biosystems and Biomaterials Science and Engineering, College of Agriculture and Life science, Seoul National University, Seoul, Korea

<u>02-P457</u>: Topographical cues enhance the functional maturity of pluripotent stem cell derived endothelial cells

Seep ., Shiming Lin, Christine Cheung, Evelyn K.F Yim, Yi-Chin Toh Department of Biomedical Engineering, National University of Singapore / Singapore Institute for Neurotechnology (SINAPSE), National University of Singapore, Singapore

<u>02-P458:</u> Injectable *In Situ-*Forming Hydrogel Based on RGD-Conjugated MPEG-PCL for Enhancing Bone Regeneration

Dae Hyeok Yang, Su Jung You, Jae Kwang Kim, Chun Ho Kim, Heung Jae Chun

Institute of Cell and Tissue Engineering, College of Medicine, The Catholic University of Korea, Seoul, Korea

<u>02-P459:</u> Fabrication of visible marker on decellularized tissue for non-invasive techniques via sputtering

Naruki Kimura, Kei Oya, Yoshihide Hashimoto, Seiichi Funamoto, Yuki Suzuki, Yuichiro Nawa, Akio Kishida, Takeo Nakano

Course of Materials and Life Science and Technology, Graduate School of Science and Technology, Seikei University, Japan

<u>02-P460:</u> Extracellular matrix-like surface-modified polycaprolactone scaffold fabricated via melting-electrohydrodynamic process for bone tissue regeneration

Kim Juyeon, WonJin Kim, Minseong Kim, GeunHyung Kim Department of Biomechatronic Engineering, College of Biotechnology and Bioengineering, Sungkyunkwan University (SKKU), Suwon, Korea

<u>02-P461:</u> Bone Tissue Regenerative Scaffold of a-TCP/Cellulose fabricated using Electrohydrodynamic printing (EHDP) process

Myojin Kim, Miji Yeo, GeunHyung Kim, Minseong Kim, GiHoon Yang Department of Biomechatronic Engineering, College of Biotechnology and Bioengineering, Sungkyunkwan University (SKKU), Suwon, Korea

02-P462: Improving Dynamic Seeding Efficiency through Modification of Fiber Geometry in FDM Manufactured Scaffolds

Chiara Arrigoni, Valerio Luca Mainardi, Elena Bianchi, Giuseppe Talò, Gabriele Dubini, Matteo Moretti

Cell and Tissue Engineering Laboratory, IRCCS istituto Ortopedico Galeazzi, Milano, Italy

<u>02-P463:</u> Efficacy of Visible Light-Cured Glycol Chitosan Hydrogel Containing b-CD/Curcumin Inclusion Complex on the Improvement of Wound Healing *In Vivo*

Dae Hyeok Yang. Su Jung You, Jae Kwang Kim, Chun Ho Kim, Heung Jae Chun

Institute of Cell and Tissue Engineering, College of Medicine, The Catholic University of Korea, Seoul, Korea

<u>02-P464:</u> 3D cultivation of donor corneas using stimuli-responsive fibrin gel for corneal tissue engineering

Szu-Ching Chen, Yi-Jen Hsueh, Hung-Chi Chen, Chieh-Cheng Huang Institute of Biomedical Engineering, National Tsing Hua University, Hsinchu, Taiwan

02-P465: Injectable Tr/Agn Hydrogels for Retinal Pigment Epithelial (RPE) Regeneration

Eunyeong Shin, Jong Ho Park, Myeong Eun Shin, Ha Yan Jeon, Jeong Eun Song, Gilson Khang

Department of BIN convergence tech, Chonbuk national university, Jeonju, Korea

<u>02-P466</u>: The Effect of Thrombin-Immobilized Poly(Lactic-co-Glycolic Acid) as Hemostatic Agent for Treatment of Organ Laceration

Dae Hyeok Yang, Su Jung You, Jae Kwang Kim, Chun Ho Kim, Heung Jae Chun Institute of Cell and Tissue Engineering, Department of Biomedical Science, College of

Institute of Cell and Tissue Engineering, Department of Biomedical Science, College of Medicine, The Catholic University of Korea, Seoul, Korea

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<u>02-P467</u>: Dual-porosity and instructive 3D printed scaffolds for regeneration of articular cartilage

Sandra Camarero-Espinosa, Lorenzo Moroni

MERLN institute for technology-inspired regenerative medicine, Maastricht University, Maastricht, The Netherlands / Polyganics B.V., Groningen, The Netherlands

02-P468: Highly aligned laminin-polydioxanone/collagen core-shell nanofibers for neuronal alignment

Su-Jin Song, Yong Cheol Shin, Yu Bin Lee, Heejung Seo, Jong Ho Lee, Il Keun Kwon, Suong-Hyu Hyon, Seung Jo Jeong, Dong-Wook Han Department of Cogno-Mechatronics Engineering, College of Nanoscience & Nanotechnology, Pusan National University, Busan, Korea

<u>02-P469:</u> Assessment of the Biodegradable Synthetic Films Potential for Tissue Engineering

Sofia Ribeiro, Vit Novacek, Emanuel M. Fernandes, Manuela E. Gomes, Rui L. Reis, **Yves Bayon**, Dimitrios I. Zeugolis

Medtronic-Sofradim Productions, Trevoux, France / Regenerative, Modular & Developmental Engineering Laboratory (REMODEL) National University of Ireland Galway (NUI Galway), Galway, Ireland

<u>02-P470:</u> Structural Integrity of Collagen and Elastin in Aortic Scaffolds Decellularized by Sonication Treatment

Aqilah Hazwani Razak, Fatihah Yusof, Munirah Sha'ban, Azran Azhim Department of Biomedical Science, Kulliyyah of Allied Health Sciences, International Islamic University Malaysia, Kuantan, Pahang, Malaysia

02-P471: Enhancement of MSC Chondrogenesis by Pulsed Electromagnetic Field

Cenk Celik, Zheng Yang, Alfredo Franco-Obregón, James HP Hui Orthopaedic Surgery, National University of Singapore, Singapore

02-P472: Polysaccharide-Functionalized Poly(ester-urethane) Scaffolds with Promoted Cell Response

Geraldine Rohman, Wassim Manhal, Karim Senni, Ronald Younes, Didier Lutomski, Sylvie Changotade

CSPBAT UMR7244, University Paris 13, UFR SMBH, Bobigny, France

<u>02-P473:</u> A Composite of Demineralized Bone Particles and Gellan Gum hydrogel for Cartilage Regeneration

JooHee Choi, Ok Kyun Choi, Wonkyung Kim, Jeong Eun Song, Gilson Khang

Department of BIN Convergence Technology, Department of Polymer Nano Science & Technology, Chonbuk National University, Korea

<u>02-P474:</u> Enhanced osteogenic differentiation of human mesenchymal stem cells on titanium surface with electrochemical nanopattern formation

Yong Cheol Shin, Su-Jin Song, Moon Sung Kang, Bongju Kim, Jun Jae Lee, Doohun Kim, Dong-Wook Han

Research Center for Energy Convergence Technology, Pusan National University, Busan, Korea

<u>02-P475:</u> Enhanced Retinal Pigment Epithelium (RPE) Regeneration Using Curcumin/Alginate Hydrogels: *in vitro* and *in vivo* Evaluation

JongHo Park, Ha Yan Jeon, Hyun Park, Jeong Eun Song, Gilson Khang Department of BIN Convergence Technology, Department of Polymer Nano Science&Technology, Chonbuk National University, Jeonju, Korea

02-P476: Multifunctional Acrylate Hydrogel as Synthetic Bone Graft Material

Polina Prokopovich, Stefano Perni

School of Pharmacy and Pharmaceutical Sciences, Cardiff University, Cardiff, UK

<u>02-P477:</u> Fabrication of fibrous 3D collagen scaffold mimicking extracellular matrix using electrohydrodynamic jet process for nerve regeneration

YoungEun Choe, Minseong Kim, Gi Hoon Yang, Miji Yeo, MyoJin Kim, GeunHyung Kim

Department of Biomechatronic Engineering, College of Biotechnology and Bioengineering, Sungkyunkwan University(SKKU), Korea

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<u>02-P478</u>: Design and evaluation of chitosan/poly(L-lactide)/pectin based composite scaffolds for cartilage tissue regeneration

Sarada Prasanna Mallick, Bhisham Narayan Singh, Amit Rastogi, Pradeep Srivastava

School of Biochemical Engineering, Indian Institute of Technology (Banaras Hindu University), Varanasi, India

<u>02-P479:</u> Multiscale patterned transplantable stem cell patches for tissue regeneration

Woochan Kim, Sunho Park, Dohyeon Lee, Daun Kim, Sungmin Park, Sujin Kim, Jangho Kim

Department of Rural and Biosystems Engineering, Chonnam National University, Gwangju, Korea

<u>02-P480:</u> Role of HGF as a Niche Factor of Salivary Gland Stem Cells Hyun-Soo Shin, Yeo Jun Yoon, Jae-Yol Lim

Department of Otorhinolaryngology, Yonsei University College of Medicine, Seoul, Korea

<u>02-P481:</u> Macroporous (3D) scaffolds for embryonal stem cell support: chemically modified dualpore size poly(2-hydroxyethyl methacrylate) hydrogels

Olga Janouskova, Martin Pradny, Eva Chylikova Krumbholcova, Miroslav Vetrik, Miroslava Duskova Smrckova Department of Biological Models, Institute of Macromolecular Science AVCR v.v.i, Czech Republic

<u>02-P482:</u> Novel Insights on Early Tissue Formation: A Synthetic Model of Tissue Development from Basic Biological Building Blocks

Udi Sarig, Hadar Sarig, Aleks Gora, Muthu Kumar Krishnamoorthi, Hanuma Kumar Bogireddi, Seeram Ramakrishna, Subbu S. Venkatraman, Marcelle Machluf

School of Materials Science and Engineering, Nanyang Technological University (NTU), Singapore

<u>02-P483:</u> Developing a humanized bone model with high adipose content to study the effect of prostate cancer therapies on bone marrow adipocytes *in vitro* and *in vivo*

Nathalie Bock, Joan Rohl, Hayley Benardos, Christoph Meinert, Jenni Gunter, Dietmar W Hutmacher, Judith A Clements Translational Research Institute, Queensland University of Technology, Brisbane, Australia

<u>02-P484:</u> Non-invasive oxygen probing in bone tissue engineering constructs

Paul Wolff, Robert J. Meier, Gregor Liebsch, Dietmar W. Hutmacher, Martijn van Griensven, Elizabeth R. Balmayor

Experimental Trauma Surgery, Klinikum rechts der Isår, Technical University of Munich, Munich, Germany

<u>02-P485</u>: Mass production of three-dimensional dermal papilla aggregates for hair tissue engineering

Paulo Andre Nobrega Marinho, Hyeongwon Choi, Wonseok Park, Tae Ryong Lee

AmorePacific Research and Development Center, Yongin, Korea

<u>02-P486:</u> 3D culture platform supplying quantitative analysis of pattern formation by controlling initial culture conditions

Rina Nobata, Tomohiro Kawahara, Masaya Hagiwara NanoSquare Research Institute, Osaka Prefecture University / Department of Bioscience and Informatics, Osaka Prefecture University, Japan

02-P487: Vascular Spheroids as Building Blocks for Scaffold-Free Biofabrication

Nicanor I. Moldovan, Leni Moldovan, April Barnard, Maria Grant, Chang-Hyun Gil, Yang Lin, Nutan Prasain, Mervin Yoder Department of Biomedical Engineering, School of Engineering, Indiana University-Purdue University Indianapolis (IUPUI), IN, USA

<u>02-P488</u>: Spheroid Formation and Culture on Electrospun Matrices

Farzaneh Moghtader, Hakan Darici, Aliakbar Ebrahimi, Erdal Karaoz, Erhan Biskin

Division of Nanotechnology and Nanomedicine, University of Hacettepe, Ankara, Turkey / NanoBMT/Biyomedtek, Cyberpark-Bilkent/KOSGEB-Baskent-Tekmer, Ankara, Turkey

02-P489: Rapid Formation of Vascularized Micro-tissue using Structure Controlled Co-Culture Spheroid

Eun Mi Kim, Hayeon Byun, Heungsoo Shin Department of Bioengineering, Hanyang University, Seoul, Korea / BK21 Plus Future Biopharmaceutical Human Resources Training and Research Team, Seoul, Korea

<u>02-P490</u>: Development of Elastic Cartilage Tissue using a 3D bioprinted scaffold: a promising alternative for microtia reconstruction

Cristina Velasquillo, Yaaziel Melgarejo-Ramírez, Julieta García-López, Roberto Sánchez-Sánchez, Claudia Gutiérrez-Gómez, Hugo Lecona, José Iván Sánchez-Betancourt, Clemente Ibarra, Young-Joon Seol, Anthony Atala, Sang Jin Lee, James Yoo Biotechnology Department, National Institute of Rehabilitation Luis Guillermo Ibarra Ibarra, Mexico City, Mexico

02-P491: Construction of 3D cardiac tissue by cell accumulation technique and collagen culture device

Yoshinari Tsukamoto, Takami Akagi, Mitsuru Akashi Graduate School of Frontier Biosciences, University of Osaka, Osaka, Japan

<u>O2-P492:</u> Epithelial-Fibroblast Hydrogel Constructs by 3D Bioprinting Shang-Mo Tsai, Chien-Wen Chang*

Department of Biomedical Engineering & Environmental Sciences, College of Nuclear Science, National Tsing Hua University, Taiwan

<u>02-P493</u>: Controlled delivery of stem cell spheroids using an thermally expandable and sticky hydrogels

Jaesung Park, Se-jeong Kim, Heungsoo Shin Department of Bioengineering, University of Hanyang, Seoul, Korea / BK21 Plus Future Biopharmaceutical Human Resources Training and Research Team, Seoul, Korea

<u>02-P494:</u> Impact of substrate stiffness on dermal papilla aggregates in microgels

Lifeng Kang, Justin J.Y. Tan, J.K. Tee, K.O. Chou, J. Pan, S.Y. A-Yeong, H.K. Ho, Paul C.L. Ho

Faculty of Pharmacy, University of Sydney, Australia

<u>02-P495:</u> Mesenchymal stem cell spheroid with BMP-2-loaded microparticles for effective bone regeneration

So Yeong Kim, Ho Yong Kim, Jin Ho Lee, Se Heang Oh Department of Nanobiomedical Science, University of Dankook, Cheonan, Korea

02-P496: Novel Static Cell Seeding Method to Improve Cell Distribution in 3D Additive Manufactured Scaffolds

Maria Camara-Torres, Ravi Sinha, Ivan Lorenzo-Moldero, Carlos Mota, Lorenzo Moroni

MERLN Institute for Technology-Inspired Regenerative Medicine, Maastricht University, Maastricht, the Netherlands

<u>02-P497:</u> Engineering "Building Blocks" for Efficient Cell Growth, Migration, and Differentiation in Tissue Engineering Applications

Adam J. Mellott, Christopher A. Neal, Sharadvi Thati, Heather E. Shinogle-Decker

Department of Plastic Surgery, University of Kansas Medical Center, Kansas City, KS, USA

<u>02-P498:</u> 2D/3D buccal epithelial cell self-assembling as a tool for cell phenotype maintenance and fabrication of multilayered epithelial linings in vitro

Anastasiya Alekseevna Gorkun, Anastasiia I Shpichka, Irina M Zurina, Nastasia V Kosheleva, Anastasiia V Koroleva, Elena V Istranova, Leonid P Istranov, Peter S Timashev, Yuri A Rochev, Irina N Saburina, Denis V Butnaru

FSBSI Institute of general pathology and pathophysiology, Moscow, Russia / Sechenov First Moscow State Medical University, Institute for Regenerative Medicine, Moscow, Russia

<u>02-P499:</u> Expansion of hair follicle stem cells using oxygen-permeable microwell culture plate

Sugi Hirano, Tatsuto Kageyama, Junji Fukuda Grad. Sch. Eng., Yokohama Natl. Univ., Japan

<u>02-P500:</u> Microfluidically generated single cell microgels as pericellular niches with temporally controlled biochemical and biophysical properties

Jeroen Leijten, Tom Kamperman, Marcel Karperien Department of Developmental BioEngineering, University of Twente, Enschede, the Netherlands

<u>02-P501:</u> Biomimetic engineering of a functional in vitro human hematopoietic niche

Thibaut Klein, Paul Bourgine, Anna Paczulla, Takafumi Shimizu, Leo Kunz, Konstantinos Kokkaliaris, Daniel Coutu, Claudia Lengerke, Radek Skoda, Timm Schroeder, Ivan Martin Tissue Engineering, Department of Biomedicine, University Hospital Basel, University of

Basel, Basel, Switzerland

<u>02-P502:</u> The effect of scaffold pore architecture on cell response

Sasha Berdichevski, Roberto Mecca, James Richardson, Mark A Birch, Roger A Brooks, Athina E Markaki Department of Engineering, University of Cambridge, Cambridge, UK

<u>02-P503:</u> A novel regenerative medicine approach for the treatment of

chronic joint injuries Jiao Jiao Li, Christopher Little

Raymond Purves Bone and Joint Research Laboratories, Institute of Bone and Joint Research, Kolling Institute, Northern Sydney Local Health District, Sydney Medical School Northern, University of Sydney, St Leonards, NSW, Australia

<u>02-P504:</u> Development of 3D Systems to Model Nerve Regeneration Jonathan M Grasman, David L Kaplan

Biomedical Engineering, Tufts University, Medford, MA USA

<u>02-P505:</u> Generating Three-Dimensional Composite Scaffolds with Tissue Specific Bioactivity Profiles

Muthu Kumar Krishnamoorthi, Udi Sarig, Lay Poh Tan, Marcelle Machluf

School of Materials Science & Engineering, Nanyang Technological University, Singapore

<u>02-P506</u>: Development of transplantable collagenous composite based on collagen compression for treating limbal stem cell deficiency

Hong kyun Kim, Man-il Huh, Kyoung-pil Lee, Hyeonjun Hong, Jeongho Kim, Byeong-Ung Park, Dong Sung Kim, Myoung Joon Kim Kyungpook National University School of Medicine, Daegu, Korea

02-P507: Tissue Adhesive Hyaluronan Hydrogels for Corneal Epithelium and Stroma Regeneration

Oommen Podiyan Oommen, Laura Koivusalo, Tanja Ilmarinen, Susanna Miettinen, Heli Skottman

Faculty of Biomedical Sciences and Engineering & BioMediTech Institute, Tampere University of Technology, Tampere, Finland

<u>02-P508:</u> Widespread Changes in Transcriptome Profile of Human Mesenchymal Stem Cells Induced by Two-Dimensional (2D) Nanosilicates

Akhilesh K Gaharwar, James K Carrow, Lauren Cross, Robert Reese, Manish Jaiswal, Carl Gregory, Roland Kaunas, Irtisha Singh Department of Biomedical Engineering, Texas A&M University, College Station, TX, USA

<u>02-P509:</u> Engineered cardiac tissue-like constructs for drug assessment and cardiac repairing

Junjun Li, Itsunari Minami, Motoko Shiozaki, Leqian Yu, Shin Yajima, Shigeru Miyagawa, Yuji shiba, Nobuhiro Morone, Satsuki Fukushima, Jing Qiao, Hidetoshi Kotera, Norio Nakatsuji, Yoshiki Sawa, Yong Chen, Li Liu

Department of Cardiovascular Surgery, Osaka University Graduate School of Medicine, / Institute for Integrated Cell-Material Sciences (WPI-iCeMS), Kyoto University, Japan

<u>02-P510:</u> In Vitro Evaluation of 3D Poly(Lactic-*co*-Glycolic Acid) Incorporated with Atelocollagen and Fibrin for Articular Cartilage Bioscaffolds: *Gross Observation, Histological Analyses and Biochemical Study*

Aisyah Hanani Md Ali @ Tahir, Muhammad Azri Ifwat Mohamed Amin, Azran Azhim, Munirah Sha'ban

Department of Biomedical Science, Kulliyyah of Allied Health of Sciences, International Islamic University Malaysia, Kuantan, Pahang, Malaysia

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02-P511: Synthetic Light-Curable Polymeric Materials Provide a Supportive Niche for Dental Pulp Stem Cells

Adam Celiz, Kyle Vining, Jacob Scherba, Alaina Bever, Morgan Alexander, David Mooney

AleXander, David Michney Department of Bioengineering, Imperial College London, UK / Advanced Materials and Healthcare Technologies Division, School of Pharmacy, University of Nottingham, Nottingham, UK / Wyss Institute for Biologically Inspired Engineering, Harvard University, Cambridge, MA, USA

<u>02-P512:</u> Tissue engineered electrode coatings: developing living bioelectronic interfaces

Ulises Alejandro Aregueta Robles, Penny J Martens, Khoon S Lim, Laura A Poole-Warren, Rylie A Green

Faculty of Engineering, Graduate School of Biomedical Engineering, UNSW, Sydney, Australia

<u>02-P513:</u> Effective bone regeneration by growth factors with biomimetical release pattern

Ho Yong Kim, June-Ho Byun, Jin Ho Lee, Se Heang Oh Department of nanobiomedical science, Dankook University, Cheonan, Korea

<u>02-P514:</u> In situ tissue engineering concept for enhanced bone defect regeneration – Functionalization of biomimetic scaffolds with an autologous growth factor mix from hypoxia-exposed hBMSC

Mandy Quade, Anastasia Gabrielyan, Anja Lode, Angela Roesen-Wolff, Seemun Ray, Jessica Grafe, Volker Alt, Michael Gelinsky Centre for Translational Bone, Joint and Soft Tissue Research, University Hospital, Germany

02-P516: An *ex vivo* pregnant-like human tissue model to assess injectable hydrogels for the prevention of preterm birth

Nicole R. Raia, Stephanie L. Bakaysa, Chiara E. Ghezzi, Michael D. House, David L. Kaplan

Department of Biomedical Engineering, Tufts University, Medford, USA

02-P517: Tissue-engineered trachea from a 3D-printed scaffold enhances whole-segment tracheal repair in a goat model

Wei Fu, Meng Yin, Dekai Xia, Dawei Jin, Qian Wang, Manchen Gao, Bei Feng, Nevin Witman

Shanghai Children's Medical Center, School of Medicine, Shanghai Jiao Tong University, China

<u>02-P518:</u> Enhancement of angiogenesis in a tissue-engineered skin model derived from neurofibromatosis type 1 patients

Vincent Roy. Rémy Lamontagne, Lydia Touzel-Deschênes, Peter Kannu, Hélène T. Khuong, Nicolas Dupré, François Gros-Louis Department of Surgery, Laval University, Quebec, Quebec, Canada / Centre de Recherche du CHU de Québec-Laval University, regenerative medicine division, LOEX, Canada

<u>02-P519:</u> In situ bioprinted human stem cells effects neocartilage formation in an ex vivo osteochondral model

Carmine Onofrillo, Serena Duchi, Stephanie Doyle, Cathal O'Connel, Timon Eekle, Romane Blanchard, Peter Choong, Claudia Di Bella Department of Surgery, St Vincent's Hospital, University of Melbourne, Fitzroy, VIC, Australia

02-P521: Development of Versatile Human *In Vitro* Vascularized Adipose Tissue Model -Serum-Free Angiogenesis and Natural Adipogenesis

Outi Huttala, Maaria Palmroth, Tuula Heinonen, Timo Ylikomi, Jertta-Riina Sarkanen

FICAM, University of Tampere, Tampere, Finland

<u>02-P522:</u> Role of Endothelial Cells on Molecular Transport through the Placenta

Navein Arumugasaamy, Alana Gudelsky, Peter CW Kim, John P Fisher Fischell Department of Bioengineering, University of Maryland, College Park, MD, USA / Center for Engineering Complex Tissues, University of Maryland, College Park, MD, USA / The Sheikh Zayed Institute for Pediatric Surgical Innovation, Children's National Health System, Washington, D.C., USA

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02-P523: RNF213 knock-out using CRISPR-Cas9 reduce cell proliferation and enhance angiogenesis in 3D human brain microvascular endothelial cell culture

Vincent Roy, Geneviève Milot, Guy A. Rouleau, Nicolas Dupré, François Gros-Louis

Department of Surgery, Laval University, Quebec, Quebec, Canada / Centre de Recherche du CHU de Québec-Laval University, regenerative medicine division, LOEX, Canada

02-P524: Stretchable ECM membrane improves cardiovascular repair and skin wound healing

Kwideok Park, In Gul Kim, Muhammad Suhaeri, Mintai P Hwang, Mi Hee Noh, Donghoon Choi

Center for Biomaterials, Korea Institute of Science and Technology (KIST), Seoul, Korea / Division of Bio-Medical Science and Technology, KIST School, Korea University of Science and Technology (UST), Seoul, Korea

<u>02-P525</u>: 3D-printed Poly (epsilon-caprolactone) scaffold combined with ECM-based hydrogel for tissue-engineered meniscus

Mingxue Chen, Weimin Guo, Quanyi Guo Department of orthopaedics, Chinese PLA general hospital, Beijing, China

<u>O2-P526:</u> Layering of tissue-specific extracellular matrix scaffolds for the regeneration of spatially complex musculoskeletal tissues

Pedro J Diaz-Payno, Grainne M Cunniffe, Eamon J Sheehy, Susan E Critchley, Henrique V Almeida, Pierluca Pitacco, Simon Carroll, Olwyn Mahon, Aisling Dunne, Tanya Levingstone, Conor Moran, Robert T Rrady, Eorgal J O'Brian, Pieter Al Brama, David J Kolly,

Brady, Fergal J O'Brien, Pieter AJ Brama, Daniel J Kelly Trinity Centre for Bioengineering, Trinity Biomedical Science Institute, Trinity College Dublin, Dublin, Ireland / Department of Mechanical and Manufacturing Engineering, School of Engineering, Trinity College Dublin, Dublin, Ireland

<u>02-P527:</u> Chitosan/Alginate scaffolds and dental stem cells towards temporomandibular disc regeneration

Maria Chatzinikolaidou, Maria Bousnaki, Athina Bakopoulou, Danai Papadogianni, Nektaria Marianthi Barkoula, Aristidis Kritis, Petros Koidis

Department of Materials Science and Technology, University of Crete, Heraklion, Greece / Institute of Electronic Structure and Laser, Foundation and Technology-Hellas, Heraklion, Greece

<u>02-P528:</u> Self-Setting and Injectable Hyaluronic Acid Hydrogels with Bioinspired Properties for Skeletal Tissue Engineering

Killian Flegeau, Helene Gautier, Gildas Rethore, Pascal Bordat, Pierre Weiss

Inserm, UMR 1229, RMeS, Regenerative Medicine and Skeleton, Université de Nantes, ONIRIS, Nantes, F-44042, France / Université de Nantes, UFR Odontologie, Nantes, F-44042, France / HTL S.A.S, Javené, France

<u>02-P529:</u> Self-assembly of Biofunctional Fmoc-hydrogels for Enhanced Cell Transplantation

Yi Wang, Xue Fei He, Kiara F Bruggeman, Bishakhdatta Gayen, Antonio Tricoli, Woei Ming Lee, Richard J Williams, David R Nisbet Laboratory of Advanced Biomaterials, Research School of Engineering, Australian National University, Canberra, Australia

<u>02-P530:</u> Highly Aligned Nanofibrous Extracellular Matrix for Diverse Tissue Engineering Applications

Feng Zhao, Qi Xing, Zichen Qian, Lijun Zhang, Caleb Vogt, Mitchell Tahtinen

Department of Biomedical Engineering, Michigan Technological University, USA

<u>02-P531:</u> Uniform cell distribution and abundant phenotypic expression are key aspects of tissue engineering

Chun Wei Willy Chang, Pen Hsiu Grace Chao

Institute of Biomedical Engineering, National Taiwan University, Taiwan

<u>02-P532:</u> Supramolecular Hydrogels as Extracellular Matrices for Tissue Engineering Applications

Shahzad Hafeez, Nicholas M. Matsumoto, Egbert W. Meijer, Matthew B. Baker

Department of Complex Tissue Regeneration, MERLN Institute, Maastricht University, the Netherlands

02-P533: Characterization of the human decellularized ovary

Zahra Vojdani, Ashraf Hassanpour, Tahereh Talaei-Khozani, Elyas Karhar, Vahid Razban

Department of Anatomy, Shiraz University of Medical Sciences, Shiraz, Iran

<u>02-P534:</u> Extensive assessment of host immune response following engraftment of decellularized uterine scaffolds in the rat model

Arvind Manikantan Padma, Min Jong Song, Mats Brännström, Mats Hellström

Laboratory for Transplantation and Regenerative Medicine, Dept. of Obstetrics and Gynecology, Sahlgrenska Academy, University of Gothenburg, Sweden

02-P535: Reconstructed decellularized uterine tissue for female fertility treatments

Mats Hellstrom, Tom T Tiemann, Arvind M Padma, Min Jong Song, Mats Brannstrom

Laboratory for Transplantation and Regenerative Medicine, Dept. of Obstetrics and Gynecology, Inst. of Clinical Science, Sahlgrenska Academy, University of Gothenburg, Sweden

<u>02-P536</u>: Retrievable grafts of xenoislet-laden hydrogel fibers for long-term glycemic control in diabetic mice

Fumisato Ozawa, Takaichi Watanabe, Shogo Nagata, Teru Okitsu, Shoji Takeuchi

Institute of industrial science, The University of Tokyo, Tokyo, Japan

Zurich. Switzerland

02-P537: Characterization of M1 and M2-Polarized Macrophages in Vascularized Human Dermo-Epidermal Skin Substitutes *In Vivo*

Agnes S. Klar, Katarzyna Michalak, Thomas Biedermann, Claudia Meuli-Simmen, Martin Meuli, Ernst Reichmann Tissue Biology Research Unit, University Children's Hospital Zurich, University of

<u>02-P538:</u> Microvessel Model of Sprouting Angiogenesis to Study the Effect of Epidermal Growth Factor-Like Domain 7

Ryo Usuba, Joris Pauty, Fabrice Soncin, Yukiko T. Matsunaga Center for International Research on Integrative Biomedical Systems (CIBiS), Institute of Industrial Science, The University of Tokyo, Japan / Department of Bioengineering, The University of Tokyo, Japan

<u>02-P539</u>: Development of new *in vitro* model that mimics early implantation of embryo using tissue engineered constructs derived from human endometrial stromal cells

Jeonghyun Kim, Takayuki Harada, Yasushi Hirota, Takehiro Hiraoka, Osamu Yoshino, Shigeru Saito, Yutaka Osuga, Takashi Ushida, Katsuko S Furukawa

Department of Bioengineering, University of Tokyo, Tokyo, Japan

<u>02-P540:</u> Tuning fluoride dose to induce vascularized bone formation via modulating the osteoimmune response of macrophages

Shiyu Wu, Binbin Xia, Xiaoshuang Wang, Yudong Liu, Runheng Liu, Quan Liu, Zhuofan Chen, Zetao Chen

Department of Oral Implantology, Guanghua School of Stomatology, Hospital of Stomatology, Sun Yat-sen University, Guangzhou, China / Guangdong Provincial Key Laboratory of Stomatology, Sun Yat-sen University, Guangzhou, China

<u>02-P541:</u> The Importance of Factorial Design in Tissue Engineering and Biomaterials Science: Optimization of Cell Seeding Efficiency on Dermal Scaffolds as a Case Study

Alexandra Levin, Vaibhav Sharma, Lilian Hook, **Elena Garcia-Gareta** Regenerative Biomaterials Group, RAFT Institute, Mount Vernon Hospital, Northwood, UK

<u>02-P542</u>: An injectable delivery system for the local delivery of osteogenic extracellular vesicles

Sophie Constance Cox, Niusha Nikravesh, Owen Davies School of Chemical Engineering, University of Birmingham, UK

<u>02-P543:</u> Optimisation of algorithmically generated hierarchical vascular networks

Dulce M Aguilar Garza, Andrew A Guy, Alexander W Justin, Athina E Markaki

University of Cambridge, UK

<u>02-P544:</u> Enabling platform technology for 3D bioprinting of functional and vascularized human endocrine organs

Vladimir Alexandrovich Mironov

3D Bioprinting Solutions, Moscow, Russia / Institute for regenerative medicine, Sechenov University, Moscow, Russia

P17. Veterinary medicine

<u>02-P545:</u> Engraftment, Neuroglial Transdifferentiation and Behavioral Recovery after Complete Spinal cord transection in Rats

Alberto Maria Crovace, Sabino Luzzi, Luca Lacitignola, Valerio Valentini, Edda Giuseppina Francioso, Giacomo Rossi, Gloria Invernici, Renato Juan Galzio

Department of Veterinary Medicine ,University of Perugia, Italy

<u>02-P546:</u> Combined effects of TGFB3, BMP12 and tendon matrix on tenogenic differentiation of mesenchymal stromal cells

Walter Brehm, Susanne Roth, Susanna Schubert, Janina Burk University of Leipzig, Faculty of Veterinary Medicine, Department for Horses, Leipzig, Germany

Kentaro Fukuda, Atsushi Tomita, Taisuke Kuroda, Norihisa Tamura, Yoshinori Kasashima

Clinical science and pathobiology division, Equine research institute, Japan Racing Association, Tochigi, Japan

<u>02-P548</u>: Proteomic characterization and anti-inflammatory effect of primed canine adipose mesenchymal stem cell conditioned medium

Pauline Cajon, Florence Poirier, Georges Uzan, Didier Lutomski, Philippe Mauduit, Jean-Jacques Lataillade, Tewfik Kadri StemT, Elancourt, France

<u>02-P549:</u> A case study of mesenchymal stem cell therapy to chronic hepatitis of dog

Taichi Sugimoto, Youhei Fujimoto, Takeaki Yokozeki, Atsushi Yokoyama

Sakura animal clinic, Nagano, Japan

<u>02-P550:</u> A questionnaire survey to the clients of companion animals receiving transplantation therapy of allogenic mesenchymal stem cells. Atsushi Yokoyama, Youhei Fujimoto, Takeaki Yokozeki Sakura animal clinic, Nagano, Japan

<u>02-P551:</u> Transplantation therapy of adipose-derived mesenchymal stem cells for dog and cat with corneal injury

Youhei Fujimoto, Subaru Matsuba, Takeaki Yokozeki, Atsushi Yokoyama

Sakura animal clinic, Nagano, Japan

<u>02-P552:</u> Comparative analysis of Intra-articular Injection of Mesenchymal Stem Cells, Stromal Vascular Fraction and Platelet-Rich Plasma in Partially Torn Anterior Cruciate Ligament in a Rabbit Model

Kanghyo Park, Soojung Lee, Jeong Ik Lee, Hun-Young Yoon Department of Veterinary Surgery, College of Veterinary Medicine, Konkuk University, Seoul, Korea

02-P553: Periostium regeneration using collagen biomembrane to promote soft-hard tissue integration: A clinical experience

Andreas Kaasi, Marcelo Dantas Reis, André Luiz Jardini, Paulo Kharmandayan

Eva Scientific Ltd, São Paulo, Brazil / National Institute of Biofabrication, Campinas, Brazil / University of Campinas, Campinas, Brazil

<u>02-P554</u>: A novel co-culture assay reveals context-sensitive immunomodulation by equine multipotent mesenchymal stromal cells

Walter Brehm, Aline Hillmann, Susanna Schubert, Janina Burk University of Leipzig, Faculty of Veterinary Medicine, Department for Horses, Leipzig, Germany

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02-P555: Microfluidic Chondrocyte Culture in vitro facilitates Osteoarthritis Research

Julie Rosser, Barbara Bachmann, Iris Ribitsch, Florien Jenner, Peter Ertl

University of Technology, Vienna, Austria

02-P556: DIFFERENT EFFICACY OF CONVENTIONAL VERSUS INNOVATIVE THERAPIES IN TREATING SKIN WOUNDS

Marco vincenzo Patruno, Chiara Gomiero, Tiziana Martinello, Anna Perazzi, Giulia Maria DeBenedictis, Silvia Ferro, Matteo Zuin, Emilio Martines, Paola Brun, Lisa Maccatrozzo, Luca Melotti, Sarah Broeckx, Jan Spaas, Koen Chiers, Ilaria Iacopetti Department of Comparative Biomedicine and Food Science, University of Padua, Italy

20-SYIS RFA. Rapid Fire Talks Award candidates

Please see P.73 for details (<u>Rapid Fire Talks Award</u> will be held at Room 10 (C-1) on September 5th (Wed))

20-SYIS RFA-1: Development of an Artificial Eyelid Device for Corneal Culture Models

Bibek Raut

20-SYIS RFA-2: Modeling of amyotrophic lateral sclerosis with a tissue-engineered spinal cord

Aurelie Louit

20-SYIS RFA-3: Insect Muscle Tissue Engineering for Bioactuator and Food Applications

Natalie Rose Rubio

20-SYIS RFA-4: CRISPR Activation for BMSC Engineering and Enhanced Calvarial Bone Healing Kai-Lun Huang

<u>20-SYIS RFA-5:</u> Inkjet Printing of Graphene Oxide for Cell Patterning: The Application in Bio-Subretinal Chip

Ming Liang Tseng

20-SYIS RFA-6: Microfabrication of In Vitro Alveolar-Capillary Barrier Model by Inkjet-based Bioprinting Dayoon Kang

20-SYIS RFA-7: The Strategy of Molecular Therapy to Promote Tissue Regeneration by the Synergy of BMP-2 and SHH

Chao-Ming Su

20-SYIS RFA-8: Development of a Crosslinkable Hydrogel Derived from Human Placental Tissue

Leah N Brew

September 7 (Fri), 2018 12:10 - 13:10

P18. Bone / Cartilage

<u>03-P001:</u> Short-Term Delivery of Fibrin-Bound VEGF Protein in Osteogenic Grafts ensures both Increased Vascularization and Efficient Bone Formation

Maximilian Gerhard Burger, Veronica Sacchi, Andrea Grosso, Alexander Lunger, Priscilla S. Briquez, Rene D. Largo, Jeffrey A. Hubbell, Dirk J. Schaefer, Andrea Banfi, Nunzia DiMaggio Department of Biomedicine, Basel University and Department of Surgery, Basel University Hospital / Plastic and Reconstructive Surgery, Basel University Hospital, Basel, Switzerland, Switzerland

<u>03-P002:</u> Calcium Releasing Pro-angiogenic PLA Nanofibers. An Angiogenic Potential Study for Bone Healing

Joan Marti-Munoz, Soledad Perez-Amodio, Irene Cano-Torres, Josep A. Planell, Elisabeth Engel, Oscar Castano

Biomaterials for Regenerative Therapies, Institute for Bioengineering of Catalonia (IBEC), The Barcelona Institute of Science and Technology (BIST), Barcelona, Spain / CIBER en Bioingeniería, Biomateriales y Nanomedicina (CIBER-BBN) Madrid, Spain

03-P003: Bioactive hybrid scaffolds impregnated with heparin for promoting bone angiogenesis

Griselda V Najera-Romero, Muhammad Yar, Ihtesham ur Rehman Materials Science and Engineering Department, Kroto Research Institute, University of Sheffield, UK

<u>03-P004:</u> Short-term delivery of fibrin-bound VEGF protein in osteogenic grafts: increased vascularization coupled to efficient bone formation

Andrea Grosso, Maximilian G. Burger, Alexander Lunger, Priscilla S. Briquez, Jeffrey A. Hubbel, Veronica Sacchi, Dirk J. Schaefer, Andrea Banfi, Nunzia Di Maggio

Cell and Gene Therapy Laboratory, Department of Biomedicine, University of Basel, Basel, Switzerland

<u>03-P005</u>: Pro-angiogenic Thermosensitive Injectable Hydrogels for Bone Regeneration

Fatma Zehra Kocak, Muhammad Yar, Ihtesham Ur Rehman The Kroto Research Institute, Department of Materials Science and Engineering, University of Sheffield, England, UK

<u>03-P006</u>: Development of a Compromised Maxillofacial Wound Healing Model for Bone Tissue Engineering

Fred Kurtis Kasper, Stacey Piotrowski, Neeraja Dharmaraj, Ashley Clark, Ramesh Tailor, James Bankson, Lori Hill, Stephen Lai, Simon Young

The University of Texas Health Science Center at Houston, Houston, Texas, USA

<u>03-P007:</u> Study on bone formation in *Ano5*-knockout mice

Ying Hu, Xiaoyu Wang, Xiu Liu

Beijing Stomatological Hospital, Capital Medical University, Beijing, China

<u>03-P008</u>: A Biomimetic 3D Scaffold for Long Bone Repair

Lanxin Lyu, Jingyi Zhang, Xiaofeng Zhang, Ningping Huang, **Ying Yang** Emergency Center of the Affiliated Hospital of Xuzhou Medical University, Xuzhou, China / Institute of Emergency Rescue Medicine, Institute of Health Emergency, Xuzhou Medical University, China

<u>03-P009:</u> Utilizing a scaffold-based local chemotherapy approach for the treatment of Osteosarcoma in an orthotopic humanized mouse model

Christoph Alexander Lahr, Marietta Landgraf, Jacqui McGovern, Abbas Shafiee, Dietmar Werner Hutmacher

Institute of Health and Biomedical Innovation, Queensland University of Technology, Brisbane, Australia

<u>03-P010:</u> Time-lapsed *In Vivo* Micro-CT Imaging Allows Longitudinal Assessment of Biomaterials in a Mouse Femur Defect Model

Esther Wehrle, Duncan C Betts, Gisela A Kuhn, **Sandra Hofmann**, Ralph Müller

Institute for Biomechanics, ETH Zurich, Zurich, Switzerland

03-P011: Zonal constructs for cartilage repair; from *in vitro* development to long-term implantation in an equine model

Irina A.D. Mancini, **Riccardo Levato**, Harold Brommmer, Behdad Pouran, Thomas Böck, Florencia Abinzano, Anneloes Mensinga, Mattie H.P. van Rijen, Torsten Blunk, Jürgen Groll, Jos Malda, P. René van Weeren

Department of Equine Sciences, University of Utrecht, Utrecht, the Netherlands

<u>03-P012:</u> Molecular and histological characterization of nasal chondrocyte-based cartilage grafts for the treatment of kissing lesions in the knee

Inga Marijanovic, Maja Music, Mirta Vuckovic, Petar Kostesic, Drazen Maticic, Drazen Vnuk, Andreja Vukasovic, Amra Secerovic, Biljana Sasi, Alan Ivkovic

Division of Molecular Biology, Department of Biology Faculty of Science University of Zagreb, Croatia

<u>03-P013:</u> Reconstruction of osteochondral defects using a microenvironment created from autologous endothelial progenitor cells and PLGA scaffolds in rabbit model

Tzu-Hsiang Lin, Ming-Long Yeh Department of Biomedical Engineering, National Cheng Kung University, Tainan, Taiwan

03-P014: Bone Healing in the Axolotl – A novel Surgical Approach to Femur Osteotomies

Agnes Ellinghaus, Anastasia Polikarpova, Christian H Bucher, Georg N Duda, Elly M Tanaka, Katharina Schmidt-Bleek

Julius Wolff Institute and Berlin-Brandenburg Center for Regenerative Therapies, Charite - Universitaetsmedizin Berlin, Germany

<u>03-P015:</u> PLGA Microspheres: In-vivo Evaluation for Osteomyelitic Treatment

Ahmad Fahmi Harun, Farahidah Mohamed, Mohd Affendi Mohd Shafri Department of Physical Rehabilitation Sciences, International Islamic University Malaysia

<u>03-P016:</u> In vivo evaluation of 3D-printed and tissue engineered bone grafts for alveolar cleft osteoplasty

Paula Korn, Tilman Ahlfeld, Winnie Pradel, Franziska Lahmeyer, Adrian Franke, Anja Lode, Ursula Range, Martina Rauner, Michael Gelinsky, Günter Lauer

Department of Oral and Maxillofacial Surgery, Faculty of Medicine Carl Gustav Carus, Technische Universitaet Dresden, Germany

03-P017: Establishment of osteomyelitis model in rat induced Methicilin-resistant Staphylococcus aureus

Daesung Ham, Young Suk Choi, Ji Yun Lim, A hyun Kyun, Jung Woo Yoo, Young Koo Lee

Department of Orthopaedic Clinical Research Institute, Soonchunhyang University, Bucheon Hospital, JungDong, Korea

<u>03-P018</u>: Early application of the bisphosphonates after radiation hadn't prevention the occurrence of radioactive osteonecrosis in the mandible

Zongmei Zheng, Xuejiu Wang, Yi Xu, Piao Wang Department of Multiple diagnosis and treatment center, Capital Medical University School of Stomatology, Beijing, China

03-P019: The effect of transcutaneous CO₂ application on distraction osteogenesis of rabbit tibia

Yohei Kumabe, Takahiro Niikura, Keisuke Oe, Tomoaki Fukui, Shunsuke Takahara, Michio Arakura, Yu Kuroiwa, Takahiro Oda, Ryosuke Kuroda

Department of Orthopaedic Surgery, Kobe University Graduate School of Medicine, Kobe, Japan

<u>03-P020</u>: Different production technology of blood derived products influences origin of extracellular vesicles

Andrea De Luna, Olga Kuten, René Weiss, Zsombor Lacza, Viktoria Weber, Stefan Nehrer

Center for Regenerative Medicine, Danube University Krems, Austria

03-P021: Combination of Endogenous Stem Cell Mobilizer and Osteoinductive Nanofibrous Scaffolds for *In Situ* Bone Tissue Engineering

Jong Seung Lee, Yoonhee Jin, Min Suk Lee, Hee Seok Yang, Seung-Woo Cho

Department of Biotechnology, Yonsei University, Seoul, Korea

<u>03-P022</u>: Programming adult human mesenchymal stromal cells towards stable chondrogenesis following developmental cues

Paola Occhetta, Sebastien Pigeot, Marco Rasponi, Boris Dasen, Arne Mehrkens, Thomas Ullrich, Ines Kramer, Sabine Guth-Gundel, Andrea Barbero, Ivan Martin

Department of Biomedicine, University Hospital Basel, University of Basel, Basel, Switzerland

<u>03-P023:</u> The Effect of Betulinic Acid on Human Mesenchymal Stem Cell Proliferation and Osteogenic Differentiation

Sasithon Senamontree, Nongnuch Gumlungpat, Adisri Charoenpanich Department of Biology, Faculty of Science, Silpakorn University, Nakhon Pathom, Thailand

<u>03-P024:</u> Electrospun nanofibrous scaffolds enhance paracrine function of mesenchymal stem cells (MSCs) for cartilage regeneration

Nurul Dinah Kadir, Yang Zheng, Eng Hin Lee

NUS Tissue Engineering Program, Department of Orthopaedic Surgery, Yong Loo Lin School of Medicine, National University of Singapore, Singapore

<u>03-P025:</u> Incorporation of cannabidiol-loaded microspheres into gelatin/nano-hydroxyapatit promote bone regeneration in rat radial bone defects

Samaneh Hosseini, Ahmad Oryan, Amir Kamali, Mohamadreza Baghaban Eslaminejad

Department of Stem Cells and Developmental Biology, Cell Science Research Center, Royan Institute for Stem Cell Biology and Technology, ACECR, Tehran, Iran

<u>03-P026:</u> *In vitro* beneficial potential of human Adipose-derived Stromal Cell secretome for osteoarthritis

Stefania Niada, Chiara Giannasi, **Anna Teresa Brini** Laboratory of Biotechnological Applications, IRCCS Galeazzi Orthopaedic Institute, Milan, Italy

<u>03-P027:</u> Osteogenic potential of tauroursodeoxycholic acid (TUDCA) as an alternative to rhBMP - 2 in a mouse spinal fusion model

Byoung Ju Kim, Arai Yoshie, Eun-Mi Park, Sunghyun Park, Alvin Bello, In-Bo Han, Soo-Hong Lee

Department of Biomedical Science, CHA University, Seongnam-si, Korea <u>03-P028</u>: Injectable Depot/Release-Controlled Lovastatin

Nanoparticles Enhance Alveolar Bone Repair in Rabbits Ziyad S. Haidar, Sergio M. Olate

BioMATX, Faculty of Dentistry, Universidad de los Andes, Santiago, Chile / División de Cirugia Oral y Maxilofacial, Facultad de Odontología y CEMYQ, Universidad de La Frontera, Temuco de Chile / Centro de Investigación e Innovación Biomédica, Universidad de los Andes, Santiago de Chile, Chile

<u>O3-PO29:</u> Local administration of nuclear factor of activated T cells (NFAT) c1 inhibitor to suppress early resorption and inflammation induced by bone morphogenetic protein-2

Soon Jung Hwang, In Sook Kim

Department of Oral and Maxillofacial Surgery, College of Dentistry, Seoul National University, Seoul, Korea / Dental Rsearch Institute, Seoul National University, Seoul, Korea

<u>03-P030:</u> Effect of Mesenchymal Stromal Cell Recruiting Chemokine CCL25 on Healthy and OA Cartilage

Jochen Ringe, Luise Lüderitz, Kristin Fröhlich, Tilo Dehne, Michael Sittinger

Charité-Universitätsmedizin Berlin, corporate member of Freie Universität Berlin, Humboldt-Universität zu Berlin, and Berlin Institute of Health, Tissue Engineering Laboratory and Berlin-Brandenburg Center for Regenerative Therapies, Department of Rheumatology and Clinical Immunology, Berlin, Germany

<u>03-P031:</u> *In vitro* and *in vivo* study of the safety and efficiency of a TGF β 1-loaded hyaluronan-based scaffold for cartilage tissue engineering

Clara Levinson, Emma Cavalli, Nicolas Broguière, Ann Lee Applegate, Marcy Zenobi-Wong

Tissue Engineering + Biofabrication Lab, ETH Zürich, Switzerland

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03-P032: Screening of Osteogenic-Enhancing Short Peptides from BMPs for Biomimetic Material Applications

Kei Kanie, Rio Kurimoto, Jing Tian, Aika Yamawaki-Ogata, Koichiro Uto, Mitsuhiro Ebara, Yuji Narita, Hiroyuki Honda, Ryuji Kato Graduate School of Pharmaceutical Sciences, Nagoya University, Nagoya, Japan

<u>03-P033:</u> Induction of bone formation *in vivo* using nanoclay gel and bone morphogenic protein: an optimisation study in a murine subcutaneous implant model

Josephine Kate McEwan, Janos M Kanczler, Stuart A Lanham, Julia A Wells, Jonathan I Dawson, Richard O C Oreffo

Bone and Joint Research Group, Centre for Human Development, Stem Cell and Regeneration, Institute of Developmental Sciences, University of Southampton, Southampton, UK

<u>03-P034:</u> CXCL12, TGFbeta3 and ATP released by injured cartilage stimulate migration of synovial fluid and bone marrow-derived MSCs to the injury site

Aileen Crawford, Saima Ahmed, Sarrawat Rehman, Edward Draper, Dave Buttle

Department of Clinical Dentistry, University o7f Sheffield, Sheffield, UK

$\underbrace{\textbf{03-P035:}}_{i} \textit{Escherichia coli-} derived BMP-2-incorporated β -TCP granules induces bone regeneration in femoral defect in rabbits$

Yu Kuroiwa, Takahiro Niikura, Sang Yang Lee, Keisuke Oe, Tomoaki Fukui, Shunsuke Takahara, Michio Arakura, Yohei Kumabe, Takahiro Oda, Yoshitada Sakai, Ryosuke Kuroda

Department of Orthopaedic Surgery, Kobe University Graduate School of Medicine, Kobe, Japan

<u>03-P036:</u> Exosomes derived from mesenchymal stem cells as a possible therapy for osteoarthritis

Chiara Gentili, Elisabetta Palamà, Simonetta Carluccio, Georgina Shaw, Frank Barry, Mary Murphy

Laboratory of Regenerative Medicine, Department of Experimental Medicine, University of Genoa, Italy

<u>03-P037</u>: Directed *in situ* regeneration of cartilage tissue by biofunctionalised polymer implants for traumatic and early osteoarthritis lesions

Aileen Crawford, John Haycock, Matthew Pead, Richard Meeson, Gordon Blunn, David Buttle

Department of Clinical Dentistry, University of Sheffield, Sheffield, UK

$\underline{\text{O3-PO38:}}$ Therapeutic Potential of Bromodomain Inhibitors on TNF α -Impaired Bone Regeneration

Tse-Hsiang Chen, Franz E. Weber, Chafik Ghayor Oral Biotechnology and Bioengineering, Center for Dental Medicine, University of Zurich, Zurich, Switzerland / Zurich Center for Integrative Human Physiology (ZIHP), University of Zurich, Zurich, Switzerland

<u>03-P039:</u> Oral administration of an egg yolk-derived peptide promotes fracture healing in a mouse model

Yoshiaki Kitaura, Chihiro Awada, Denise Zujur, Utano Nakamura, Maya Sakashita, Motonori Yamaguchi, Mujo Kim, Ung-il Chung, Shinsuke Ohba

Department of Bioengineering, The University of Tokyo, Tokyo, Japan

<u>03-P040</u>: Synthetic intrinsically-disordered-peptides for bone tissue engineering

Havard J Haugen, Manu Gomez-Florit, Janne Reseland University of Oslo, Norway

<u>03-P041:</u> The Effect of *Cissus quadrangularis* Shoot Extracts on Osteogenic Differentiation of Human Mesenchymal Stem Cells

Adisri Charoenpanich, Nattavadee Pathommeechok, Ratchapong Netsrithong, Suwanan Sailada, Pornsri Charoenpanich, Peerasit Sinlapavilawan, Panupun Limpachayaporn

Department of Biology, Faculty of Science, Silpakorn University, Nakhon Pathom, Thailand

<u>03-P042:</u> Role of glucocorticoids during Chondrogenic commitment in mesenchymal stromal stem cells

Valentina Basoli, Elena Della Bella, Mauro Alini, Martin J Stoddart Musculoskeletal Regeneration, AO Research Institute Davos, Davos Platz, Switzerland

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<u>03-P043:</u> Screening of small molecules applied in traditional Chinese medicine: towards biological treatment of osteoarthritis

Reihane Ziadlou, Sibylle Grad, Martin Stoddart, Xinluan Wang, Ling Qin, Andrea Barbero, Ivan Martin, Mauro Alini

Department of Biomedical engineering, University of Basel, Allschwil, Switzerland

03-P044: poly-UDCA (ursodeoxycholic acid) enhances the osteogenic differentiation of human mesenchymal stem cells and bone regeneration

Hyoeun Park, Yoshie Arai, Sunghyun Park, Jeonghun Lee, Dongwon Lee, Soo-Hong Lee

Department of Biomedical science, CHA University, Gyeonggi-do, Korea

<u>03-P045:</u> Cell Membrane Tethered BMP-9 Enhances Proliferation and Induces Osteoblastic Differentiation in Bone Mesenchymal Stem Cells

Vassilios Sikavitsas, Patrick McKernan, Nathan Richbourg, Roger Harrison

Stephenson School of Biomedical Engineering, The University of Oklahoma, USA / School of chemical, Biological, and Materials Engineering, The University of Oklahoma, USA

<u>03-P046:</u> Osteochondral Repair Using Decellularized Man-Made Hyaline-Like Cartilage Graft

Xiaolei Nie, Dong-An Wang School of Chemical and Biomedical Engineering, Nanyang Technological University, Singapore

03-P047: Engineering Bone Tissue with Spider Silk: Effects of calcium on osteogenic differentiation

Mona Widhe, Katherine Trivino, My Hedhammar Division of Protein Sciences, School of Engineering Sciences in Chemistry, Biotechnology and Health, KTH Royal Institute of Technology, Stockholm, Sweden

<u>03-P048</u>: Self-assembled 3D-printed Janus scaffolds for the regeneration of the osteochondral interface

Sandra Camarero-Espinosa, Lorenzo Moroni

MERLN institute for technology-inspired regenerative medicine, Maastricht University, Maastricht, the Netherlands / Polyganics B.V., Rozenburglaan 15A, 9727 DL Groningen, the Netherlands

<u>03-P049</u>: Silk Elastin-like Co-Recombinamers bioactive hydrogel embedded with mature chondrocytes as injectable scaffolds for cartilage regeneration in an *Ex Vivo* culture platform

Filippo Cipriani, Melanie Krüger, Israel Gonzalez de Torre, Matilde Alonso, Linda Kock, José Carlos Rodriguez Cabello Technical Proteins Nanobiotechnology, S.L. Parque Científico Universidad de Valladolid, Spain

03-P050: COMPARATIVE STUDY OF C OMPOSITE MATERIAL FOR HYALINE CARTILAGE REGENERATION: DATA OF IN VIVO STUDY

Pavel Laktionov, Vera Chernonosova, Alena Stepanova, Alexander Gostev, Konstantin Kuznetsov, Tatyana Godovikova, Alla Zaidman, Andrey Karpenko, David Sergeevichev, Evgeny Pokushalov E. Meshalkin National medical research center of the Ministry of Health of the Russian Federation, Novosibirsk, Russia / Institute of Chemical Biology and Fundamental Medicine SB RAS, Novosibirsk, Russia

<u>03-P051:</u> A Comparative Study of Osteoconductivity by the Combination of Biphasic Calcium Phosphate Alloplast and Resorbable Barrier Membrane on Rat Calvarial Defect Model

Jong Chul Kim, Sang Dong Kim, Yu Sang Choi, Jin Young Park, Seung Hyun Lee, Jun Sik Kim, Rae Hyung Ryu, Seung-Kuk Bae, Yong-Ho Lee, Sang-Hyun An

Laboratory Animal Center, Daegu-Gyeongbuk Medical Innovation Foundation (DGMIF), Daegu, Korea

<u>O3-P052</u>: Development of cryopreserved cell-laden scaffold using a cell printing system supplemented with low-temperature processing method JaeYoon Lee, Minseong Kim, Gi Hoon Yang, WonJin Kim, JiUn Lee, YoungEun Choe, GeunHyung Kim

Department of Biomechatronic Engineering, Korea

03-P053: Application of 3D Bioprinter to Evaluate Tumor-Osteocyte Interactions

Hiroki Yokota, Andy Chen, Luqi Wang, Shengzhi Liu, Yue Wang, Bai-Yan Li

Department of Biomedical Engineering, Indiana University, USA

03-P054: Mechanical Stiffness of 3D Bioprinted hMSCs-laden Scaffolds Influences Cell Mineralization, Proliferation and Differentiation in a Static Bone Bioreactor

Jianhua Zhang, Jolanda R. Vetsch, Esther Wehrle, **Marina Rubert**, Ralph Müller

Institute for Biomechanics, ETH Zürich, Zürich, Switzerland

<u>03-P055:</u> Converging of melt electrowriting and extrusion-based bioprinting for cartilage tissue regeneration

Mylene de Ruijter, Alexandre Ribeiro, Inge Dokter, Miguel Castilho, Jos Malda

Department of Orthopedics, University Medical Center Utrecht, Utrecht University, the Netherlands

<u>03-P056:</u> 3D Bioprinting Spatial Gradients of VEGF to Enhance Vascularization for Bone Tissue Engineering

Fiona E Freeman, Jung-Youn Shin, Eben Alsberg, Daniel J Kelly Trinity Centre for Bioengineering, Trinity Biomedical Sciences Institute, Trinity College Dublin, Ireland. / Department of Mechanical and Manufacturing Engineering, School of Engineering, Trinity College Dublin, Ireland

03-P057: Biphase 3D Printing Scaffold coated with IL4 for Osteochondral Defect Regeneration

Jun Li, Zongyou Pan, Feifei Zhou, Yejun Hu, Shufang Zhang, Hongwei Ouyang

Dr.Li Dak Sum & Yip Yio Chin Center for Stem Cell and Regenerative Medicine,Department of Basic Medicine, Zhejiang University, Hangzhou,China

<u>03-P058:</u> Bioprinting of Fibrocartilage: Combining Photocrosslinkable Gelatin and Chondrocyte Micro-Aggregates

Lise De Moor, Mendy Minne, Chris Vercruysse, Sandra Van Vlierberghe, Peter Dubruel, Heidi Declercq Tissue Engineering and Biomaterials Group, Department of Human Structure and Repair, Faculty of Medicine and Health Sciences, Ghent University, Ghent, Belgium

<u>03-P059:</u> Development of smart NanoBiolnk for BioPrinting of Artificial Bone using iPS Cell Technology A STEP TOWARDS SUSTAINABILITY

Dhoolappa M, Prasad R.V, Lakshmishree K.T, Falguni Pati, Arun Shanbhag

VETERINARY COLLEGE SHIMOGA, India

<u>03-P060:</u> Biomimetic design strategy of 3D bioprinted tissue construct for craniofacial bone reconstruction

Sang Jin Lee, Carlos Kengla, James J Yoo, Anthony Atala Wake Forest Institute for Regenerative Medicine, Wake Forest School of Medicine, USA

<u>03-P061:</u> Nano cellulose, and its clinically approved parallel bacterial nano cellulose, as bioink for 3D bioprinting of cartilage

Lars Kölby, Peter Apelgren, **Karin Säljö**, Matteo Amoroso, Linnea Strid Orrhult, Erdem Karabulut, Héctor Martinez, Tetsuo Kondo, Paul Gatenholm

Department of Plastic Surgery, University of Gothenburg, Sahlgrenska University Hospital, Gothenburg, Sweden

<u>03-P062</u>: The physicochemical properties and cell behavior of biodegradable 3D-printed calcium silicate scaffolds

Yen-Hong Lin, Yi-Wen Chen, Ming-You Shie The Ph.D. program for Medical Engineering and Rehabilitation Science, China Medical University, Taichung, Taiwan / 3D Printing Medical Research Center, China Medical University Hospital, Taichung, Taiwan

<u>03-P063:</u> The cell-laden hydrogel/ dopamine-inspired calcium silicate complex hierarchical porous scaffold fabricated by 3D bioprinting Ming-You Shie, Yi-Wen Chen

3D Printing Medical Research Center, China Medical University Hospital, Taiwan / School of Dentistry, China Medical University, Taichung, Taiwan

<u>03-P064</u>: The fabrication of strontium-doped calcium silicate 3D scaffold for bone regeneration

Peggy H.P. Sung, Ssu-Yin Yen, Ming-You Shie School of Medicine, China Medical University, Taichung, Taiwan / 3D Printing Medical Research Center, China Medical University Hospital, Taichung, Taiwan

<u>03-P065</u>: A combinational 3D printed gradient construct of polycaprolactone and hyaluronic acid for osteochondral tissue engineering

Omar M Wyman, Adam H Biedrzycki, Mike Puccio, Michael S Detamore

Department of Biomedical Engineering, University of Oklahoma, Norman, OK, USA <u>03-P066:</u> Fabrication of a chondrogenic-active hydrogel for *in situ* 3D bioprinting

Serena Duchi, Lilith Caballero Aguilar, Carmine Onofrillo, Cathal O'Connell, Peter Choong, Simon Moulton, Claudia Di Bella Department of Surgery, St Vincent's Hospital, University of Melbourne, VIC, Australia

<u>03-P067:</u> Integration of hydrogel-based cartilage constructs on ceramic subchondral bone substitutes combining multiple 3D printing technologies

Paweena Diloksumpan, Miguel Castilho, Tina Vermonden, P. René van Weeren, Jos Malda, **Riccardo Levato**

Department of Equine Sciences, Faculty of Veterinary Medicine, Utrecht University, the Netherlands

<u>03-P068</u>: Osteoinductive composite implant made by stereolithography for orbital floor fracture repair

David Eglin, Mike Geven, Tanja Schmid, Dirk Grijpma, Ruud R.M. Bos, Geoff R. Richards, Mauro Alini, Olivier Guillaume AO Research Institute Davos, CH, Switzerland

AC Research institute Davos, CH, Switzenand

<u>03-P069:</u> 3D printing of composite scaffolds functionalized with ECM components for bone defect repair.

Fiona E Freeman, Warren L Grayson, Daniel J Kelly Trinity Centre for Bioengineering, Trinity Biomedical Sciences Institute, Trinity College Dublin, Ireland. / Department of Mechanical and Manufacturing Engineering, School of Engineering, Trinity College Dublin, Ireland

<u>03-P070:</u> Clinical Relevant Bioinks for Enhanced Cartilaginous Matrix Deposition

Benjamin Kessel, Marcy Zenobi-Wong

Tissue Engineering + Biofabrication Lab, Swiss Federal Institute of Technology in Zurich, Switzerland

<u>03-P071:</u> 3D Differentiation of human Adipose-derived stem cells/ hTERT in Methacrylate Gelatin Hydrogels with Different Stiffness

Sara Zigon-Branc, Marica Markovic, Jasper Van Hoorick, Orestis Andriotis, Elise Zerobin, Stefan Baudis, Philipp Thurner, Peter Dubruel, Sandra Van Vlierberghe, Aleksandr Ovsianikov Institute of Materials Science and Technology, Technische Universität Wien, Getreidemarkt 9, Vienna, Austria / Austrian Cluster for Tissue Regeneration, Austria

<u>03-P072:</u> Reconstruction of Large bone defect in sheep with customized 3D printed calcium phosphate scaffolds

Luciano Vidal, Stephanie Krissian, Meadhbh Brennan, Yassine Maazouz, Maria Pau Ginebra, Julien De lima, Valérie Trichet, Philippe Rosset, Nathalie Chevallier, **Pierre Layrolle**

Inserm UMR 1238, PHY-OS, Laboratory of Bone⁵Sarcomas and Remodelling of Calcified Tissues, Faculty of Medicine, University of Nantes, Nantes, France

<u>03-P073:</u> 3D Bioprinted hydrogel model incorporating β -tricalcium phosphate for calcified cartilage tissue engineering

Alicja Kosik-Koziol, Anna Mroz, Marco Constantini, Andrea Barbetta, Ewa Kijenska, Joanna Idaszek, Marcin Heljak, Jakub Jaroszewicz, Krisztina Szoke, Jan Brinchmann, Wojciech Swieszkowski The Faculty of Materials Science and Engineering, Warsaw University of Technology, Warsaw. Poland

<u>03-P074:</u> Fabricating an Extracellular Matrix Analogue Using Natural Polymers for Cartilage Tissue Engineering Applications

Runa Begum, Bo Su, Fabrizio Scarpa, Wael Kafienah School of Cellular and Molecular Medicine, Faculty of Biomedical Sciences, University of Bristol, Bristol, UK

<u>03-P075</u>: Bioceramics Bilayer Scaffolds for Osteochondral Defect Repair

Ssu Yin Yen, Yu Fang Shen, Yi Wen Chen, Ming You Shie 3D Printing Medical Research Center, China Medical University Hospital, Taichung, Taiwan

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<u>03-P076:</u> The Chondrogenic Potential of Nanocellulose-Alginate in Combination with Nasoseptal Chondrocytes for Tissue Engineering Purposes

Ayesha Al-Sabah, Zita Jessop, Irina Neves Simoes, Stephanie Burnell, Iain Whitaker

Reconstructive Surgery and Regenerative Medicine Group (ReconRegen) Research group, Institute of Life Sciences, Swansea University Medical School, Swansea, UK

<u>03-P077:</u> Decellularized Hyaline Cartilage powder and Autologous adipose-derived stromal vascular fraction (SVF) for Articular cartilage regeneration

Bo Mi Nam, Jong Seung Lee ROKIT Inc. Seoul. Korea

O3-PO78: Advanced capability of BMP-2-loaded mesoporous calcium silicate scaffolds for bone regeneration

YiWen Chen, Ming-You Shie

Graduate Institute of Biomedical Sciences, China Medical University, Taichung, Taiwan / 3D Printing Research Center, Asia University, Taichung, Taiwan

03-P079: 3D Printed Bioinspired Scaffold Architecture for Meniscus Regeneration

Caroline A Murphy, Gráinne M Cunniffe, Atul K Garg, Maurice N Collins

Stokes Laboratories, Bernal Institute, School of Engineering, University of Limerick, Ireland

<u>03-P080:</u> 3D Hybrid Multilayer Scaffolds for Cartilage Tissue Engineering

Yu-Fang Shen, Wei-Huang Wang, Wei-Che Hong, Ming-Yi Lin, Wan-Ching Hong, Yu-Hao Lai, Chun-Wei Liu, **Ming-You Shie**, Yi-Wen Chen

Department of Bioinformatics and Medical Engineering, Asia University, Taichung City, Taiwan / 3D Printing Medical Research Institute, Asia University, Taichung City, Taiwan

<u>03-P081:</u> 3D printing of high strength hydrogel scaffolds for bone/ cartilage repair

Changshun Ruan, Xinyun Zhai, Fei Gao, Wenguang Liu School of Materials Science and Engineering, Tianjin Key Laboratory of Composite and Functional Materials, Tianjin University, Tianjin, China

<u>03-P082:</u> Pure titanium custom implant for the mandibular continuity defect

Seong-Gon Kim

Department of OMFS, Gangneung-Wonju National University, Gangneung, Korea

<u>03-P083:</u> A Novel Method for Determining Cellular Morphology Within Living Cartilage Using Confocal Microscopy

Choi Kwan Kwan, Scott Finlay, Bahaa Seedhom, David Wood, Jennifer Kirkham

Department of Oral Biology, School of Dentistry, University of Leeds, Leeds, UK / Institute of Medical and Biological Engineering, University of Leeds, Leeds, UK

<u>03-P084:</u> Reverse Engineering Methods to Study Osteochondral Regulatory Networks

Raphaelle Lesage, Johan Kerkhofs, Liesbet Geris Prometheus, Division of Skeletal Tissue Engineering, KU Leuven, Belgium / Biomechanics Section, KU Leuven, Belgium

<u>03-P085:</u> Biomechanical Response of Regenerated Intervertebral Disc using Genipin and Platelet-Rich Plasma Therapies: Experimental and Computational Studies

Mohammad Nikkhoo, Ya-Wen Kuo, Yu-Chun Hsu, Jaw-Lin Wang Department of Biomedical Engineering, Science and Research Branch, Islamic Azad University, Tehran, Iran

<u>03-P086</u>: Frictional drag dissipation promotes chondrogenesis in mechanically stimulated cell-seeded scaffolds.

Naser Nasrollahzadeh, Lee Ann Applegate, Dominique P. Pioletti Laboratory of Biomechanical Orthopedics (LBO), Institute of Bioengineering, EPFL, Lausanne, Switzerland

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<u>03-P087</u>: Biomechanical Evaluation of Decellularized Cartilage Scaffold for Tissue Engineering Using Two Different Protocols

Mohammad Nikkhoo, Sara Baghermanesh, Mostafa Rostami Department of Biomedical Engineering, Science and Research Branch, Islamic Azad University, Tehran, Iran

<u>03-P088</u>: Numerical feasibility study of an adaptive torsional testing setup to analyse mechanical properties for future tissue engineering applications

Jan J. Lang, Peter Foehr, Constantin von Deimling, Hannah Hauger, Steven Deile, Dirk Barnewitz, Rainer H. Burgkart, Martijn van Griensven Technical University of Munich, Klinikum rechts der Isar, Department of Trauma Surgery, Munich, Germany / Technical University of Munich, Klinikum rechts der Isar, Department of Orthopaedics and Sport Orthopaedics, Munich, Germany

<u>03-P089:</u> Nanovibrational stimulation (Nanokicking) for 3D osteogenesis in biphasic scaffolds; compositing of freeze dried collagen sponge-hydroxyapatite in hydrogels for bone tissue engineering

Wich Orapiriyakul, Penelope M. Tsimbouri, Peter Childs, R.M. Dominic Meek, Richard O.C. Oreffo, K. Elizabeth Tanner, Manuel Salmerón Sánchez, Stuart Reid, Matthew J Dalby

Institute of Molecular, Cell and Systems Biology, University of Glasgow, Glasgow, UK

<u>03-P090:</u> Osteogenesis of embryonic stem cells by nanokicking

Mathew Hollingworth, Morgan Alexander, Matthew Dalby, Lee Buttery Regenerative Medicine and Cellular Therapies, School of Pharmacy, University of Nottingham, Nottingham, UK

<u>03-P091:</u> Maintaining zonal chondrocyte phenotype and overcoming chondrocytes de-differentiation in dynamic microcarrier culture

Ching Ann Tee, Zheng Yang, Lu Yin, Yingnan Wu, Jongyoon Han, Eng Hin Lee

Department of Orthopaedic Surgery, National University of Singapore, Singapore / BioSystems and Micromechanics Interdisciplinary Research Group, Singapore-MIT Alliance in Research and Technology, Singapore

<u>03-P092:</u> Buccal fat pad as a potential source of stem cells for bone regeneration: an *in vitro* study

Nasim Salehi Nik, Nazanin Ghasemi, **Jeroen Rouwkema**, Arash Khojasteh

Department of Biomechanical Engineering, Faculty of Engineering Technology, University of Twente, Enschede, The Netherlands / Department of Tissue Engineering, School ofAdvanced Technologies in Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran

<u>03-P093:</u> A Novel Dynamic in Vitro 2.5D Cell Culture Model for Bone Tissue Engineering

Ruikang Xue, Sarah Cartmell School of Materials, University of Manchester, Manchester, UK

03-P094: A novel electron emission-based cell culture device promotes cell proliferation and differentiation of pre-osteoblastic MC3T3-E1cells

Fumiaki Sugimori, Hiroyuki Hirakawa, Ai Tsutsui, Tadashi Iwamatsu, Toshimasa Uemura, Kenichi Morita, Takashi Tsumura

Advanced Tech. Dev. Unit, Business Solutions BU, SHARP CORPORATION, Nara, Japan

<u>O3-P095</u>: Co-culture of Umbilical Cord derived Mesenchymal Stem Cells (UCMSCs) and Bone Marrow derived Mesenchymal Stem Cells (BMMSCs) /Chondrocytes improved the Osteogenic/Chondrogenic differentiation

Kyoko Baba, Yasuharu Yamazaki, Yumiko Sone, Yoshika Sugimoto, Kazuno Moriyama, Takayuki Sugimoto, Kenichi Kumazawa, Akira Takeda

Department of Plastic and Aesthetic Surgery, School of Medicine, Kitasato University, Kanagawa, Japan / Department of Plastic Surgery, Kitasato University Medical Center, Japan

03-P096: Identifying metabolic alterations during chondrogenic differentiation of periosteal cells cultured in spheroids

Niki Loverdou, Gabriella Nilsson Hall, Geert Carmeliet, Ioannis Papantoniou, Liesbet Geris

Biomechanics Section. KULeuven, Belgium / Prometheus, Division of Skeletal Tissue Engineering, KULeuven, Belgium / Biomechanics Research Unit, University of Liège, Belgium

<u>03-P097:</u> Nondestructive Raman Spectroscopy-Based Quality Controls for Tissue Engineered Cartilage

Laura Power, Claudia Fasolato, Andrea Barbero, Ilaria Zardo, Ivan Martin, David Wendt

Department of Biomedical Engineering, University Hospital Basel, Switzerland

<u>03-P098</u>: Characterization and application of size-based spiral microchannel sorted zonal chondrocytes for articular cartilage regeneration

Zheng Yang, Lu Yin, Yingnan Wu, Ching Ann Tee, Jongyoon Han, Eng Hin Lee

Tissue Engineering Program, Life Sciences Institute, National University of Singapore, Singapore / Department of Orthopaedic Surgery, National University of Singapore, Singapore

<u>03-P099:</u> Development study for quality assessment of cell therapy including scaffold

Se Hwan Hwang, Jae Hyung Hwang, Dong Chang Lee, Jung Yeon Lim, Mi Hyun Lim, Sung Won Kim

Department of Otolaryngology-Head and Neck Surgery, The Catholic University of Korea, Seoul, Korea

<u>03-P100:</u> Identification of altered gene expression in the expansion culture of polydactyly-derived chondrocytes

Eriko Toyoda, Masato Sato, Miki Maehara, Takumi Takahashi, Takehiko Takagi, Tomomi Kotoku, Chikako Sato, Ken Nonaka, Ryo Matoba, Hidenori Akutsu, Akihiko Umezawa, Tadashi Akamatsu, Masahiko Watanabe

Surgical Science, Tokai University School of Medicine, Kanagawa, Japan

03-P101: Best fraction of isolated pig immature alveolar osteoblasts for use in periodontal bone defect regeneration therapy

Mary Muthoni Njuguna, Venkata Suresh Venkataiah, Tatsuya Hasegawa, Keisuke Handa, Masahiro Saito Department of Restorative Dentistry, Tohoku University Graduate school of Dentistry, Sendai, Japan

03-P102: Down-Regulation of Transglutaminase 2 Stimulates Redifferentiation of Dedifferentiated Chondrocytes through Enhancing Glucose Metabolism

Kyoung-Won Ko, Bogyu Choi, Haesun Yoon, Eun-Mi Park, In-Bo Han, Soo-Hong Lee

Department of Biomedical Science, College of Life Science, CHA university, Seongnamsi, Gyeonggi-do, Korea

03-P103: Microarray Gene Expression Analysis of Polydactyly-Derived Chondrocyte Sheets and Adult Chondrocyte Sheets

Takumi Takahashi, Masato Sato, Takehiko Takagi, Miki Maehara, Ken Nonaka, Ryo Matoba, Tadashi Akamatsu

Department óf Orthopaedic Surgery, Surgical Science, Tokai University School of Medicine, Japan

<u>03-P104:</u> Challenges of Commercializing Autologous Chondrocyte Sheets Used in Regenerative Medicine

Tomomi Kotoku, Chikako Sato, Takumi Takahashi, Daichi Takizawa, Yasuyuki Sogo, Miki Maehara, Eri Okada, Ayako Watanabe, Saori Shirasuna, Naoki Takatori, Yuka Kawaguchi, Eriko Toyoda, Setsuko Hashimoto, Masato Sato CellSeed Inc. Tokyo, Japan

03-P105: Bone Tissue Engineering using a Novel Multi-Layered Cell Sheet Technology

Elizabeth Rita Kapasa, H Takahashi, T Shimizu, T Okano, M Yamato, X Jia, P V Giannoudis, P V Hatton, X B Yang School of Dentistry, University of Leeds, UK / Institute of Medical and Biological

School of Dentistry, University of Leeds, UK / Institute of Medical and Biological Engineering, School of Mechanical Engineering, University of Leeds, UK

<u>03-P106:</u> Glycosaminoglycan biomimicry enhances human mesenchymal stem cell repair of osteochondral defects

Simon Cool, Ling Ling, Ren Xia Fei, Victor Nurcombe, James H Hui Institute of Medical Biology, Agency for Science, Technology and Research, Singapore / Department of Orthopaedic Surgery, Yong Loo Lin School of Medicine, National University of Singapore, Singapore

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03-P107: The role of exogenous haematopoietic progenitor cells in osteochondral repair following microfracture in a large animal model

Frances Henson, Helen Lydon, Mark Birch, Andrew McCaskie University of Cambridge, UK

<u>03-P108:</u> Endochondral Bone Tissue Engineering Using

Chondrogenically Differentiated Human Induced Pluripotent Stem Cells Michio Arakura, Sang Yang Lee, Tomoaki Fukui, Keisuke Oe, Shunsuke Takahara, Yu Kuroiwa, Yohei Kumabe, Takahiro Oda, Ryosuke Kuroda, Takahiro Niikura

Department of Orthopaedic Surgery, Kobe University Graduate School of Medicine, Kobe, Japan

<u>03-P109</u>: Repair of focal articular cartilage defect with human iPSCderived cartilage in a mini-pig model treated with immunosuppressor

Akihiro Yamashita, Shinichi Kuriyama, Tomohito Kobayashi, Yuki Okutani, Miho Morioka, Nobuyuki Shima, Shuichi Matsuda, Noriyuki Tsumaki

Department of Cell Growth and Differentiation, CiRA, Kyoto University, Kyoto, Japan

03-P110: Osteoclastic Initiation of Osteogenic Differentiation and Bone Formation

Jeroen van den Beucken, Femke van de Tillaart, Jinling Ma, Yang Zhang

Dept. Biomaterials, Radboudumc, Nijmegen, the Netherlands

03-P111: Translation of Remote Control Regenerative Technologies for Bone Repair

Hareklea Markides, Jane S McLaren, Neil D Telling, Noura Alom, E'atelaf A Al-Mutheffer, Richard O.C. Oreffo, Andrew Zannettino, Brigitte E Scammell, Lisa J White, Alicia J El Haj Keele University, UK

03-P113: THE EFFECT OF STICOPHUS CHLORONOTUS AQUEOUS EXTRACT ON HUMAN OSTEOARTHRITIS ARTICULAR CHONDROCYTES in THREE-DIMENSIONAL (3D) COLLAGEN TYPE 1 hydrogel in vitro

Mohd Heikal Mohd Yunus, Ahmad Nazrun Shuid, Mohd Fauzi Busra, Chua Kien Hui, Norzana Abd Ghafar, Mohd Rizal Rani Tissue Engineering Centre, National University Medical Centre Malaysia / Department of Physiology Universiti Kebangsaan Malaysia Medical Centre, Kuala Lumpur, Malaysia

<u>03-P114:</u> Quantitating the expression of the surface marker tissue non-specific alkaline phosphatase (TNAP) on human dental pulp stromal cells

Aaron Zammit-Wheeler, Jennifer Kirkham, Christoph Wälti, Michael McPherson

School of Dentistry, Oral Biology, University of Leeds, Leeds, UK

03-P115: Bone marrow harvesting technique influences functional heterogeneity of mesenchymal stem/stromal cells and cartilage regeneration

Kavitha Sivasubramaniyan, Pieter K Bos, Abhishek Harichandan, Diego L Santos, Dragos C Ilas, Peter de Zwart, Wendy J.L.M. Koevoet, Heather Owston, Hans-Jörg Bühring, Elena Jones, Gerjo J.V.M. Osch Department of Orthopaedics, Erasmus Medical Center, Rotterdam, the Netherlands

<u>O3-P116:</u> 3D versus 2D culture: Tissue-like culture conditions enable the detection of individualized cartilage-specific differentiation possibilities Ursula Anderer, Frank Martin, Mario Lehmann, Ulrich Sack Department of Cell Biology and Tissue Engineering, Institute of Biotechnology, Brandenburg University of Technology Cottbus-Senftenberg, Senftenberg, Germany

<u>03-P117:</u> Inferior In Vivo Osteogenesis and Superior Angiogeneis of Human Adipose-Derived Stromal Cells Compared with Bone Marrow - Derived Stromal Cells Cultured in Xeno - Free Conditions

Meadhbh Brennan, Audrey Renaud, Fabien Guilloton, Miryam Mebarki, Valerie Trichet, Luc Sensebé, Frederic Deschaseaux, Nathalie Chevallier, Pierre Layrolle

National Institute of Health and Medical Research (INSERM) UMR 1238, PHYOS, Faculty of Medicine, University of Nantes, France

<u>03-P118:</u> Microfluidic label-free selection of MSC subpopulation during culture expansion extends the chondrogenic potential *in vitro* and the Mechanism about the Performance of the Selected MSCs

Wu Yingnan, Yin Lu, Yang Zheng, Tee Ching Ann , Vinitha Denslin, Lee Eng Hin, Jongyoon Han

National University of Singpaore Tissue Engineering Program, Life Science institute., National University of Singapore, Singapore / Orthopedic Surgery, YLL School fo Medicine, National university of Singapore, Singapore

<u>03-P119:</u> Nasal chondrocytes are potential autologous cell-transplant candidates for treating degenerative disc disease

Max Hans-Peter Gay, Arne Mehrkens, Andrea Barbeo, Ivan Martin, Stefan Schaeren

Department of Spinal Surgery, University Hospital Basel, Basel, Switzerland / Department of Biomedicine, University Hospital Basel, Basel, Switzerland

<u>03-P120:</u> Interchange in culture supplementation from human serum to platelet-rich plasma achieves both proliferation and matrix turnover of chondrocytes

Vivek Jeyakumar, Eugenia Niculescu Morza, Christoph Bauer, Daniela Kern, Zsombor Lacza, Stefan Nehrer

Center for Regenerative Medicine and Orthopedics, Danube University Krems, Austria

03-P121: Chondrogenic Stimulation in Mesenchymal Stem Cells Using Scaffold -based Sustained Release of Platelet-rich Plasma

Behzad Bolandi, Rana Imani, Shahin Bonakdar, Hossein Fakhrzadeh Department of Biomedical Engineering, Amirkabir University of Technology(Polytechnic of Tehran), Tehran, Iran

03-P122: Temporal Effect of Pulsed Electro-Magnetic Field on Mesenchymal Stem Cell Chondrogenesis

Dinesh A Parate, Alfredo Franco-Obregón, Jürg Fröhlich, James HP Hui, **Zheng Yang**

Department of Orthopedic Surgery, National University of Singapore, Singapore

03-P124: Dynamic Culture of Mesenchymal Stem Cell on Gelatin Microsphere Enhance Chondrogenic Properties

Shamsul Sulaiman, Fauzi Mh Busra, Ng Min Hwei, Tabata Yasuhiko, Hiraoka Yosuke, Rizal Abdul Rani , Nor Hamdan Mohamad Yahaya, Ruszymah Idrus, Shiplu Roy Chowdhury

Tissué Engineering Centre, Faculty of Medicine, Universiti Kebangsaan Malaysia, Clinical Block, Jalan Yaacob Latiff, Cheras, Kuala Lumpur, Malaysia

03-P125: Porcine Nasoseptal Chondrocytes in Silk-Based Scaffolds for *In Vitro* Cartilage Tissue Engineering

Xuan Hao Xuan Tan, James Cho Hong Goh National University of Singapore, Singapore

<u>03-P126</u>: Identification of micro-RNA associated with the chondrogenic ability of human bone marrow mesenchymal stem cells (BMSCs)

Hisashi Mera, Osamu Ishibashi, Shigeyuki Wakitani Department of Orthopedic Surgery, Uonuma Institute of community Medicine, Niigata University Medical and Dental Hospital, Niigata, Japan

<u>03-P127:</u> Hesperidin improves antioxidant capacity in hydrogen peroxide-stimulated chondrocytes

Chang-Chin Wu, Yi-Ru Chen, Ling Yeh, Kai-Chiang Yang Orthopedic Surgery, En Chu Kong Hospital, New Taipei city, Taiwan / Department of Orthopedics, National Taiwan University Hospital, College of Medicine, National Taiwan University, Taipei, Taiwan / Department of Biomedical Engineering, Yuanpei University of medical Technology, Hsinchu, Taiwan

<u>03-P128:</u> Chondrogenic and osteogenic priming of umbilical cord blood MSC induces bone formation *in vivo*: a comparative study with bone marrow MSC in subcutis sites in nude mice

Meadhbh Brennan, Mario Barilani, Audrey Renaud, Luciano Vidal, Cristiana Lavazza, Lorenza Lazzari, Rosaria Giordano, Pierre Layrolle Harvard School of Engineering and Applied Sciences, Harvard University, Cambridge, USA / National Institute of Health and Medical Research (INSERM) UMR 1238, PHYOS, Faculty of Medicine, University of Nantes, France

<u>O3-P129:</u> Photofunctionalized titanium guided bone regeneration (GBR) around dental implants

Makoto Hirota, Toshinori Iwai, Junichi Baba, Takashi Ohya, Masaki lida, Mitomu Kioi, Kenji Mitsudo

Department of Oral and Maxillofacial Surgery, Yokohama City University School of Medicine, Yokohama, Japan

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<u>03-P130:</u> Bone-targeting chitosan-PLGA nanoparticles for alendronate delivery

Shen-Mao Chen, Lingling Zhao, Alister J. Hart, Chaozong Liu Institute of Orthopaedic and Musculoskeletal Science, Division of Surgery and Interventional Science, University College London and the Royal National Orthopaedic Hospital, Stanmore, UK / Department of Orthopaedic Surgery, Tri-Service General Hospital, National Defense Medical Center, Taipei, Taiwan

03-P131: FORMATION OF HUMAN ARTICULAR CARTILAGE FROM IN VITRO TO IN VIVO SHORT-TERM ECTOPIC IMPLANTATION MODEL: Biochemical and Biomechanical Analyses

Munirah Sha'ban, Norhamiza Mohamad Sukri, Muhammad Aa'zamuddin Ahmad Radzi, Rozlin Abdul Rahman, Ahmad Hafiz Zulkifly, Abdurezak Abdulahi Hashi, Azran Azhim Department of Physical Rehabilitation Sciences, Kulliyyah (Faculty) of Allied Health Sciences, International Islamic University Malaysia (IIUM), Malaysia / Department of Biomedical Science, Kulliyyah (Faculty) of Allied Health Sciences, International Islamic University Malaysia (IIUM), Malaysia

03-P132: Involvement of Estrogen-regulated MicroRNAs in Osteogenesis of Bone Marrow Mesenchymal Stem Cells

Guanqi Liu, Runheng Liu, Zetao Chen, Hong Ai Guanghua School of Stomatology, Hospital of Stomatology, Sun Yat-sen University and Guangdong Provincial Key Laboratory of Stomatology, Guangzhou, China / Department of Stomatology, The Third Affiliated Hospital of Sun Yat-sen University, Guangzhou, China

<u>03-P133:</u> Genetic modification of human bone marrow aspirates via delivery of rAAV vectors coated on pNaSS-grafted poly (ε -caprolactone) scaffolds

Jagadeesh Kumar Venkatesan, Céline Falentin-Daudré, Amélie Leroux, Ana Rey-Rico, Janina Frisch, Henning Madry, Veronique Migonney, Magali Cucchiarini

Center of Experimental Orthopaedics, Saarland University Medical Center, Saarland University, Homburg/Saar, Germany

<u>03-P134:</u> Formation of In Vitro Cartilage Construct using SOX9 and TERT Genes Transfected Chondrocytes Seeded in Poly(Lactic-co-Glycolic Acid) (PLGA) with and without Fibrin

Noorhidayah Md Nazir, Ahmad Hafiz Zulkifly, Kamarul Ariffin Khalid, Ismail Zainol, Zaitunnatakhin Zamli, Munirah Sha'ban Department of Biomedical Science, Kulliyyah of Allied Health Sciences, International Islamic University Malaysia (IIUM), Jalan Sultan Ahmad Shah, Bandar Indera Mahkota, Kuantan, Pahang Darul Makmur, Malaysia

<u>03-P135:</u> Biological Effects of FGF-2 and IGF-I Co-Overexpression in Human Bone Marrow-Derived Mesenchymal Stem Cells via rAAV Vector Administration

Jagadeesh Kumar Venkatesan, Teresa Böhm, Ana Rey Rico, Gertrud Schmitt, Henning Madry, Magali Cucchiarini

Center of Experimental Orthopaedics,Saarland University Medical Center,Saarland University,Homburg/Saar, Germany

03-P136: rAAV SOX9 Gene Transfer Stimulates the Chondrogenic Differentiation Activities in Human Peripheral Blood Aspirates

Jagadeesh Kumar Venkatesan, Patrick Orth, Ana Rey-Rico, Gertrud Schmitt, Henning Madry, Magali Cucchiarini Center of Experimental Orthopaedics, Saarland University Medical Center, Saarland University, Homburg/Saar, Germany

<u>03-P137:</u> *In Vitro and In Vivo* Evaluation of Plasmid DNA-Loaded Polycaprolactone/Hyaluronic Acid Hybrid Microspheres for Bone Regeneration

Tae Ho Kim, Ho Young Kim, Se Heang Oh, Jin HO Lee Department of Advanced Materials and Chemical Engineering, Hannam University, Daejeon, Korea

03-P138: Development of A Bioactive Meniscus Implant Using 3D Bioprinting

Fang Geng, Xin Tang, Zhenhua Yuan Medtronic Greater China R&D Center, China

03-P139: Iron oxide nanoparticles as a tool for MRI tracking of nasal chondrocytes

Maja Pusic, Inga Marijanovic, Sinisa Skokic, Daniel Horak, Srecko Gajovic, Mirta Vuckovic, Petar Kostesic, Drazen Maticic, Drazen Vnuk, Alan Ivkovic

Department of Biology, Division of Molecular Biology, Faculty of Science, University of Zagreb, Zagreb, Croatia

<u>03-P140:</u> Kartogenin-Incorporated Multifunctional Hyaluronic Acid Coated Ultra-Small Ceria Nanoparticles Used for Osteoarthritis Treatment

Wei-Nan Zeng, Jun-Li Liu, Liu Yang Center for Joint Surgery, Southwest Hospital, Third Military Medical University, Chongqing, China

03-P141: Therapeutic ion loaded mesoporous nanoparticles for treating biofilms in chronic bone and skin wounds

Thomas Edward Paterson, Kai Zheng, Preethi Balasubramanian, Anthony J Bullock, Alessandra Bari, Sonia Fiorilli, Dimitra Giasafaki, Theodore Steriotis, Georgia Charalambopoulou, Aldo R Boccaccini, Chiara Vitale-Brovarone, Sheila MacNeil, Joey Shepherd School of Clinical Dentistry, University of Sheffield, Sheffield, UK

<u>03-P142:</u> New Generation Spermine Based Polyurethane-Urea Derived High Strength Osteoconductive Scaffold

Sanjoy Kumar Ghorai, Somnath Maji, Bhuvaneshwaran Subramanian, Trina Roy, Santanu Chattopadhyay

Rubber Technology Centre, Indian Institute of Technology Kharagpur, West Bengal, India

03-P143: Hydrothermally treated bioactive porous Ti6Al4V for accelerated femoral defects healing in rabbit

Kausik Kapat, Priti Prasanna Maiti, Arun Prabhu Rameshbabu, Pavan Kumar Srivas, **Santanu Dhara**

Indian Institute of Technology Kharagpur, Kharagpur, India

<u>03-P144:</u> Development of Chondrocyte-seeded magnetic gelatin nanocarrier for cartilage repair

Yung-Gi Chen, Ming-Wei Lee, Ling-Chun Chen, Shan-Wei Yang, Chin-Yi Yang, Shwu-Jen Chang

Department of Biomedical Engineering, I-Shou University, Taiwan

<u>03-P145</u>: Antibacterial 3D printed scaffolds for bone tissue engineering

Maria Chatzinikolaidou, Anthie Georgopoulou, Marios Pantazopoulos, Alexander Tsouknidas, Nikolaos Michailidis Department of Materials Science and Technology, University of Crete, Heraklion, Greece / Institute of Electronic Structure and Laser, FORTH, Heraklion, Greece

<u>03-P146:</u> Deciphering the Interactions of Magnetic Iron-doped Hydroxyapatite Nanoparticles with Bone Cells

Monica Montesi, Silvia Panseri, Alessio Adamiano, Samuele Maria Dozio, Monica Sandri, Anna Tampieri

Institute of Science and Technology for Ceramics, National Research Council of Italy, Italy

03-P147: Bioinspired seeding of biomaterials using stem cell micro-

aggregates improves cartilage formation in a growth factor-free manner Jeroen Leijten, Johanna Bolander, Liliana Teixeira, Wei Ji, Frank Luyten

Department of Developmental BioEngineering, University of Twente, Enschede, the Netherlands / Prometheus, Division of Skeletal Tissue Engineering, KU Leuven, Leuven, Belgium

03-P148: Design of a 3D Organotypic Model to Study Monocyte Extravasation to the Osteoarthritic Joint using a Combined Computational/Experimental Approach

Silvia Lopa, Carlotta Mondadori, Roberta Visone, Alberto Redaelli, Marco Rasponi, Matteo Moretti

Cell and Tissue Engineering Laboratory, IRCCS Galeazzi Orthopaedic Institute, Italy

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<u>03-P149</u>: A Human Bone/Bone-Marrow-on-a-Chip Approach for in vitro Toxicity Testing of Wear and Corrosion Products from Metallic Implants

Janosch Schoon, Melanie Ort, Christine Consentius, Taimoor H. Qazi, Annika Winter, Uwe Marx, Anastasia Rakow, Carsten Perka, Roland Lauster, Sven Geissler, Georg N. Duda

Julius Wolff Institute, Charité-Universitätsmedizin Berlin, Berlin, Germany / Berlin - Brandenburg Center & School for Regenerative Therapies, Charité-Universitätsmedizin Berlin, Berlin, Germany

03-P150: Development and Assessment of Microfluidic Platform for 3D Bone Cell Culture and Drug Evaluation

Hossein Bahmaee, Gwendolen C Reilly, Cecile M Perrault, Frederik Claeyssens

Department of Materials Science and Engineering, University of Sheffield, UK / INSIGNEO Institute of in-silico Medicine, University of Sheffield, UK

03-P151: A 3D mechanically stimulated articular joint-on-chip for osteoarthritis modeling

Giovanni Stefano Ugolini, Federica Costa, **Paola Occhetta**, Andrea Mainardi, Martin Ehrbar, Andrea Barbero, Marco Rasponi Department of Electronics, Information and Bioengineering, Politecnico di Milano, Milan, Italy

<u>03-P152:</u> Microfluidic Vascularized Bone Tissue Models with Hydroxyapatite-Incorporated Extracellular Matrix

Sunho Park, Norhana Jusoh, Dohyeon Lee, Woochan Kim, Daun Kim, Sungmin Park, Sujin Kim, Noo Li Jeon, Jangho Kim

Department of Rural and Biosystems Engineering, Chonnam National University, Korea 03-P153: Heparinized alpha-tricalcium phosphate porous scaffolds for

03-P153: Reparinized atpha-tricatclum phosphate porous scattolds for bone regeneration with/without bFGF modification in rat and canine model

Tetsuji Yamaoka, Yoshihiro Takeda, Yoshitomo Honda, Yihua Liu, Shunsuke Baba, Yoshiya Hashimoto

National Cerebral and Cardiovascular Center Research Institute, Japan

<u>03-P154:</u> OHA- COL II biomimetic gel combined with autologous concentrated bone marrow cell for cartilage defect repair of minipig

Jun-Li Liu, Wei-Nan Zeng, Fu-You Wang, Liu Yang Center for Joint Surgery, Southwest Hospital, Third Military Medical University (Army Medical University), Chongqing, China / Department of orthopaedics, Chongqing General Hospital, Chongqing, China

03-P155: SmartCaP: A Next Generation Pro-angiogenic Fibrin based Bone Void Filler

Nupur Kohli, Vaibhav Sharma, Alodia Orera, Nazanin Owji, Jonathan Knowles, Russell Bailey, Martyn Snow, Gordon Blunn, Elena García-Gareta

Regenerative Biomaterials Group, RAFT Institute, Mount Vernon Hospital, Northwood, UK

<u>03-P156:</u> Periodic architectures for bone scaffolds: an evaluation of mechanical properties and cell response

Dvina Valainis, Patrick Dondl, Peter Föhr, Martijn van Griensven, Patrina S.P. Poh

Experimental Trauma Surgery, Klinikum rechts der Isar, Technical University of Munich, Germany

03-P157: Decellularized-demineralized osteochondral allografts testing on rabbit model. Preliminary report

Viorel Nacu, Vitalie Cobzac, Mariana Jian, liliana Verestiuc Laboratory of Tissue Engineering an Cells Cultures, State University of Medicine and Pharmacy Nicolae Testemitanu, Moldova

03-P158: New Freeze-Dried Bone Regenerative Material consisting of Octacalcium Phosphate Collagen and Teriparatide

Shinji Kamakura, Atsushi Iwai, Fumihiko Kajii, Hidenori Tanaka, Kazuo Sasaki, Keiko Matsui, Tadashi Kawai

Bone Regenerative Engineering Laboratory, Graduate School of Biomedical Engineering, Tohoku University, Sendai, Japan

<u>03-P159:</u> Biomimetic microporous poly(lactide-co-trimethylene carbonate) scaffolds for human bone marrow stem cells

Mohammed Ahmed Yassin, Tiziana Fuoco, Samih Mohamed-Ahmed, Kamal Mustafa, Anna Finne-Wistrand

KTH, Royal Institute of Technology, Fibre and Polymer Technology, School of Chemical Science and Engineering / Department of Clinical Dentistry, University of Bergen, Bergen, Norway

<u>03-P160:</u> Multi-layered mineralized graphene oxide-collagen microscaffolds for bone tissue engineering: A biomimetic approach

Zhou Chu Chao, Zhang Xin Yue, Liu Shao Kai Department of Plastic Surgery, Union Hospital, Tongji Medical College, Huazhong University of Science and Technology, Wuhan, China

<u>03-P161:</u> The use of double-layer collagen I scaffold combined with microfracture for the repair of cartilage defects

Haoyu Wu, Hongwei Ouyang Key Laboratory of Tissue Engineering and Regenerative Medicine of Zhejiang Province School of Medicine, Zhejiang University, China

03-P162: Influence of bioactive calcium silicate/PCL 3D-printed scaffolds coated with biomimetic extracellular matrices for bone tissue engineering

Tuan-Ti Hsu, Yuan-Haw Andrew Wu, Ming-You Shie 3D Printing Medical Research Center, China Medical University Hospital, Taichung, Taiwan

<u>03-P163:</u> Biodegradable mesoporous magnesium–calcium silicate/ polycaprolactone/ polybutylene succinate composite scaffolds for bone tissue engineering

Yun Gyeong Kang, Ji Eun Kim, Jie Wei, Yanru Wu, Eun Jin Lee, Min Ju Kim, Jung-Woog Shin

Department of Biomedical Engineering, Inje University, Gimhae, Korea

03-P164: Using Leukocyte and Platelet-Rich Fibrin During Periodontally Accelerated Osteogenic Orthodontics Reduces Edema and Pain Ziyad S. Haidar, Francisco T. Muñoz

BioMATX, Faculty of Dentistry, Universidad de los Andes, Santiago, Chile / Centro de Investigación e Innovación Biomédica, Universidad de los Andes, Santiago de Chile / Department of Oral and MaxilloFacial Surgery, Faculty of Dentistry, Universidad de los Andes, Santiago, Chile

03-P165: Biosilica mineralized functional bone graft

Mi-Ran Ki, Sung Ho Kim, Jong Ki Kim, Seung Pil Pack Department of Biotechnology and Bioinformatics, Korea University, Sejong, Korea / Industrial Technology, Korea University, Sejong, Korea

03-P167: Bioactive magnesium-calcium silicate/chitosan coatedTi-6Al-4V scaffolds with improved bioactivity for hard tissue regeneration

Bi-Han Liu, Cheng-Yu Chen, Ming-You Shie, Chia-Tze Kao Institute of Oral Science, Chung Shan Medical University, Taichung, Taiwan

03-P168: A novel 3D printing composite scaffold with phytoestrogenic osteopomotive puerarin for potential bone regeneration

Xinluan Wang, Ling Li, Cuishan Huang, Huijuan Cao, Jiani Wang, Long Li, Yuxiao Lai, Sibylle Grad, Mauro Alini, Ling Qin Translational Medicine R&D Centre, Shenzhen Institutes of Advanced Technology Chinese Academy of Sciences, Shenzhen, China / Musculoskeletal Research Laboratory, Department of Orthopaedics & Traumatology, The Chinese University of Hong Kong, Hong Kong

03-P169: Innovative Bioceramics-based Nanocomposites towards Tissue Regeneration

Sandra Pina, Viviana P. Ribeiro, João Costa, Rui L. Reis, Joaquim M. Oliveira

3Bs Research Group, University of Minho, Guimaraes, Portugal / ICVS/3B's - PT Government Associate Laboratory, Braga/Guimarães, Portugal

03-P170: Design And Fabrication Of A Composite Scaffold For Treatment Of The Load Bearing Bone Defects

Iman Roohani, Ali Entezari, Michael Swain, Qing Li University of New South Wales Sydney, Australia

03-P171: Evaluation of Cartilage Regeneration in Gellan gum/agar blended Hydrogel with Improved Injectability

JongSeon Baek, GiWon Lee, JeongEun Song, Gilson Khang Department of BIN Convergence Technology, Department of Polymer Nano Science & Technology, Chonbuk National University, Jeonju, Korea

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03-P172: Using mesenchymal stem cells to treat inflammatory chondrocytes in vitro: conditioned medium is better than a co-culture system

Yu-Chun CHEN, Yu-Wei CHANG, Kinn Poay TAN, Yi-Shan SHEN, Yao-Horng WANG, Chih-Hung CHANG

Department of Orthopaedics, Far Eastern Memorial Hospital, New Taipei City, Taiwan 03-P173: Chondroprogenitor Cells as Source for Cartilage Repair Using a Biomimetic 3D Repair Model in vitro

Guillermo Bauza, Lewis Francis, Anna Pasto, Xin Wang, Aaron Shi, Ennio Tasciotti, Patrick McCulloch, Francesca Taraballi

Center for Biomimetic Medicine, Houston Methodist Research Institute, Houston, TX, USA / Department of Orthopedics and Sports Medicine, Houston Methodist Hospital, Houston, TX, USA / Centre for Nanohealth, Swansea University, Swansea, Wales, UK

<u>03-P174</u>: Fabrication of vascularized bone grafts using bone beads

Hikaru Akieda, Yukie Sonoyama, Tatsuto Kageyama, Yohei Noda, Shoji Maruo, Junji Fukuda

Faculty of Engineering, Yokohama National University, Yokohama, Japan

03-P175: Regeneration of Hyaline Cartilage from Mesenchymal Stem Cells Using Interpenetrating Polymer Network Gels of Polysaccharides and Peptides

Kazutoshi lijima, Shohei Ishikawa, Daisuke Matsukuma, Mineo Hashizume, Hidenori Otsuka

Department of Industrial Chemistry, Faculty of Engineering, Tokyo University of Science, Tokyo, Japan

03-P176: Organized chitosan scaffold processed the human synoviumderived stem cells for cartilage tissue engineering: an in vitro study based on microfluidic technology

Chen-Chie Wang, Ya-Ting Yang, Kai-Chiang Yang, Chang-Chin Wu Department of Orthopedic Surgery, Taipei Tzu Chi Hospital, The Buddhist Tzu Chi Medical Foundation, New Taipei City, Taiwan / Department of Orthopedics, School of Medicine, Tzu Chi University, Hualien, Taiwan

03-P177: Differentiation Potential and Proliferating Effect of Three-Dimensional Hydrogel Scaffolds on Mesenchymal Stem Cells

Jienny Lee, Mi Jeong Park, Jeong Su Byeon, Da-Un Jeong, Na-Yeon Gu, In-Soo Cho, Sang-Ho Cha

Animal and Plant Quarantine Agency, Gimcheon-si, Korea

03-P178: Induction of autophagy with rapamycin enhances

chondrogenesis of human mesenchymal stem cells

Souzan Salemi, Christopher Millan, Tullio Sulser, Marcy Zenobi, Daniel Eberli

Department of Urology, University Hospital Zurich, Zürich, Switzerland

03-P179: One-pot Synthesis of Injectable and Biodegradable Hydrogels with Interpenetration Polymer Network for Tissue Engineering Application

Shohei Ishikawa, Kazutoshi Iijima, Mineo Hashizume, Michihiro Iijima, Hidenori Otsuka

Graduate School of Science, Tokyo University of Science, Tokyo, Japan

03-P180: Gelatin Double Network Hydrogels for Cartilage Tissue Engineering

Long Bao Nguyen, Christoph Meinert, Karsten Schrobback, Travis J Klein

Institute of Health and Biomedical Innovation, Queensland University of Technology, Australia / Science and Engineering Faculty, Queensland University of Technology Brisbane, Australia

03-P181: Mechanical Property Controlled Collagen Hydrogel for Bone **Tissue Engineering**

Wheemoon Cho, Sang Jun Park, Dong Jin Choi, Youngsook Son, Chun-Ho Kim

Laboratory of Tissue Engineering, Korea Institute of Radiological and Medical Science, Seoul, Korea / Department of Genetic Engineering, College of Life Science and Graduate School of Biotechnology, Kyung Hee University, Yong In, Korea

03-P182: Injectable Double Network Hydrogels Towards Cartilage Repair

Olga Kossover, Haneen Simaan Yameen, Claudia Loebel, Amal Ayoub, Jonathan Galarraga, Jason Burdick, Dror Seliktar

Faculty of Biomedical Engineering, Technion- Israel Institute of Technology, Haifa, Israel

03-P183: Preventing infection while enhancing bone regeneration: development of a biofunctional electrospun membrane

Thomas Edward Paterson, Rui Shi, Caroline Wilcock, Jian Tian, Sam Tammas-Williams, Paul V Hatton, Li Zhou, Ílida Ortega School of Clinical Dentistry, University of Sheffield, Sheffield, UK

03-P184: Essentail culture environments to regenerate chondron based cartilage

Ying Yang, Hamza A Owida, Nicola J Kuiper Institute of Science & Technology in Medicine, University of Keele, Stoke-on-Trent, UK

<u>03-P185:</u> Vascularized bone tissue engineered system comprising autologous growth differentiation factors and mesenchymal stem cells Marta R. Casanova, Emanuel M. Fernandes, Rui L. Reis, Albino Martins,

Nuno M. Neves 3B's Research Group - Biomaterials, Biodegradable and Biomimetics, Avepark - Parque de Ciência e Tecnologia, Zona Industrial da Gandra, Barco - Guimarães,

Portugal / ICVS/3B's - PT Government Associate Laboratory, Braga/Guimarães, Portugal

03-P186: Cell-Cell Interactions Enhance Cartilage Formation in 3D Gradient Hydrogels that Mimics Tissue Zonal Organization

Danqing Zhu, Elisa Liu, Fan Yang Department of Bioengineering, Stanford University, Stanford, USA

03-P187: A Novel Method to Fabricate 3D Gradient Hydrogels with **Clinically Relevant Dimensions for Cartilage Repair** Danging Zhu, Elisa Liu, Fan Yang

Department of Bioengineering, Stanford University, Stanford, USA

03-P188: Time-response mechanical properties of in-vitro matured articular cartilages using growth factors

Stefano Perni, Polina Prokopovich School of Pharmacy, Cardiff University, Cardiff, UK

03-P189: Micro Channel Networks Improved the Cells Migration and Survive in Deep Zone of Collagen Scaffolds

Chaozong Liu, Maryam Tamaddon University College London, UK

03-P190: In vitro co-culture model of human osteocytes and osteoclasts in collagen gels modified with biomimetically mineralized collagen

Anne U Bernhardt, Violetta Oesterreich, Emilia Weiser, Corina Vater, Michael Gelinsky

Centre for Translational Bone, Joint and Soft Tissue Research, Technische Universitaet Dresden, Germany

<u>03-P191:</u> Tissue engineered bone – from stem cells to osteocytes

Johanna Melke, Anat Akiva, Nalan Liv, Job Fermie, Harm van Ruremonde, Paul Bomans, Anne Spoelstra, Judith Klumperman, Nico Sommerdijk, Keita Ito, Sandra Hofmann

Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, the Netherlands / Institute for Complex Molecular Systems, Eindhoven University of technology, Eindhoven, the Netherlands

<u>03-P192:</u> A composite oxygen-generating system for bone regeneration

Tai-En Hsieh, Chun-Chieh Chen, Po-Liang Lai, Chieh-Cheng Huang Institute of Biomedical Engineering, National Tsing Hua University, Hsinchu, Taiwan

<u>03-P193</u>: Biomimetic matrix-based cues for re-differentiation of chondrocytes

Yunhye Kim, Yongsung Hwang Department of Integrated Biomedical Science, Soonchunhyang Institue of Medi-bio Science, Soonchunhyang University, Cheonan-si, Korea

03-P194: Creation of a 3D Bone Tissue Model to Study Bone Loss in Microgravity

Riccardo Gottardi, Sean Kelley, Vincenzo Rotolo, Abhijit Roy, Prashant N. Kumta, Manuela T. Raimondi, Peter G. Alexander, Rocky S. Tuan University of Pittsburgh, USA / Fondazione Ri.MED, USA

<u>03-P195</u>: One Strike Loading Organ Culture Model to Investigate the Early Stage Degenerative Disc Disease Condition

Zhen Li, Zhiyu Zhou, Mauro Alini, Sibylle Grad AO Research Institute Davos, Davos, Switzerland

<u>03-P196:</u> Effect of orientation on osteochondral plugs in a biotribological test system

Christoph Bauer, Eugenia Niculescu-Morzsa, Vivek Jeyakumar, Daniela Kern, Hakan Gocerler, Ivana Toth, Stefan Nehrer Danube University Krems, Austria

03-P197: Optimising sintering process of porous Apatite-Wollastonite scaffolds to replicate bone structure

Niloufar Hojatoleslami, Sotiria Toumpaniari, Ana Marina Ferreira-Duarte, Piergiorgio Gentile, Kenny Dalgarno School of Engineering, Newcastle University, England, UK

03-P198: Bacteria for regenerative medicine

Jake James Hay, Aleixandre Rodrigo-Navarro, Thomas Barker, Andrés J García, Manuel Salmeron-Sanchez, Matthew J Dalby School of Biomedical Engineering, University of Glasgow, Glasgow, UK

<u>03-P199</u>: Assessment of the effects of follistatin on key processes in bone formation and in vivo defect repair

Shorouk Fahmy-Garcia, **Eric Farrell**, Janneke Witte-Bouma, Iris Robbesom-van den Berge, Melva Suarez, Didem Mumcuoglu, Heike Walles, Sebastiaan G.J.M. Kluijtmans, Bram C.J van der Eerden, Gerjo J.V.M. van Osch, Johannes P. van Leeuwen, Marjolein van Driel Department of Orthopedics, Erasmus MC, University Medical Center, Rotterdam, the Netherlands / Department of Internal Medicine, Erasmus MC, University Medical Center, Rotterdam, the Netherlands

03-P200: In Vitro Comparison of Clinically Applied Biomaterials for Autologous Chondrocyte Implantation (ACI)

Jan-Tobias Weitkamp, Karin Benz, Sebastian Lippross, David Eglin, Angela Rita Armiento, Kalan Violin, Tim Klüter, Andreas Seekamp, Bodo Kurz, Peter Behrendt

Department of Anatomy, Christian-Albrechts-University Kiel, Kiel, Germany / Department of Oral and Maxillofacial Surgery, University Medical Center Eppendorf, Hamburg, Germany

03-P202: Development of hydrogels derived from demineralised and decellularised human bone extracellular matrix

Yang-Hee Kim, Gianluca Cidonio, Richard O.C. Oreffo, Jonathan I. Dawson

Bone and Joint Research Group, Centre for Human Development, Stem Cells & Regeneration, Institute of Developmental Sciences, University of Southampton, Southampton, UK

03-P203: Vitreous Humor as an Extracellular Matrix Hydrogel for Cartilage Tissue Engineering Applications

Gabriella Brown, Alessia Longoni, Khoon Lim, Antoine Rosenberg, Gary Hooper, Debby Gawlitta, Tim Woodfield Christchurch Regenerative Medicine and Tissue Engineering (CReaTE) Group,

Department of Orthopaedic Surgery and musculoskeletal medicine, University of Otago, Christchurch, New Zealand

<u>03-P204</u>: Superior Calvarial Bone Regeneration using Pentenoate-Functionalized Hyaluronic Acid Hydrogels with Devitalized Tendon Particles and application to Traumatic Brain Injury

Jakob M Townsend, Brian T. Andrews, Yi Feng, Jinxi Wang, Randolph J. Nudo, Erik Van Kampen, Stevin H. Gehrke, Cory J. Berkland, Michael S. Detamore

Stephenson School of Biomedical Engineering, University of Oklahoma, Norman, OK, USA

<u>03-P205:</u> Fractionated human adipose tissue as a native biomaterial for the generation of a bone organ by endochondral ossification

Julien Guerrero, Sebastien Pigeot, Judith Müller, Dirk J Schaefer, Ivan Martin, Arnaud Scherberich

University of Basel Hospital, Department of Biomedicine, Tissue Engineering, Basel, Switzerland

<u>03-P206:</u> Thermally Responsive and Tissue Adhesive Hydrogel for Osteochondral Tissue Regeneration

Yu Seon Kim, Jason L Guo, Johnny Lam, Antonios G Mikos Department of Bioengineering, Rice University, Houston, USA

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03-P207: Effect of Capacitively Coupled Electrical Stimulation Over Growth Plates of Rat Chondroepiphysis Explants

Juan Jairo Vaca Gonzalez, Juan Felipe Escobar, Johana Maria Guevara, Yoshie Adriana Hata, José Félix Vega, Diego Alexander Garzon Alvarado

a Biomimetics Laboratory, Instituto de Biotecnologia, Universidad Nacional de Colombia, Bogota, Colombia / Numerical Methods and Modeling Research Group (GNUM) , Universidad Nacional de Colombia, Bogota, Colombia

<u>03-P208:</u> Enhanced wettability and improved mineralization on zwitterionic polymer brush grafted titanium surfaces

Serhat Ozturk, Merve Gultekinoglu, Doga Kavaz, Cem Bayram Department of Chemistry, Graduate School of Science and Engineering, Hacettepe University, Turkey

<u>03-P209:</u> Preclinical Studies of Alveolar Bone Formation Promoted by MicroRNA-200c and a New MicroRNA-200a Inhibitor in Sockets after Tooth Extraction

Liu Hong, Xiaoming Fu, Jie Xu, Adil Akkouch, Yi Shu, Miguel Romero-Bustillos, Steve Eliason, Gustavo Avila-Oriz, Brad A Amendt Deparment of Dental Research, College of Dentistry, University of Iowa, Iowa City, Iowa, USA

03-P210: Engineered microenvironments for efficient regeneration of bone critical-size defects

Cristina Gonzalez-Garcia, Andres Alba-Perez, David Shields, Matthew J. Dalby, Andres J Garcia, Manuel Salmeron-Sanchez Biomedical Engineering Research Division, School of Engineering, University of Glasgow. UK

<u>03-P211:</u> Early Weight-Bearing Improves Cartilage Repair in an *In vitro M*odel of Microfracture

Comparison with Two Mechanical Loading on Fibrin Gel Scaffolds Containing Bone Marrow Mesenchymal Stem Cells

Tomoya İseki, Riccardo Gottardi , Shinichi Yoshiya, Freddie Fu, Rocky S Tuan

Department of Orthopaedic Surgery, University of Pittsburgh, USA

<u>03-P212</u>: Joint-preserving regenerative therapy using injectable rhFGF 2 for patients with early stage of osteonecrosis of the femoral head

Yutaka Kuroda, Toshiko Ito-Ihara, Ryuta Asada, Toshiyuki Kawai, Koji Goto, Yasuhiko Tabata, Haruhiko Akiyama, Shuichi Matsuda Department of Orthopaedic Surgery, Graduate School of Medicine, Kyoto University, Japan

03-P213: Osteoconductive microarchitecture realized by additive manufacturing

Franz E. Weber

Oral Biotechnology & Bioengineering/Center for Dentistry_MKG, University Zurich, Switzerland

<u>03-P214:</u> A polycaprolactone/fish collagen biocomposite supplemented with fish hydroxyapatite for hard tissue regeneration

Seong-Yeong Heo, Seok-Chun Ko, Won-Kyo Jung Department of Biomedical Engineering, and Center for Marine-Integrated Biomedical Technology (BK21 Plus) Pukyong National University, Busan, Korea / Marine-Integrated Bionics Research Center, Pukyong National University, Busan, Korea

03-P215: Dynamic cell-specific expression pattern and role of IGFBP4 during chondrogenesis

Xia Liu, Tengfei Wang, Yi Wu, Jing Pan, Kexin Dong, Ran Xiao Research Center of Plastic Surgery Hospital, CAMS, PUMC, Beijing, China

<u>03-P216</u>: Effect of Pulsed Ultrasound on Sol-Gel Transition Hydrogel for Bone Regeneration

Sae Hyun Kim, Tae Ho Kim, Ho Young Kim, Se Heang Oh, Jin Ho Lee Department of Advanced Materials and Chemical Engineering, Hannam University, Daejeon, Korea

<u>03-P217:</u> The effect of topical cutaneous CO_2 application on bone healing in a rat femoral defect model

Yu Kuroiwa, Takahiro Niikura, Shunsuke Takahara, Sang Yang Lee, Keisuke Oe, Tomoaki Fukui, Michio Arakura, Yohei Kumabe, Takahiro Oda, Yoshitada Sakai, Ryosuke Kuroda

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03-P218: Coccoliths-Based Bone Graft Substitutes for Bone Tissue Regeneration

Jin Young Yun, So Yeong Bahn, Hyo Jeong Kim, Yun Kee Jo, Onyou Nam, EonSeon Jin, Hyung Joon Cha

Department of Chemical Engineering, Pohang University of Science and Technology, Pohang, Korea

<u>03-P219:</u> Micro- and nano-scale spectroscopic markers of tissue engineered bone nodules

Halima Kerdjoudj, Hassan Rammal, Marie Dubus, Nicolas Bercu, Michael Molinari, Sophie C Gangloff, Fabienne Quiles EA4691 BIOS-URCA-France, France

<u>03-P220:</u> Cartilage administrated biodegradable hydrogel containing basic fibroblast growth factor as an alternative for mastoid obliteration in an animal model

Yasunori Abe, Hiroyuki Yamada, Nohito Hato, Yasuhiko Tabata Department of otolaryngology, University of Ehime, Ehime, Japan

03-P221: Biodegradable Polyurethane Elastomers with Osteogenic Chain Extender as Hard Tissue Supports

Eda Ayse Aksoy, Betul Suyumbike Yagci, Kezban Ulubayram Department of Basic Pharmaceutical Sciences, Faculty of Pharmacy, Hacettepe University, Ankara, Turkey / Department of Polymer Science and Technology, Graduate School of Science and Engineering, Hacettepe University, Ankara, Turkey

<u>03-P222</u>: Alginate/ Gelatin/ nano-Silica hydrogel microcapsules for bone tissue engineering applications

Neda Khatami, Ali Baradar Khoshfetrat

M.Sc in Biotechnology, Department of Biotechnology, Faculty of Chemical Engineering, Sahand University of Technology, Tabriz, Iran

<u>03-P223:</u> The chondroprotective effects of diosmin on hydrogen peroxide-stimulated chondrocytes

Yi-Ru Chen, Chang-Chin Wu, Mon-Hsun Tsai

Institute of biotechnology, College of Bio-Resources and Agriculture, National Taiwan University, Taipei, Taiwan / School of Dental Technology, College of Oral Medicine, Taipei Medical University, Taipei, Taiwan

03-P224: Silver, Silicon Co-Substituted Hydroxyapatite in Mediating Bacteria-Cell Competition for Enhanced Tissue Regeneration

Poon Nian Lim, Shi Yun Tong, Zixuan Zhao, Bow Ho, Wilson Wang, Eng San Thian

Department of Mechanical Engineering of National University of Singapore, Singapore

P19. Cancer stem cells / Cancer

<u>03-P225:</u> Fucoidan inhibits new blood vessels formation in a tumor microenvironment

Catarina Oliveira, Sara Granja, Nuno M Neves, Rui L Reis, Fátima Baltazar, Tiago H Silva, Albino Martins

3B´s Research Group - Biomaterials, Biodegradables and Biomimetics, University of Minho; Headquarters of the European Institute of Excellence on Tissue Engineering and Regenerative Medicine; AvePark, Parque de Ciência e Tecnologia, Guimarães, Portugal / ICVS/3B's, PT Government Associate Laboratory, Braga/Guimarães, Portugal

<u>03-P226</u>: From Tissue Engineering to Tumor Engineering – Application of the Arteriovenous Loop Model for the Generation of a Fully Vascularized Tumor in an Animal Model

Annika Weigand, Anja M. Boos, Ran An, Pamela L. Strissel, Rafael Schmid, Jan W. Robering, Majida Al-Abboodi, Rainer Detsch, Paul D. Dalton, Almoatazbellah Youssef, Aldo R. Boccaccini, Matthias W. Beckmann, Tobias Bäuerle, Reiner Strick, Raymund E. Horch Department of Plastic and Hand Surgery, Laboratory for Tissue Engineering and Regenerative Medicine, University Hospital of Erlangen, Friedrich-Alexander University of Erlangen-Nürnberg (FAU), Germany

<u>03-P227:</u> *In Vivo* Modelling of Prostate Cancer Metastasis using Tissue-Engineered Humanized Bone

Jacqui Anne McGovern, Abbas Shafiee, Ferdinand Wagner, Christoph A Lahr, Marietta N Landgraf, Christoph Meinert, Boris Holzapfel, Dietmar W Hutmacher

Institute of Health and Biomedical Innovation, Queensland University of Technology, Brisbane, Australia

<u>03-P228</u>: Tissue engineering of an orthotopic humanised bone-organ as a platform for preclinical multiple myeloma research

Alvaro Sanchez, Christoph Lahr, Marietta Landgraf, Jacqui McGovern, Abbas Shafiee, Felipe Prosper, Dietmar W. Hutmacher Regenerative Medicine Group, Institute of Health and Biomedical Innovation, Queensland University of Technology, Brisbane, Australia

03-P229: Efficient Isolation of Exosomes Derived from Stem Cells Using Porous Glass Filter

Keita Aoki, **Hiroshi Yukawa**, Daisuke Onoshima, Shuji Yamazaki, Naoto Kihara, Ryohei Koguchi, Kumiko Takahashi, Hidefumi Odaka, Kenji Ishikawa, Masaru Hori, Yoshinobu Baba Graduate School of Engineering, Nagoya University, Aichi, Japan

03-P230: Colorectal tumour organoids: advantages of biofabrication methods for high throughput in vitro models

Annalisa Tirella, Julio M Rios de la Rosa, Jonathan Wubetu, Dominik Grudzinski

FBMH, University of Manchester, Manchester, UK / NoWCADD, University of Manchester, Manchester, UK

03-P231: Human Colon Cancer Screening by using Fluorescence-based Wax Physisorption Kinetics

Pei-Yu Huang, Ching-lue Chen, Yao-Chang Lee National Synchrotron Radiation Research Center, HsinChu, Taiwan

<u>03-P232:</u> *In silico* breast cancer model for understanding tumor development

Sandeep Kaushik, Virginia Brancato, Joaquim M Oliveira, Vitor M Correlo, Rui L Reis, Subhas C Kundu

3B's Research Group, ÄvePark, Zona Industrial da Gandra, Barco, Guimaraes, Portugal. / ICVS/3B's – PT Government Associate Laboratory, Braga, Guimarães, Portugal

03-P233: Network pathways of PTCH1, ERBB3, CTNNB1 and EFNA1 in gastric cancer and mesenchymal stem cells

Shihori Tanabe, Kazuhiko Aoyagi, Hiroshi Yokozaki, Hiroki Sasaki Division of Risk Assessment, Biological Safety Research Center, National Institute of Health Sciences, Kawasaki, Japan

<u>03-P234:</u> Combining high-resolution 3D optical imaging, computational modelling and tissue engineering to investigate patterns of cancer invasion

Claire Walsh, Bushra Khan, William McLean, Judith Pape, Dominic Giles, Vasileios Vavourakis, Peter Wijeratne, Umber Cheema, Simon Walker-Samuel

Centre for Advanced Biomedical Imaging, UCL, London, UK

03-P235: Local delivery of type 1 interferon via myeloid cells from induced pluripotent stem cells elicits systemic antitumor immunity

Zhang Rong. Nobuhiro Tsuchiya, Yumi Tokumitsu, Tatsuaki Iwama, Tianyi Liu, Miwa Haruta, Satoru Senju, Itaru Endo, Tetsuya Nakatsura, Yasushi Uemura

Division of Cancer Immunotherapy, EPOC, National Cancer Center, Japan

<u>03-P237:</u> Intratracheal delivery of immunostimulatory oligonucleotides using biodegradable polyketal nanoparticles: effect of long-term immune responses on murine lung cancer

Takashi Sato, Takeshi Shimosato

Department of Pulmonology, Yokohama City University, Yokohama, Japan

<u>03-P238:</u> A pH-Responsive Hollow Microsphere System that Can In Situ Self-assemble Micellar Depots to deliver NO, Reversing Hypoxia-induced Radioresistance

Yu-Jung Lin, Dang Nguyen, Chun-Chieh Chen, Trang Nguyen, Hsing-Wen Sung

Department of Chemical Engineering, National Tsing Hua University, Hsinchu, Taiwan

03-P239: Bubble-Generating Carrier Systems for Therapeutic Applications

Hsing-Wen Sung, Wei-Lin Wan, Yu-Jung Lin, Wei-Chih Lin, Wei-Tso Chia, Kun-Ju Lin

Department of Chemical Engineering and Institute of Biomedical Engineering, National Tsing Hua University, Hsinchu, Taiwan

<u>03-P240:</u> Local Co-Delivery of Anticancer Drug and Tumor-Suppressing Gene Based on Bioinspired Sticky Protein Nanoparticles

Yeonsu Jeong, Yun Kee Jo, Hyung Joon Cha

Department of Chemical Engineering, Pohang University of Science and Technology, Pohang, Korea

03-P241: Bioinspired Sticky Protein Nanoparticle-Based Spray Delivery System for Focal Cancer Treatment

Yeonsu Jeong, Yun Kee Jo, Bum Jin Kim, Kye Il Joo, Hyung Joon Cha Department of Chemical Engineering, Pohang University of Science and Technology, Pohang, Korea

<u>03-P242:</u> Novel Biodegradable PEG-GATGE Dendritic Block Copolymers as siRNA Vectors

Ana Paula Pego, Ana Spencer, Natália Magalhães, João Pedro Garcia, Pedro Moreno, Victoria Leiro

INEB - Instituto de Engenharia Biomédica, Universidade do Porto, Portugal / i3S - Instituto de Investigação e Inovação em Saúde, Universidade do Porto, Portugal / ICBAS - Instituto de Ciências Biomédicas Abel Salazar, Universidade do Porto, Portugal / FEUP - Faculdade de Engenharia da Universidade do Porto, Portugal

03-P243: Multivalent DNA Biochips for Single-Molecule Investigations on Cancer Cell Adhesion

Da Huang, Patel Perez-Garrido, Sandra P. Garrido, John Marshall, Matteo Palma

School of Biological and Chemical Sciences, Queen Mary University of London, London, UK

<u>03-P244:</u> Improved photodynamic therapy of melanoma with PPIX@ CD: a carbon dot – protoporphyrin IX host-guest conjugate

Jose R Aguilar-Cosme, Helen E Bryant, Frederik Claeyssens Department of Materials Science and Engineering, Faculty of Engineering, University of Sheffield, Sheffield, UK

<u>03-P245:</u> Nanotherapeutic and Biomaterial Scaffold Design for Cancer Immunotherapy

Kye Il Joo, Yeonsu Jung, Hyungjoon Cha

Department of Chemical Engineering, POSTECH, Pohang, Korea

03-P246: Hybrid nanoparticles inhibited the growth of liver cancer stem cells

Yuji Komizu, Koushuke Inamura, Seiichi Ishida, Yoko Matsumoto, Taku Matsushita

Division of Applied Life Science, Graduate School of Engineering, Sojo University, Kumamoto, Japan

<u>03-P247:</u> An NIR-absorbing Nanoparticle System Loaded with TLR-7/8 Ligand for Combinational Photothermal Immunotherapy

Wen-Yu Pan, Po-Ming Chen, Yu-Rong Wu, Chiranjeevi Korupalli, Ching-Yen Yeh, Yu-Zhen Yang, Po-Kai Luo, Chun-Ju Chou, Hsing-Wen Sung Department of Chemical Engineering and Institute of Biomedical Engineering, National Tsing Hua University, Hsinchu, Taiwan

<u>03-P248:</u> Tumor organoids; basic cancer biology and personalized medicine applications

Shay Soker, Mahesh Devarasetty, Aleksander Skardal Wake Forest University School of Medicine / Wake Forest Institute for Regenerative Medicine, USA

<u>03-P249:</u> Patient Specific Microfluidic Model to Unveil Novel Molecular Interactions Between Stromal and Cancer Cells During Invasion

Mehdi Nikkhah, Danh Truong, Alexander Kratz, Jin G Park, Toan Nguyen, Harpinder Saini, Barbara A Pockaj, Ghassan Mouneimne School of Biological and Health Systems Engineering, Arizona State University, Tempe, AZ, USA

<u>03-P250:</u> Bioprinting a tumour microenvironment on a chip

Daniel Nieto Garcia, Alberto Jorge Mora, Jesus Pino, Gerard O'connor, Linh Nguyen, Hua Ye, Amir Miri

Photonics4life group, University of Santiago de Compostela, Spain

03-P251: Novel Insights on Wilm's Tumor: Using Human Nephron Progenitors

Astgik Petrosyan, Stefano Da Sacco, Roger E De Filippo, Laura Perin Children's Hospital Los Angeles, USA / GOFARR LAB / Urology Dept., USA

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<u>03-P252:</u> The regulatory mechanism of PAX3/p53 pathway in glioma stem cell renewal and differentiation

Hui Zhu, Cheng bin Xue, Yi bing Guo, Xiao hong Li, Jing jing Lu Research Center of Clinical Medicine, Affiliated Hospital of Nantong University, Nantong, China

03-P253: 4D Tumoroid Cultivation for Sequential Assessment in Microenvironmental Context

Junghwa Cha, Pilnam Kim

Department of Bio and Brain Engineering, KAIST, Daejeon, Korea

03-P254: Focus on Bone Cancer Model Via Biomimetic Materials

Monica Montesi, Silvia Panseri, Elisabetta Campodoni, Monica Sandri, Anna Tampieri

Institute of Science and Technology for Ceramics, National Research Council of Italy, Italy

<u>03-P255</u>: Developing Tissue Engineered Model for Ameloblastoma

Deniz Bakkalci, Judith Pape, Ying Ying Gu, Stefano Fedele, Umber Cheema

Division of Surgery and Interventional Sciences, University College London, London, UK <u>03-P256</u>: Biomimetic scaffolds to recreate hypoxic-induced tumor progression and drug resistance

Ennio Tasciotti, Chiara Liverani, Alessandro De Vita, Silvia Minardi, Yibin Kang, Laura Mercatali, Dino Amadori, Alberto Bongiovanni, Federico LaManna, Toni Ibrahim

Center for Biomimetic Medicine, Houston Methodist Research Institute / Department of Orthopedics & Sports Medicine, Houston Methodist Hospital, USA

<u>03-P257:</u> Morphology-based Categorization for Evaluation of 3D cultured Tumor-derived Cells

Mayu Shibuta, Hirohito Kato, Ryoko Kusakabe, Masato Tamura, Kei Kanie, Hirofumi Matsui, Toshiyuki Kanamori, Masumi Yanagisawa, Shinji Sugiura, Ryuji kato

Department of Basic Medicinal Sciences, Graduate School of Pharmaceutical Sciences, Nagoya University, Japan

<u>03-P258</u>: Bioengineering the human bone niche for advanced cancer – *In vitro* assessment of anti-androgen therapies in metastatic prostate cancer

Nathalie Bock, Thomas Kryza, Joan Rohl, Ali Shokoohmand, Judith A Clements, Dietmar W Hutmacher

Translational Research Institute, Queensland University of Technology, Brisbane, Australia

03-P259: Raman spectroscopic analysis of breast cancer tumour microenvironment

Daniela Lazaro Pacheco, Abeer Shaaban, Ihtesham Ur Rehman University of Sheffield. Materials Science and Engineering department. Sheffield, UK

03-P260: High-throughput Screening of Brain Cancer-ECM Interactions in 3D using Gradient Hydrogels

Danqing Zhu, Pavin Trinh, Fan Yang Department of Bioengineering, Stanford University, Stanford, USA

03-P261: Brain-Mimetic Scaffolds Enable Investigation of Therapeutic Resistance and Invasion in Glioblastoma

Stephanie Seidlits, Weikun Xiao, Alireza Sohrabi, Yasmin Ghochani, Arshia Ehsanipour, Rongyu Zhang, Songping Sun, Lisa Ta, Harley I Kornblum, David A Nathanson Department of Bioengineering, University of California Los Angeles, Los Angeles, CA,

Uspartment of bioengineering, University of California Los Angeles, Los Angeles, CA, USA

<u>O3-P262:</u> Specific ECM composition regulates Smad dependent -Transforming Growth Factor- β1 (TGF β1)–induced EMT response in HepG2 cells engineered in cirrhotic and healthy liver 3D scaffolds

Krista Rombouts, Martina Marrali, Andrea Telese, Katrin Bottcher, Luca Frenguelli, Walid Al-Akkad, Giuseppe Mazza, Massimo Pinzani University College London (UCL), Institute for Liver and Digestive Health, London, UK / Engitix Ltd. Royal Free Hospital, London, UK

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03-P263: Establishment of patient-specific cancer cell lines from colon cancer tissues by membrane Filtration Method via Nylon mesh filter and PLGA-silk screen membranes

Huang Wei-Lun, Akon Higuchi

Department of Chemical and Materials Engineering, University of National Central, Taoyuan, Taiwan

03-P264: Liposomal drug delivery in an in vitro 3D bone marrow model for multiple myeloma

Maaike Braham, Anil K. Deshantri, Monique C. Minnema, F. Cümhur Öner, Raymond Schiffelers, Marcel H. Fens, Jacqueline Alblas Department of Orthopedics, University Medical Center Utrecht, the Netherlands

<u>03-P265:</u> Development of an *in vitro* three-dimensional tumor model for drug screening

Gerard Rubi-Sans, Irene Cano-Torres, Miguel Ángel Mateos-Timoneda, Elisabeth Engel

Institute for Bioengineering of Catalonia (IBEC), The Barcelona Institute of Science and Technology, Barcelona Spain / CIBER en Bioingeniería, Biomateriales y Nanotecnología (CIBER-BBN), Madrid, Spain

<u>03-P266:</u> Design and Implementation of a 3D Hydrogel System for Chemo-Sensitivity Testing and Diagnostics Using Growth Model Tumors and Human Tumor Biopsies

Tamara Birman, Dror Seliktar

Department of Biomedical Engineering, Technion Israel Institute of Technology, Haifa, Israel

<u>03-P267</u>: In vitro preclinical primary pancreatic cancer models: microenvironment re-modelling during tumour progression

Annalisa Tirella, Chen Zhao, Enrique Lallana FBMH, University of Manchester, Manchester, UK / NoWCADD, University of Manchester, Manchester, UK

03-P268: Extracellular Matrix Hydrogel Downregulates Neoplastic Esophageal Cell Phenotype

Lindsey Tamiko Saldin, Shil Patel, Li Zhang, Luai Huleihel, George S. Hussey, David G. Nascari, Lina M. Quijano, Xue Li, Divya Raghu, Anant K. Bajwa, Ashten N. Omstead, Blair A. Jobe, Neill J. Turner, Ali H. Zaidi, Stephen F. Badylak

Department of Bioengineering, University of Pittsburgh, Pittsburgh, PA USA / McGowan Institute for Regenerative Medicine, University of Pittsburgh, Pittsburgh, PA USA

<u>03-P269:</u> Identification of Colon Cancer Cells and Cancer Stem Cells from Cancer Cell Line for Establishing Patient-Specific Targeted Therapy Chia-Hsuan Chang. Akon Higuchi

Department of Chemical and Material Engineering, University of National Central, Taoyuan, Taiwan

03-P270: Examining the Interaction Between Adipose Derived Stem Cells (ADSC) and MCF-7 Breast Cancer Cells Using Co-Culture Technique

Stephanie Elizabeth Anne Burnell, Emman J Combellack, Iain S Whitaker, Shareen H Doak

Reconstructive Surgery and Regenerative Medicine (ReconRegen) Research Group, Swansea University Medical School, Swansea, UK

<u>03-P271:</u> Indole-6-carboxaldehyde inhibits the PMA-induced metalloproteinase matrix (MMP)-9 and invasion of HT1080 human fibrosarcoma cell

Tae-Hee Kim, Seok-Chun Ko, Soo-Jin Heo, Won-Kyo Jung Department of Biomedical Engineering, Pukyong National University, Busan, Korea / Marine-Integrated Bionics Research Center, Pukyong National University, Busan, Korea

<u>03-P272:</u> The heptameric peptide purified from marine microalgae inhibited PMA-induced MMP-9 in human fibrosarcoma HT1080 cells

Tae-Hee Kim, Seok-Chun Ko, Won-Kyo Jung Department of Biomedical Engineering, Pukyong National University, Busan, Korea / Marine-Integrated Bionics Research Center, Pukyong National University, Busan, Korea

P20. Cardiovascular

<u>03-P273:</u> A hematopoietic origin of pericytes during angiogenesis – Implications for cell-based therapies

Anna Blocki, Sebastian Beyer, Marisa Assuncao, Michael Raghunath Institute for Tissue Engineering and Regenerative Medicine and School of Biomedical Science, Chinese University of Hong Kong, Hong Kong / Berlin-Brandenburg Centre for Regenerative Therapies, Charité-Universitätsmedizin zu Berlin, Germany

<u>03-P274:</u> Targeted delivery of nitric oxide via "Bump-and-hole" based enzyme/progdrug pair

Qiang Zhao, Dashuai Zhu, Yiwa Pan College of Life Sciences, Nankai University, Tianjin, China

03-P275: Flow-Induced Vascular Network Formation and Maturation in Three-Dimensional Engineered Tissue

Barak Zohar, Yaron Blinder, David J Mooney, Shulamit Levenberg Department of Biomedical Engineering, Technion-Israel Institute of Technology, Israel

<u>03-P276:</u> Electrospun patch functionalized with nanoparticles allows for spatiotemporal release of VEGF and PDGF-BB promoting *in vivo* neovascularization

Ennio Tasciotti, Christopher Tsao, Laura Pandolfi, Silvia Minardi, Xin Wang, Gianluca Storci, Francesca Taraballi Center for Biomimetic Medicine, Houston Methodist Research Institute, USA /

Department of Orthopedics & Sports Medicine, Houston Methodist Hospital, USA

<u>03-P277:</u> Re-vascularising an ischemia limb- Can hAEC exosomes augment angiogenesis

Jean Tan, Sin Nee Lau, Hannah McDonald, Ramasamy Boominathan, Peter Cheng, Julian Goggi, Kishore Bhakoo, Rebecca Lim Australian Regenerative Medicine, Monash University, Clayton, Melbourne, Australia / The Ritchie Centre, Hudson Institute of Medical Research, Clayton, Melbourne, Australia

<u>03-P278</u>: An electrospun vascular scaffold for cellularized small diameter blood vessels: a preclinical large animal study

Sang Jin Lee, Young Min Ju, Ickhee Kim, Anthony Atala, James J Yoo Wake Forest Institute for Regenerative Medicine, Wake Forest School of Medicine, USA

<u>03-P279:</u> Construction of intelligent antithrombotic small diameter

tissue engineered blood vessel in vivo by utilization host response Wen Zeng, Da Huo, Yanzhao Li, Feila Liu, Chuhong Zhu Department of Anatomy, Third Military Medical University, Chongqing, China

<u>03-P280:</u> Small Diameter Nanofibrous Scaffolds for *In Situ* Vascular Tissue Engineering

Renato Samuel Navarro, Ouyang Yang, Ping Qiu, Liu Zhiyong, Rachel Schifman, Guadalupe Salazar, Julie Rieland, Bo Yang, Y. Eugene Chen, Peter X. Ma

Macromolecular Science and Engineering Center, University of Michigan, Ann Arbor, MI, USA

<u>03-P281</u>: A silk fibroin-polyurethane hybrid and semi-degradable arteriovenous graft for hemodialysis

Sebastiao van Uden, Valentina Catto, Loes van der Donk, Noemi Vanerio, Linda Kock, Alberto C. L. Redaelli, Francesco G. Greco, Stefania A. Riboldi

Bioengineering Laboratories S.r.l., Meda, Italy / DEIB, Politecnico di Milano, Milan, Italy

03-P282: Developing Imaging-Compatible 3D-Printed Bioresorbable Scaffolds

Banu Akar, Henry Oliver Ware, Cheng Sun, Guillermo Ameer Biomedical Engineering, Northwestern University, IL, USA

03-P283: Biofabrication and Bioprinting of Vascular Spheroids

Heidi Andrea Declercq, Lise De Moor, Peter Dubruel, Sandra Van Vlierberghe, Chris W Vercruysse, Idriz Merovic, Sarah Baetens, Julien Verstraeten, Paulina Kowalska, Bieke Bekaert Tissue Engineering and Biomaterials Group, Department of Human Structure and Repair, Ghent University, Ghent, Belgium

<u>03-P284:</u> 3D Bioprinting a Multilayered Heart Valve Scaffold Using Polycaprolactone and Gelatin Methacrylate-PEG Bioinks

Aline Louise Yonezawa Nachlas, Siyi Li, Michael E Davis Wallace H Coulter Department of Biomedical Engineering, Georgia Institute of Technology, Atlanta, GA, USA / Emory University School of Medicine, Emory University, Atlanta, GA, USA

<u>03-P285:</u> Mechanical behavior of small diameter polyurethane - based vascular grafts produced by electrospinning

Vera Chernonosova, Alexander Gostev, Alexey Shutov, Andrey Karpenko, Pavel Laktionov

Institute of Chemical Biology and Fundamental Medicine SB RAS, Novosibirsk, Russia / "E. Meshalkin National medical research center" of the Ministry of Health of the Russian Federation, Novosibirsk, Russia

<u>O3-P286:</u> Cryopreservation and its Influence on the Differentiation of Adipose Derived Stromal Cells Towards Vascular Smooth Muscle Cell-like Cells: Implication of ERK1/2, IFN y and Smad2/3

Xiaoqing Zhang, Craig Simmons, J. Paul Santerre Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON, Canada / Ted Rogers Centre for Heart Research, Translational Biology and Engineering Program, University of Toronto, Toronto, ON, Canada

<u>03-P287</u>: AAV-mediated Therapeutic Strategy for Ischemic Heart Disease

So Young Yoo Pusan National University, Korea

03-P288: MicroRNA-145-loaded poly lactic-co-glycolic acid nanoparticles attenuate venous intimal hyperplasia in a rabbit vein graft disease model

Hiroomi Nishio, Hidetoshi Masumoto, Kazuhisa Sakamoto, Hideo Kanemitsu, Koji Ueyama, Kazuhiro Yamazaki, Tadashi Ikeda, Kenji Minatoya

Department of Cardiovascular Surgery, Kyoto University Graduate School of Medicine, Kyoto, Japan

<u>03-P289:</u> An engineered perfusable microfluidic platform for recapitulating *in vivo* nanoparticle translocation

Rick Lu, Thomas Benge, Benjamin Fook Lun Lai, Locke Davenport Huyer, Milica Radisic

Institute for Biomaterials and Biomedical Engineering, University of Toronto, Toronto, Canada

<u>03-P290:</u> Investigation on microvascular toxicity and extravascular transport of nanoparticles using perfusable 3D microvessel model

Tae-Eun Park, Jungho Ahn, Chong-Su Cho, Seong Woo Cho, Joo H. Kang, Joon Myoung Song, Noo Li Jeon Ulsan National Institute of Science and Technology, Korea

03-P291: The Next Generation of Synthetic Vascular graft: 3D Plasma Ion Immersion Implantation

Bob Lee, Behnam Akhvan, Marcela Bilek, Steven Wise Heart Research Institute, University of Sydney, New South Wales, Australia / Sydney Medical School, University of Sydney, New South Wales, Australia

<u>03-P292:</u> The role of 3D collagen and 5-azacytadine on the modulation of human bone marrow-derived mesenchymal stem cell secretome for enhanced cardiac regeneration

Chandra Kothapalli, Jyotsna Joshi

Department of Chemical and Biomedical Engineering, Cleveland State University, Cleveland, OH, USA

O3-P293: Elastic fiber assembly in 3D tissue models by vascular smooth muscle cells derived from human mesenchymal stem cells

Kibret Mequanint, Shigang Lin

Department of Chemical and Biochemical Engineering, The University of Western Ontario, Canada

<u>03-P294:</u> Cardiac Stem Cells as Regulator of Adult Cardiomyocyte Homeostasis and Their Myocardial Niches

Jong-Tae Kim, Hyeong-In Kim

Paik Institute for Clinical Research, Inje University Collige of Medicine, Busan, Korea

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<u>03-P295</u>: Design and fabrication of perfused micro-bioreactor for threedimensional culture of cardiomyocytes with electrical stimulation

Xin Liu, Zhanfeng Cui, Hua Ye Department of Engineering Science, University of Oxford, Oxford, UK

<u>03-P296:</u> Contractile Force Measurement of Human iPS Cell-Derived

Cardiac Cell Sheet-Tissues and Its Application to *In Vitro* Drug Testing Daisuke Sasaki, Katsuhisa Matsuura, Yuji Haraguchi, Yuki Kagawa, Takahiro Shioyama, Hirotsugu Kubo, Tatsuya Shimizu Institute of Advanced Biomedical Engineering and Science, Tokyo Women's Medical University, Tokyo, Japan

03-P297: Functional Contractile and Permeability Deficits Identified in the Principal Cardiovascular Disease Risk Locus in Human iPSCs

Evan Lee Teng, Valentina LoSardo, Aditya Kumar, Jesse Placone, Brenda Ng, Jessica Fung, Kristin K Baldwin, Adam J Engler Department of Bioengineering, UC San Diego, USA

03-P298: Investigation of Pro-inflammation and Wound-healing Processes in the Co-culture of Human Monocytes with VSMCs Differentiated from ASCs

Xiaoqing Zhang, Craig Simmons, J. Paul Santerre Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, Canada / Ted Rogers Centre for Heart Research, Translational Biology and Engineering Program, University of Toronto, Toronto, Canada

<u>03-P299:</u> Elastogenicity of cBM-SMCs in a 3D collagenous milieu: Identifying a potential cell source for cell therapy in AAAs

Anand Ramamurthi, Shataakshi Dahal, Thomas Broekelmann, Robert P. Mecham

Department of Biomedical Engineering, Cleveland Clinic, Cleveland, OH, USA / Department of Molecular Medicine, Cleveland Clinic Lerner College of Medicine at Case Western Reserve University, Cleveland, OH, USA

03-P300: Differentiation of Human Pluripotent Stem Cells into Cardiomyocytes Cultured on Hydrogels having Different Elasticity

Huan Chiao Su, Akon Higuchi

Department of ChME, University of NCU, Zhongli, Taiwan

<u>03-P301:</u> Development of tissue engineered decellularized connective tissue membrane for allogeneic arterial patch implantation

Masashi Yamanami, Keiichi Kanda, Kazuki Morimoto, Tomoya Inoue, Taiji Watanabe, Osamu Sakai, Daisuke Kami, Satoshi Gojo, Hitoshi Yaku

Department of Cardiovascular Surgery, Kyoto Prefectural University of Medicine, Kyoto, Japan

<u>03-P302</u>: Exogenous nitric oxide delivery promotes matrix deposition and suppresses inflammation in adult human aneurysmal smooth muscle cell cultures

Chandra Kothapalli, Phillip Simmers, Kurt Farrell, Gautam Mahajan Department of Chemical and Biomedical Engineering, Cleveland State University, Cleveland, OH, USA

03-P303: Stents with Inducible VEGF/HGF-secreting MSCs enhanced Reendothelialization and decreased Restenosis in Swine Model

Hyun-Kyung Chang, Pyung-Hwan Kim, Dong Wook Kim, Hyun-Min Cho, Mi Jin Jeong, Dea Han Kim, Yoon Ki Joung, Kyung Seob Lim, Han Byual Kim, Han Cheol Lim, Dong Keun Han, Young Joon Hong, Je-Yoel Cho

Department of Biochemistry, BK21 PLUS Program for Creative Veterinary Science Research and Research Institute for Veterinary Science, College of Veterinary Medicine, Seoul National University, Seoul, Korea

03-P304: Antihypertensive effect of an enzymatic hydrolysate from Styela clava flesh tissue in type 2 diabetic patients with hypertension

Seok-Chun Ko, Seung-Hong Lee, Dae Ho Lee, You-Jin Jeon, Won-Kyo Jung

Marine-Integrated Bionics Research Center, Pukyong National University, Busan, Korea

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<u>03-P305:</u> A Platform to Study 4D Hemodynamics and Morphology in Artery Models Using Ultra-High Field MRI (17.6 T)

Kristina Andelovic, Patrick Winter, Thomas Kampf, Volker Herold, Jan Hansmann, Peter Jakob, Wolfgang Bauer

Medicine I, Cardiology, University Hospital Wuerzburg, Wuerzburg, Germany / Experimental Physics V, University of Wuerzburg, Wuerzburg, Germany / Tissue Engineering and Regenerative Medicine, University Hospital Wuerzburg, Wuerzburg, Germany

<u>03-P306</u>: Fast Self-Navigated Wall Shear Stress Measurements in the Murine Aortic Arch Using Radial 4D-PC-MRI at 17.6 T for Tissue Engineering Approaches

Kristina Andelovic, Patrick Winter, Thomas Kampf, Anton Xu, Peter Jakob, Wolfgang Bauer, Volker Herold

Medicine I, Cardiology, University Hospital Wuerzburg, Wuerzburg, Germany / Experimental Physics V, University of Wuerzburg, Wuerzburg, Germany

P21. Heart

03-P307: Cardiomyogenic Differentiation of Mesenchymal Stem Cells Using Inducing Agents and an Anisotropic Scaffold

Maria Christine Tankeh Asuncion, Siew Lok Toh, James Cho Hong Goh

National University of Singapore, Singapore

03-P308: Noninvasive OCT Imaging of Three-Dimensional Cardiac Tissues Derived from Human Induced Pluripotent Stem Cells

Atsushi Miyaoka, Daisuke Takagi, Yoshinari Tsukamoto, Takanori Tano, Shigeru Miyagawa, Mitsuru Akashi Ricoh Institute of Future Technology, Research and Development Division, RICOH

COMPANY, LTD, Kanagawa, Japan

<u>03-P309:</u> Drug response of scaffold-free cardiac constructs fabricated using bio-3D printing

Kenichi Arai, Ana Raquel Verissimo, Koichi Nakayama Department of Regenerative Medicine and Biomedical Engineering, Saga University, Saga, Japan

<u>03-P310:</u> Bioprinted Patch with Cardiac Extracellular Matrix and Human Cardiac Progenitor Cells for Heart Regeneration

Donald Bejleri, Michael Davis

Department of Biomedical Engineering, Georgia Institute of Technology, Atlanta, Georgia, USA / Department of Biomedical Engineering, Emory University, Atlanta, Georgia, USA

03-P311: ¹⁹F Magnetic Resonance Imaging of Tissue Inflammation and T1 Imaging of Fibrosis after Myocardial Infarction in Rats

Anton Xu, Michael Anton Seethaler, Kristina Kristina Andelovic, Peter Michael Jakob, Wolfgang Bauer

Comprehensive Heart Failure Center, University Hospital of Wuerzburg, Wuerzburg, Germany / Department of Experimental Physics V, University of Wuerzburg, Wuerzburg, Germany

03-P312: Fibrous matrix transmitted force contributes to local fibroblasts activation during cardiac fibrosis expansion

Hongsheng Yu, Longwei Liu, Hui Zhao, Yanan Du Department of Biomedical Engineering, School of Medicine, Tsinghua University,

Beijing, China <u>03-P313:</u> Influence of different bioreactor parameters on whole heart

decellularization Isabella Caroline Pereira Rodrigues, **Andreas Kaasi**, Rubens Maciel Filho, André Luiz Jardini, Laís Pellizzer Gabriel

National Institute of Biofabrication, Brazil / School of Applied Sciences, University of Campinas, Brazil

<u>03-P314:</u> Specific detachment and efficient collection of beating iPS-derived cardiac cells on fluidic device system with visible light

Takeshi Kawano, Kaede Yokoyama, Kenji Takatsuka, Yusuke Taki, Yuji Haraguchi, Katsuhisa Matsuura, Tatsuya Shimizu, Yusuke Nakajima, Chie Kojima

R&D Division, NIKON CORPORATION, Japan

03-P315: Stem Cell Therapy for Myocardial Infarction Using Blood-Immiscible, Injectable, Sticky, and Bioactive 3-Dimensional Cell Carrier Based on Mussel Protein Glue

Tae Yoon Park, Jeong Min Oh, Sung Bo Sim, Jongho Lee, Hyung Joon Cha

Department of Chemical Engineering, POSTECH, Pohang, Korea

03-P316: Hydrogels based on hyaluronan derivatives combined with implantable device for heart regeneration after myocardial infarction

Lenka Kovarova, Ivana Scigalkova, Stephen Manuel Wildhirt, Martin Pravda, Garry Duffy, Dorothee Daro, Vladimir Velebny Tissue engineering department, Contipro a.s., Dolni Dobrouc, Czech Republic / Brno

University of Technology, Faculty of Chemistry, Purkynova 464/118, Brno, Czech Republic

<u>03-P317:</u> Heart-on-chip platform to assess the influence of culture media perfusion on *in vitro* cardiac tissue maturation

Daniela Cruz-Moreira, Alberto Redaelli, **Marco Rasponi** Politecnico di Milano, Italy

03-P318: Integrating Traction Force Microscopy into Organ-on-a-Chip platforms: *In situ* characterization of contractile forces in 3D cardiac µ-tissues

Oliver Schneider, Stefanie Fuchs, Stefan Schneider, Christopher Probst, Peter Loskill

Department of Cell and Tissue Engineering, Fraunhofer Institute for Interfacial Engineering and Biotechnology IGB, Stuttgart, Germany

03-P320: Toward in vitro construction of iPSC-derived human heart-like tissue

Julia Junghof, Koichi Nakayama, Yoshinori Yoshida Department of Life Science Frontiers, Center of iPS Cell Research and Application, Kyoto University, Japan

<u>03-P321:</u> Engineering multiscale models of the myocardium for

investigating structure-function relationships in the human left ventricle Nisa Penland, Alex Jiao, Alec Simon Tulloch Smith, Charles Murry, Deok-Ho Kim

Department of Bioengineering, University of Washington, Seattle, USA

03-P322: Torsade de Pointes arrhythmia model *in vitro* with 3D human iPS cell-engineered heart tissue

Masahide kawatou, Hidetoshi Masumoto, Takashi Ashihara, Jun K Yamashita

Department of Cell Growth and Differentiation, Center for iPS Cell Research and Application (CiRA), Kyoto University, Kyoto, Japan / Department of Cardiovascular Surgery, Kyoto University Graduate School of Medicine, Kyoto, Japan

03-P323: In vitro modeling of cardiac fibrosis for drug screening using simulated extracellular matrix in human induced pluripotent stem cells derived cardiac construct

Hiroko Iseoka, Shigeru Miyagawa, Akima Harada, Tsuyoshi Ishikawa, Yoshiki Sawa

Osaka University, Osaka, Japan

03-P324: An Injectable Self-doping Conductive Hydrogel that Improves Electrical Coupling of Isolated Cardiomyocytes and Restores Heart Function after Myocardial Infarction

Meng-Hsuan Hsieh, Jun Wu, Shu-Hong Li, Song-Yi Wu, Xiang-Yu Gao, Hao-Ji Wei, Ren-Ke Li, Hsing-Wen Sung

Department of Chemical Engineering and Institute of Biomedical Engineering, National Tsing Hua University, Hsinchu, Taiwan

<u>03-P325:</u> The cardiac ECM as a template for tissue engineering scaffolds Vera C Graup, Sanjay Sinha, Richard Farndale, Ruth E Cameron,

Serena M Best Department of Materials Science and Matallurgy University of Cambridge Cambridge

Department of Materials Science and Metallurgy, University of Cambridge, Cambridge, UK $\ensuremath{\mathsf{UK}}$

<u>03-P326:</u> Culture-free on-site Implantation of Allogeneic Adipose-Derived Human Mesenchymal Stem Cell Spray Boosts Convenience of Regenerative Therapy in Cardiovascular Disease

Daisuke Mori, Shigeru Miyagawa, Shin Yakima, Takayoshi Ueno, Koichi Toda, Toru Kuratani, Kotoe Kawai, Hayato Kurt, Hiroyuki Nishida, Yoshiki Sawa

Department of Cardiovascular Surgery, Osaka Unversity, Osaka, Japan



P22. Inflammation, immune system

03-P328: Design and Development of a Miniaturized Imaging Window for Intravital Nonlinear Microscopy

Claudio Conci, Emanuela Jacchetti, Tommaso Zandrini, Marta Tunesi, Giberto Chirico, Giulio Cerullo, Roberto Osellame, Manuela T. Raimondi

Department of Chemistry, Materials and Chemical Engineering Giulio Natta, Politecnico di Milano, Milan, Italy

<u>03-P329:</u> Tunable angiogenesis and host immune response on Elastinlike recombinamer based scaffolds on soft tissues regeneration

Israel Gonzalez de Torre, Sebastian Staulbi, Julia Cerino, Matilde Alonso, Daniel Oertli, Friederich Eckstein, Katharina Glatz, Jose Carlos Rodriguez Cabello, Anna Marsano

Technical Proteins NanoBiotechnology, research department., Valladolid, Spain / G.I.R. BIOFORGE, Universidad de Valladolid, CIBER-BBN, Spain

03-P330: Tissue-resident CD169+ macrophages are crucial drivers of

innate and adaptive immunity during blood-stage Plasmodium infection Pravesh Gupta, Si Min Lai, Jianpeng Sheng, Piotl Tetlak, Akhila Balachander, Carla Claser, Laurent Renia, Klaus Karjalainen, Christiane Ruedl

Nanyang Technological University, School of Biological Sciences, Singapore

<u>03-P331:</u> Pro-healing Macrophage Phenotype Inducing cytokine cocktail loaded thin gelatin hydrogels for controlling innate immune response in vivo in tracheal patch model

Julien Barthes, Prescillia Lagarrigue, Vladimir Riabov, Celine Muller, Edwin Courtial, Fabrice Projetti, Christophe Marquette, Philippe Lavalle, Julia Kzhyshkowska, Nihal Engin Vrana, Agnes Dupret-Bories PROTiP Medical, 8 Place de l'Hôpital, France / INSERM UMR 1121, 11 rue Humann, France

03-P332: Inhibiting IL-1 Signaling Promotes Growth Factor-Based Regeneration

Mikael M Martino, Ziad Julier, Anthony J Park, Kenta Maruyama, Kazuhiko Maeda, Gisela A Kuhn, Ralph Muller, Shizuo Akira EMBL Australia, Australian Regenerative Medicine Institute, Monash Univeristy, Clayton, Australia / WPI Immunology Frontier Research Center, Osaka University, Osaka, Japan

<u>03-P333:</u> Engineered growth-factors improve wound healing in the nonobese diabetic mouse model of type-1 diabetes

Michael JV. White, Jeffrey A. Hubbell

Institute for Molecular Engineering, University of Chicago, Eckhardt building, Chicago, USA

<u>03-P334:</u> Clarification of Interaction Mechanism between Transplanted Stem Cells and Immune Cells using Quantum Dots Imaging Technique

Koudai Kitamura, Hiroshi Yukawa, Kazuhide Sato, Tomoko Arimoto, Daisuke Onoshima, Tetsuya Ishikawa, Yoshinobu Baba Graduate School of Engineering, Nagoya University

03-P335: Early diagnosis of progressive glomerulonephritis by using Wax-Physisorption-based FTIR Micro-spectroscopy

Yao-Chang Huang, Pei-Yu Huang, Mei-Ching Yu, Ching-lue Chen National Synchrotron Radiation Research Center, HsinChu, Taiwan

<u>03-P337:</u> Surface modification on polyester urethane acrylate films to direct foreign body response

Febriyani Damanik, Rong Wang, Aylvin Dias, Matt Bakker, Lorenzo Moroni

Complex Tissue Regeneration Department, MERLN Institute for Technology Inspired Regenerative Medicine Maastricht University, Maastricht, 6229 ER, the Netherlands / Brightlands Materials Center, Urmonderbaan 22, 6167 RD Geleen, the Netherlands

<u>03-P338:</u> The effect of different types of stromal cell sheets on the inflammatory state of macrophages *in vitro*

Yvonne Bastiaansen-Jenniskens, Panithi Sukho, Jan Willem Hesselink, Nicole Kops, Jolle Kirpensteijn, Femke Verseijden

Department of Orthopedics, Erasmus MC, University Medical Center, Rotterdam, The Netherlands

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03-P339: Hydrogels for Delivering the Immunomodulatory Properties of Mesenchymal Stromal Cells

Sandhya Moise, Luigi Dolcetti, Francesco Dazzi, Paul Roach, Sheila MacNeil

School of Pharmacy, Centre for Biomolecular Sciences, University of Nottingham, Nottingham, UK / Dept. of Haemato-oncology, Rayne Institute, King's College London, London, UK

03-P340: Effects of Exosomes Released by Mesenchymal Stem Cells for Immune Regulation

Jienny Lee, Mi Jeong Park, Jeong Su Byeon, Da-Un Jeong, Na-Yeon Gu, In-Soo Cho, Sang-Ho Cha

Animal and Plant Quarantine Agency, Gimcheon-si, Korea

03-P341: Cell surface engineering for immunocamouflage of single cells via layer-by-layer coating technique

Minji Kim, Hyunbum Kim, Su-Hwan Kim, Young-Hyeon An, Nathaniel Suk-yeon Hwang

School of chemical and biological engineering, Seoul National University, Seoul, Korea 03-P342: Metallosis: The Battle of Five Armies

Zhidao Xia

Centre for Nanohealth, Swansea University Medical School, Swansea, UK

03-P343: Microparticles Maintain Anti-inflammatory Macrophage Phenotype in Inflammatory Conditions

Kathryn Leigh Wofford, Daniel Kacy Cullen, Kara Lorraine Spiller School of Biomedical Engineering, Drexel University, Philadelphia, PA, USA / Center for Neurotrauma, Neurodegeneration & Restoration, Corporal Michael J. Crescenz VA Medical Center, Philadelphia PA, USA / Center for Brain Injury & Repair, Dept. of Neurosurgery, University of Pennsylvania, Philadelphia, PA, USA

<u>03-P344:</u> Self-assembled chitosan-glycyrrhizin nanoparticle as an anti-inflammatory drug to treat inflammatory bowel disease

Yeonsoo Park, Dong Yun Lee Hanyang University, Seoul, Korea / BK21 PLUS Future Biopharmaceutical Human Resources Training and Research Team, Hanyang University, Seoul, Korea / Institute of Nano Science & Technology (INST), Hanyang University, Seoul, Korea

<u>03-P345</u>: Preparation of gelatin hydrogels for dual drug release to modify macrophages polarization

Naoki Momotori, Ryusuke Tanaka, Yasuhiko Tabata Institute for Frontier Life and Medical Sciences, Kyoto University, Kyoto, Japan

<u>03-P346:</u> Stem cell-derived Nano-Ghosts with innate targeting and immunomodulatory capabilities: A new approach for cartilage regeneration

Domenico D'Atri, Joao Garcia, Laura Creemers, Marcelle Machluf Faculty of Biotechnology and Food engineering, Technion Israel Institute of technology, Haifa, Israel

<u>03-P347:</u> A three-dimensional *in vitro* model of lymphangiogenesis in tumor microenvironment

Youngkyu Cho, Kyuhwan Na, Jihee Won, Yesl Jun, Ji Hun Yang, Seok Chung

Department of IT convergence. Korea University, Seoul, Korea

<u>03-P348:</u> An *In Vitro* Testing Platform of Macrophage Polarization in Hydrogel Scaffolds

Patrick Thomas Coburn, Nicole Yee-Key Li-Jessen School of Communication Sciences and Disorders, McGill University, Montreal, Canada

03-P349: IMMUNE ASSISTED ARTIFICIAL TISSUE DEVELOPMENT VIA CO-ENCAPSULATION OF FIBROBLAST/ENDOTHELIAL CELLS AND MACROPHAGES IN GELATIN HYDROGELS UNDER CYTOKINE STIMULATION

Julien Barthes, Camille Dollinger, Celine Muller, Urmas Liivas, Agnes Dupret-Bories, Helena Knopf-Marques, Nihal Engin Vrana PROTIP Medical, 8 Place de l'Hôpital, 67000 Strasbourg, France / INSERM UMR 1121, 11 rue Humann, 67085 Strasbourg, France

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03-P350: Modulation of Inflamed Synovium and its Residing Macrophages with Triamcinolone Acetonide Improves Chondrogenesis of Mesenchymal Stem Cells

Serdar Capar, Gerjo J.V.M. van Osch, Jan A.N Verhaar, Yvonne M. Bastiaansen-Jenniskens

Department of Orthopedics, Erasmus MC University Medical Center, Rotterdam, the Netherlands

03-P351: Immunomodulatory and Antimicrobial coatings for medical devices

Philippe Lavalle, Angela Mutschler, Lorène Tallet, Cynthia Calligaro, Helena Knopf Marques, Julien Barthés, Engin Vrana, Pierre Schaaf INSERM U1121 Biomaterials and Bioengineering, Strasbourg, France

<u>03-P352:</u> Monocyte/Macrophage response to calcium phosphate, chitosan and hyaluronic acid – biomimetic substrate

Sophie C Gangloff, Hassan Rammal, Marie Dubus, Laura Entz, Léa Aubert, Cédric Mauprivez, Halima Kerdjoudj

EA 4691 "Biomaterial and inflammation in bone site", Health section, SFR Cap-Santé, University of Reims, Reims, France

<u>03-P353:</u> In Vitro Effect of Maitake (*Grifola frondosa*) Particle on Cellular Immune-Enhancing Function

Yu-Ri Seo, Ki-Taek Lim

Department of Biosystems Engineering, Kangwon National University, Chuncheon, Korea

03-P354: Cardiac Extracellular Matrix Aging Impacts Macrophage Phenotype and Function

Martin John Haschak, Siddhartha Dash, Bryan N Brown Department of Bioengineering, University of Pittsburgh, Pittsburgh, USA / McGowan Institute for Regenerative Medicine, University of Pittsburgh, Pittsburgh, USA

03-P355: Immune modulating scaffolds for bone tissue engineering

Olwyn Roxanne Mahon, David C Browe, Tomas Gonzalez-Fernandez, Pierluca Pitacco, Chris Hobbs, Daniel J Kelly, Aisling Dunne School of Biochemistry & Immunology and School of Medicine, Trinity Biomedical Sciences Institute, Trinity College Dublin, Ireland / Trinity Centre for Bioengineering, Trinity College Dublin, Ireland

03-P356: Immunological Compatibility of Human Recombinant Decorina Prerequisite for Novel Scaffold Design

Martina Seifert, Katrin Sudrow, Maria Schneider, Svenja Hinderer, Katja Schenke-Layland

Berlin Brandenburg Center for Regenerative Therapies, Charite-Universitaetsmedizin Berlin, corporate member of Freie Universitaet Berlin, Humboldt-Universitaet zu Berlin, and Berlin Institute of Health, Berlin, Germany / Institute of Medical Immunology, Charite Universitaetsmedizin Berlin, Berlin, Germany

<u>03-P357:</u> Immunomodulation and osteogenic response on mineralized collagen during bone tissue regeneration

Fengzhen Liu, Zhaoyong Lv, Yujue Zhang, Keyi Li, Fuzhai Cui, Bin Zhang, Xiumei Wang

Liaocheng People's Hospital, Medical College of Liaocheng University, Liaocheng, China / State Key Laboratory of Solid Lubrication, Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences, Lanzhou, China / Department of Materials Science and Engineering, Tsinghua University, Beijing, China

<u>03-P358:</u> Engineered Antigen Specific *In Vitro* System for Characterizing Immunological Responses to Encapsulated Cells

Ying Li, Anthony W Frei, Ethan Y Yang, Allison L Bayer, Cherie L Stabler

J. Crayton Pruitt Family Department of Biomedical Engineering, University of Florida, Gainesville, FL, USA / Interdisciplinary Graduate Program in Biomedical Sciences, College of Medicine, University of Florida, Gainesville, FL, USA

<u>03-P359:</u> Promotion of Regulatory Tcell Induction via Engineered Bio-active Synthetic Polymers for Islet Allograft Tolerance

Maria M Coronel, Jessica D Weaver, Michael hunckler, Devon M Headen, Juan Medina, Esma Yolcu, Haval Shirwan, Andres J Garcia Woodruff School of Mechanical Engineering, Georgia Institute of Technology, Atlanta, GA, USA / Petit Institute for Bioengineering and Biosciences, Georgia Institute of Technology, Atlanta, GA, USA

<u>O3-P360:</u> Anti-inflammatory property of Curcumin-Albumin conjugate established using primary cell cultures

Deepa S, Lissy K Krishnan

Division of Thrombosis Research, Department of Applied Biology, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Thiruvananthapuram, Kerala, India

O3-P361: Nitrate supplementation ameliorates DSS-induced colitis Luyuan Jin, Liang Hu

Department of general dentistry, Beijing Stomatological Hospital, Beijing, China

03-P362: An Experimental Pathway for Assessing the

Immunomodulatory Property of Biomaterials Using Lipopolysaccharide Zetao Chen. Yin Xiao

Sun Yat-sen University, China

03-P363: Magnetic modulation of immunological microenvironment inside scaffolds to enhance bone tissue regeneration

Jian Liu, Suisui Hao, Yu Zhang, Jie Meng, Ning Gu, Haiyan Xu Institute of Basic Medical Sciences, Chinese Academy of Medical Sciences & Peking Union Medical College, China

P23. Liver

03-P364: In Vitro and In Vivo Evaluation of Dual Growth Factor-Loaded Alginate/Hyaluronic Acid Hydrogel for the Treatment of Liver Cirrhosis

So Ri Choi, Tea Ho Kim, Jea Seon Lee, Se Heang Oh, Dea Won Jeon, Jin Ho Lee

Department of Advanced Materials and Chemical Engineering, Hannam University, Daejeon, Korea

<u>03-P365:</u> Construction of a fiber-type hepatic tissue by bottom-up method using multilayer spheroids of hepatocytes, endothelial cells and mesenchymal cells

Hiroshi Mizumoto, Tatsuya Okudaira, Ryohei Yabuta, Toshihisa Kajiwara

Department of Chemical Engineering, Faculty of Engineering, Kyushu University, Japan <u>03-P366</u>: Time-dependent liver-specific gene expressions of

vascularized subcutaneous human liver tissue

Yusuke Sakai, Akihiko Soyama, Masaaki Hidaka, Mitsuhisa Takatsuki, Susumu Eguchi

Department of Surgery, Nagasaki University Graduate School of Biomedical Sciences, Nagasaki, Japan

<u>03-P367:</u> Development of miniature human liver with mouse decellularized liver

Yukako Fukuda, Jaeyong Cho, Hiroki Sakamoto, Nana Shirakigawa, Takanobu Yamao, Tatsunori Miyata, Yo-ichi Yamashita, Hideo Baba, Hiroyuki Ijima

Department of Chemical Engineering, Kyushu University, Fukuoka, Japan

<u>03-P368:</u> Biofabrication of Micro Blood Vessel Network from Hydrogel Beads

Ding Weng, Yuan Pang, Zitong Wang, Wei Sun Department of Mechanical Engineering, Tsinghua University, Beijing, China / State Key Laboratory of Tribology, Tsinghua University, Beijing, China / Biomanufacturing Center, Tsinghua University, Beijing, China

<u>03-P369:</u> Effect of temperature and oxygen supply to liver function expression in hepatocyte culture toward to organ culture

Kozue Yoshida, Mika Kondo, Shunsuke Nakamura, Hiroki Sakamoto, Nana Shirakigawa, Hiroyuki Ijima

Department of materials process Engineering, Kyushu University, Fukuoka, Japan <u>03-P370:</u> Generation of Functional Human Liver Tissues in Vitro via Contraction of Hepatic Cell Sheets

Botao Gao, Katsuhisa Sakaguchi, Tatsuya Shimizu Institute of Advanced Biomedical Engineering and Science, Tokyo Women's Medical University, Japan

<u>O3-P371:</u> HGF/Heparin-immobilized Decellularized Liver Matrix as Substrates for Hepatocytes Regeneration in Acute Liver Injury model

Yu-Chai Dai, Kuang-Min Lee, Yung-Te Hou Department of Bio-industrial Mechatronics Engineering, Taiwan

03-P372: Mesenchymal stem cells and induced bone marrow macrophage combination therapy for liver cirrhosis mouse model

Atsunori Tsuchiya, Yusuke Watanabe, Satoshi Seino, Yuzo Kawata, Yuichi Kojima, Shunzo Ikarashi, Takayuki Watanabe, Suguru Takeuchi, Shuii Terai

Division of Gastroenterology and Hepatology, Niigata University, Japan

03-P373: Development of a novel targeted drug delivery system for liver tissue regeneration

Yung-Te Hou, Po-Chuan Hsieh, Chun-Yen Lee, Chia-Wen Wu Department of Bio-Industrial Mechatronics Engineering, National Taiwan University, Taiwan

03-P374: Construction of engineered human liver organoid by stem cell incorporating with the cadherin modified biomaterials

Lei Cao, Yan Zhang, Xueping Wang, Jun Yang The Key Laboratory of Bioactive Materials Ministry of Education, College of Life Science, Nankai University, Tianjin, China

03-P375: Liver-on-chip: primary rat small hepatocytes in a microfluidic platform

Gu-Ming Zhang, Chia-Chun Wu, Pin-Yao Chen, Yung-Te Hou Department of Bio-Industrial Mechatronics Engineering, Taiwan

03-P376: Cryogel-integrated hepatic cell culture microchips for liver tissue engineering

Lilandra Boulais, Rachid Jellali, Ulysse Pereira, Patrick Paullier, Eric Leclerc, Sidi A. Bencherif, Cécile Légallais

UMR CNRS 7338, Laboratoire de Biomécanique et Bioingénierie, Université de Technologie de Compiègne, Compiègne, France / Laboratory for Advanced and Multifunctional Polymer Biomaterials, Department of Chemical Engineering, Northeastern University, Boston, USA / Department of Bioengineering, Northeastern University, Boston, USA / Harvard John A. Paulson School of Engineering and Applied Sciences, Harvard University, Cambridge, USA

03-P377: Electric-field assisted microfluidic synthesis of tailorable porous microbeads as cell carriers for tissue engineering applications

Jan Guzowski, Marco Costantini, Pawel J Zuk, Piotr Garstecki, Andrea Barbetta

Institute of Physical Chemistry, Polish Academy of Sciences, Warsaw, Poland / Department of Mechanical and Aerospace Engineering, Princeton University, Princeton, USA

03-P378: Microfluidics-based droplet platform for rapid spheroid production and liver tissue engineering

Hon Fai Chan, Kam W Leong

Institute of Tissue Engineering and Regenerative Medicine, Chinese University of Hong Kong, Hong Kong, China / School of Biomedical Science, The Chinese University of Hong Kong, Hong Kong, China / Department of Biomedical Engineering, Columbia University, New York, NY, USA / Department of Mechanical Engineering, Massachusetts Institute of Technology, Cambridge, MA, USA

03-P379: Functional Evaluation of a Hepatic Tissue Constructed from Multicellular Spheroids

Huaixu Liu, Hiroshi Mizumoto, Masamichi Kamihira, Toshihisa Kajiwara Department of Materials Process Engineering, Graduate School of Engineering, Kyushu University, Fukuoka, Japan

03-P380: The inhibitory effect of Adrenomedullin (ADM) on hepatic NFkB activation in 2D and 3D hepatic cell cultures

Krista Rombouts, Elisabetta Caon, Daniela Gabbia, Sara De Martin, Annarosa Floreani, Giorgia Zigiotto, Zhenzhen Zhang, Luca Frenguelli, Walid Al-Akkad, Samantha Sarcognato, Maria Guido, Giuseppe Mazza, Massimo Pinzani

University College London (UCL), Institute for Liver and Digestive Health, London, UK

03-P381: C. sinensis infestation increases collective migration of cholangiocarcinoma in three-dimensional tumor microenvironment

Jihee Won, Youngkyu Cho, Dahyun Lee, Jaehoon Kim, Seok Chung, Zhang Ho Pak

School of Mechanical Engineering, Korea University, Seoul, Korea

03-P382: Revascularization of liver scaffolds using vascular induction and maturation cycles

Iris Pla-Palacin, Manuel Almeida, Sara Morini, Daniela Rubio-Soto, Pilar Sainz-Arnal, Pedro Miguel Baptista Health Research Institute of Aragon (IIS Aragon), Zaragoza, Spain

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03-P383: Development of liver-specific ECM electrospun nanofiber as a potential substrate for primary hepatocytes

Ronald Perocho Bual, Haruna Kimura, Yasuhiro Ikegami, Nana Shirakigawa, Hiroyuki Ijima

Department of Materials Process Engineering, Kyushu University, Fukuoka, Japan 03-P384: Granulocyte-macrophage colony-stimulating factor reduces

liver fibrosis in dimethylnitrosamine-induced liver injury in rats

Kil Hwan Kim, Binika Hada, Byung Hyune Choi Veterans Medical Research Institute, Veterans Health Service Medical Center, Seoul,

P24. Pancreas

Korea

03-P385: Ascorbic Acid-2-phosphate protective effect against ROS on pancreatic β -cell spheroids

Dina Myasnikova, Binbin Zhang, Junji Fukuda Graduate School of Engineering, Yokohama National University, Yokohama, Japan

03-P386: Study on islet purification and viability and function maintenance

Na Li, Xing Zhang, Xiaojun Ma The Engineering Alloys Division Shenyang National Lab. for Materials Science, Institute of Metal Research Chinese Academy of Science, Shenyang, China / Laboratory of Biomedical Material Engineering, Dálian Institute of Chemical Physics, Chinese Academy of Sciences, Dalian, China

03-P387: Engineering islet for improved performance by optimized reaggregation in alginate gel beads

Na LI, Xing Zhang, Ying Zhang, Xiaojun Ma The Engineering Alloys Division Shenyang National Lab. for Materials Science,Institute of Metal Research Chinese Academy of Science,Shenyang,China / Laboratory of Biomedical Material Engineering, Dalian Institute of Chemical Physics, Chinese Academy of Sciences, Dalian , China

<u>03-P388</u>: 3D Bioprinting of biomimetic pancreas

Linnea Strid Orrhul, Shadab Abadpour, Dag Josefsen, Gunnar Kvalheim, Paul Gatenhom, Hanne Scholz 3D Bioprinting Center, Chalmers University of Technology, Department of Chemistry and Chemical, Göteborg, Sweden

03-P389: Formation of 3-D multilayered cell sheet enhances therapeutic capacities of differentiated insulin producing cells for diabetic control

Yuna Lee, In Kyong Shim, Teruo Okano, Song Cheol Kim Biomedical Engineering Research Center, Asan Institute for Life Sciences, Asan Medical Center, Korea

<u>03-P390:</u> Subcutaneous Transplantation Of MIN6 Beta Cells Embedded In mPEG-Ala Hydrogel

Jyuhn-Huarng Juang, Hsiu-Chao Lin, Chen-Yi Chen, Chen-Wei Kao, Shu-Ting Wu, Chia-Rui Shen, Jiun-Jie Wang, Zei-Tsan Tsai, I-Ming Chu Chang Gung Memorial Hospital, Taiwan / Chang Gung Universitty, Taiwan

03-P391: Pancreatic Beta Cell Differentiation of Human Tonsil-derived Mesenchymal Stem Cells by Regulating Cell-Matrix Interactions

Hyunbum Kim, Sang-heon Kim, Jaeseok Han, Yongsung Hwang Soonchunhyang Institute of Medi-Bio Science, Soonchunhyang University, Cheonan-si, Korea / Institute of Tissue Regeneration, College of Medicine, Soonchunhyang University, Korea / School of Chemical and Biological Engineering, Seoul National University, Seoul, Korea / The BioMax Institute of Seoul National University, Seoul, Korea

03-P392: Bioprinted Pancreas-On-A-Chip Model For Drug Screening In **Diabetes Therapy**

Monika Hospodiuk, Madhuri Dey, Bugra Ayan, Donna Sosnoski, Kazim Kerim Moncal, Yang Wu, Ibrahim Tarik Ozbolat, Jeffrey Catchmark Department of Agriculture and Biological Engineering, Penn State University, State College, PA, USA / The Huck Institutes of the Life Sciences, Penn State University, State College, PA, USA

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03-P394: ENGINEERED 3D HUMAN PANCREATIC CANCER MODELS: THE ROLE OF TISSUE-SPECIFIC EXTRACELLULAR MATRIX IN TUMOR PROGRESSION AND THERAPY-RESISTANCE

Walid Al-Akkad, Pilar Acedo, Domenico Tamburrino, Luca Frenguelli, Peter Labib, Simone Canestrari, Maria Giovanna Vilia, Andrew Hall, Xenia Charalambous, Mark Lowdell, Giuseppe Fusai, Stephen Pereira, Massimo Pinzani, Krista Rombouts, Giuseppe Mazza Institute for Liver and Digestive Health, University College London, London, UK

<u>03-P395:</u> Non-degradable cell encapsulation of pancreatic islets with

US-PS95: Non-degradable cell encapsulation of pancreatic islets with alginate-EGCG conjugation

Jae Bin Lee, Jae-Kyung Park, Kimyung Choi, Dong yun Lee Department of bioengineering, University of Hanyang, Seoul, Korea / BK21 PLUS Future Biopharmaceutical Human Resources Training and Research Team / Institute of Nano Science & Technology (INST), Hanyang University, Seoul, Korea

<u>03-P396:</u> Evaluation of polylactic acid/ polyglycolic acid covering material after pancreatic surgery using rat pancreatic fistula model Yuichiro Uchida, Toshihiko Masui, Yasuhiko Tabata, Shinji Uemoto

Department of surgery, Kyoto university, Kyoto, Japan

P25. Skin

<u>03-P397:</u> Effects of Soybean Isoflavones on the Survival of Random Skin Flaps in Rats

Pengfu Xu, Dingsheng Lin

Department of Hand Surgery, The 2nd Affiliated Hospital of Wenzhou Medical University, Wenzhou, China / Wenzhou Medical University, China

<u>03-P398:</u> N-acetyl cysteine loaded nano graphene oxide reinforced collagen – a 3D biosponge for skin regeneration application Jialun Li

Department of Plastic Surgery, Wuhan Union Hospital, HUST, Wuhan, China

03-P399: Functionalized Collagen Scaffolds Result in Sustained

Postnatal Regeneration after *in utero* Closure of Skin Defects in Sheep

Willeke F. Daamen, Corien Oostendorp, Paul J. Geutjes, Frank Smit, Dorien M. Tiemessen, Sjoerd Polman, Aya Abbawi, Katrien M. Brouwer, Alex J. Eggink, Wout F. Feitz, Toin H. van Kuppevelt Dept. of Biochemistry, RIMLS, Radboud university medical center, Nijmegen, the Netherlands

<u>03-P400:</u> The construction of full-thickness skin flap for the treatment of deep wound

Zhu Zhu, XuSong Luo, Cheng Huang

Department of Plastic and Reconstructive Surgery, Shanghai 9th People's Hospital, Shanghai Jiao Tong University School of Medicine, Shanghai Key Laboratory of Tissue Engineering, Shanghai, China

<u>03-P401:</u> In vivo sheep study on the effects of ITAP's porous size on soft tissue attachment

Elena Giusto, Chaozong Liu, Catherine Pendegrass, Gordon Blunn Division of Surgery and Interventional Science, University College London, London, UK

03-P402: Sandwich-type Collagen-Coated Antioxidative Nanofibrous Membrane for Wound Dressing Application

Jinfei Hou, Lifeng Chen

Department of Plastic Surgery,Union Hospital,Tongji Medical College,Huazhong University of Science and Technology, Wuhan, China

<u>03-P403:</u> A Histological and Functional Comparison of Dermal Scaffolds for Cutaneous Wound Healing in the Porcine Animal Model

Stuart John Brown, Vaibhav Sharma, Elena Garcia-Gareta, Lilian Hook Regenerative Biomaterials Group, RAFT Institute, Middlesex, UK / Smart Matrix Ltd, Leopold Muller Building, Mount Vernon Hospital, Northwood, UK

<u>03-P404:</u> Bioactive Peptide Amphiphile Nanofiber Gels Enhance Burn Wound Healing: In Vitro and In Vivo Studies

Akishige Hokugo, Situo Zhou, Mark McClendon, Zheyu Zhang, Luis Andres Segovia, Kameron Rezzadeh, Reena Bakshi, Samuel I Stupp, Reza Jarrahy

Regenerative Bioengineering & Repair (REBAR) Laboratory, Division of Plastic and Reconstructive Surgery, Department of Surgery, David Geffen School of Medicine, University of California Los Angeles, USA

<u>03-P405:</u> A Highly Programmable and Non-invasive Biomaterial to Aid Wound Healing

Virginia Llopis-Hernandez, Felix Warren, Manuel Salmeron-Sanchez, Matthew Dalby

Centre for Cell Engineering, University of Glasgow, Glasgow, UK

<u>03-P406:</u> Bioactive nanovesicles from umbilical cord blood controlled delivery system for chronic wounds

Helena Henriques-Antunes, Renato Cardoso, Alessandra Zonari, Joana Correia, Ermelindo Leal, Adrián Jimenez-Balsa, Ana Barradas, Vanessa Pinto, Eugénia Carvalho, Lino Ferreira

Center for Neuroscience and Cell Biology, Coimbra, Portugal / Crioestaminal -Stemlab, S.A., Cantanhede, Portugal / Faculdade de Medicina da Universidade de Coimbra, Coimbra, Portugal

<u>03-P407:</u> Platelet derivatives, alginate and sericin: an activated biomembrane as medical patch in skin regeneration

Maddalena Mastrogiacomo, Marta Nardini, Marina Torre, Sara Perteghella, Ranieri Cancedda DIMES, University of Genoa, Italy

<u>03-P408:</u> Function Of Latent TGF-Beta-1 Binding Protein-2 (LTBP-2) In Modulation Of Growth Factor Storage, Expression And Activity In Normal And Fibrotic Tissues

Mohamed Arshad Sideek, Joshua Smith, Clementine Menz, Allison Cowin, Mark Gibson

Department of Physical Rehabilitation Sciences, Kulliyyah of Allied Health Sciences, International Islamic University Malaysia, Kuantan, Pahang, Malaysia / Discipline of Anatomy and Pathology, School of Medicine, University of Adelaide, Adelaide, SA, Australia

<u>03-P409:</u> Amentoflavone, a biflavonoid, Increase Stem Cell Activity of Interfollicular Epidermal Cells by Modulating Basement Membrane

Jung-Won Shin, Hye-Ryung Choi, Ji Young Choi, Seung-Hye Yang, Kyoung-Chan Park

Department of Dermatology, Bundang Seoul National University Hospital, Seongnamsi, Gyeonggi-do, Korea

03-P410: The bioactivity evaluation of basic fibroblast growth factor (bFGF) release *in vitro* from collagen/gelatin sponges

Maria Chiara Munisso, Naoki Morimoto, Kenji Kusumoto Department of Plastic and Reconstructive Surgery, Kansai Medical University, Japan

03-P411: Extracellular Calcium in Dermal Fibroblast Conditioned Medium (DFCM) Assists Re-epithelialization via Collective Migration of Keratinocytes

Shiplu Roy Chowdhury, Nurul 'Izzah Abdul Ghani, Manira Maarof, Aminuddin Bin Saim, Ruszymah Binti Haji Idrus Tissue Engineering Centre, Faculty of Medicine, Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia

03-P412: Low dose stingless bee honey increases viability of human dermal fibroblasts that could potentially promote wound healing

Abid Nordin, Nur Qisya Afifah Veronica Sainik, Shiplu Roy Chowdhury, Aminuddin Bin Saim, Ruszymah Bt Hj Idrus Department of Physiology, UKM Medical Centre, Cheras, Kuala Lumpur, Malaysia. /

Department of Physiology, UKM Medical Centre, Cheras, Kuala Lumpur, Malaysia. 7 Tissue Engineering Centre, UKM Medical Centre, Cheras, Kuala Lumpur, Malaysia

<u>03-P413:</u> Nanochitin-nanolignin complexes to deliver bioactive molecules for skin regeneration

Luisa Trombi, Maria Beatrice Coltelli, Alessandra Fusco, Pierfrancesco Morganti, Giovanna Donnarumma, Serena Danti Dept. of Civil and Industrial Engineering, University of Pisa, Pisa, Italy / INSTM (Consorzio Interuniversitario Nazionale per la Scienza e Tecnologia dei Materiali). Florence. Italy

<u>03-P414:</u> Fabrication and characterization of poly(vinyl alcohol)/Red seacucumber hydrolysate hydrogel for wound dressing application

Geunhyeong Kim, Hyeon-Ho Park, Seong-Yeong Heo, Seok-Chun Ko, Soo-Jin Heo, Won-Kyo Jung

Department of Biomedical Engineering, and Center for Marine-Integrated Biomedical Technology (BK21 Plus), Pukyong National University, Busan, Korea / Marine-Integrated Bionics Research Center, Pukyong National University, Busan, Korea
03-P415: Skin model ex-vivo of a burn induced by a Laser

anthony de Buys Roessingh, Ania Raszka, Wassim Raffoul, Lee Ann Applegate, Oumama El Ezzi, Daniel Hasselbach Pediatric surgery, Hospital University Center of Lausanne, Switzerland

03-P416: Characterization of keratinocyte cultures and self-assembled bilayered skin substitutes produced with a new in-house developed defined medium

Sergio Cortez Ghio, Danielle Larouche, Alain Garnier, Lucie Germain Université Laval, Faculty of Medicine, Department of Surgery, Québec, Canada / Centre de recherche en organogénèse expérimentale de l'Université Laval/LOEX, Québec, Canada / CHU de Québec – Université Laval Research Center, Division of Regenerative Medicine, Québec, Canada

<u>03-P417</u>: Physical Properties of hydrated human acellular dermal matrix

Young-Eun Kim, MiRi Park, HyangRan Lim, Jae-Hyoung Ahn, Seong-Hyun Jeon

Department of Tissue Engineering R&D, Hansbiomed, Korea

03-P418: Development of 3D Bioprinted Reconstructed Skin Models Using Native and Non-native Bioinks for Hair Follicle *In Vitro* Regeneration

Carolina Motter Catarino, Tânia Baltazar, Silvya Stuchi Maria-Engler, Pankaj Karande

Department of Chemical and Biological Engineering, Rensselaer Polytechnic Institute, Troy, NY, USA

03-P419: 3D Bioprinting of Human Skin- an In Vivo Model

Linnea Strid Orrhult, Peter Apelgren, Lars Kölby, Paul Gatenholm Chemistry and chemical engineering, Chalmers University of Technology, Gothenburg, Sweden

03-P420: Design and 3D Bioprinting of biomimetic skin grafts

Paul Gatenholm, Ian Maitland, Linnea Strid Orrhult 3D Bioprinting Center, Department of Chemistry and Chemical Engineering, Chalmers University of Technology, Goteborg, Sweden

<u>03-P421:</u> Epidermis, dermis, hypodermis bioprinting: a sun tanning 3D printed skin

Christophe Andre Marquette, Marion Albouy, Léa Pourchet , Sandrine Heraud , Amélie Thepot

Univ Lyon, Université Lyon¹, CNRS, INSA, CPE-Lyon, ICBMS, UMR 5246, France

03-P422: 3D Bioprinted Human Skin Models with RGD Modified Alginate-Nanocellulose Bioink

Patrick Thayer, Evita Ning, Linnea Orrhult, Erik Gatenholm, Hector Martinez

CELLINK LLC, USA

<u>03-P423:</u> 3D bioprinting of hydrogels with controlled release of rhEGF for chronic wound repair

Hongbo Zhang, yong shi, zhenhao xi, Lian Cen, Wenjun Zhang East China university of science and technology, China

<u>03-P424:</u> 3D Bioprinted Human Skin – a Future Replacement for Animal Testing in Cosmetics?

Isabella Bondesson, Evita Ning, Elin Pernevik, Patrick Thayer, Erik Gatenholm, Hector Martinez, **Itedale Namro Redwan** Chalmers University, Gothenburg, Sweden

03-P425: Skin regeneration of Biodegradable artificial dermis/SVF using 3D Bioprinters

HyunWoo Jo, Yu Jung Kyon, Heon Ju Lee Skin SBU, ROKIT Inc., Korea

<u>03-P426:</u> Injection molding technique for automated fabrication of bilayered skin tissue models

Stephan Cecil Fox, Jessica Polak, Marianne Schmid Daners, Mirko Meboldt

Product Development Group Zurich, Department of Mechanical and Process Engineering, ETH Zurich, Switzerland

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03-P427: In Vitro Development of 3D Printed Custom Shaped Nipple-Areola Skin Grafts

Sarah Miho Van Belleghem, Marco Santoro, Zoe Mote, John P Fisher, Peter C. W. Kim, Navein Arumugasaamy

Department of Bioengineering, University of Maryland, College Park, MD USA / Center for Engineering Complex Tissues, University of Maryland, College Park, MD USA / Sheikh Zayed Institute for Pediatric Surgical Innovation, Children's National Health System, Washington, DC, USA

03-P428: Skin grafting on 3D bioprinted cartilage constructs *in vivo*

Peter Apelgren, Matteo Amoroso, Anders Lindahl, Camilla Brantsing, Nicole Rotter, Linnéa Stridh Orrhult, Paul Gatenholm, Lars Kölby University of Gothenburg, The Sahlgrenska Academy, Institute of Clinical Sciences, Department of Plastic Surgery, Sahlgrenska University Hospital, Goteborg, Sweden

<u>03-P429:</u> Conditioned Medium of Mesenchymal Stem Cell Promotes Epithelialization and Expression of Ephrin-B2 Related to Angiogenesis in Burn Wound Healing

Dewi Sukmawati, Elvin Clara Angmalisang, Lia Damayanti, Astheria Eryani, Jeanne Adiwinata Pawitan

Department of Histology, Faculty of Medicine, Universitas Indonesia, Jakarta Indonesia / Stem Cell and Tissue Engineering Research Center (SCTE), Indonesian Medical Education and Research Institute (IMERI), Faculty of Medicine Universitas Indonesia, Indonesia

<u>03-P430:</u> Epithelial keratinocyte sheets prepared by temperatureresponsive dishes enhance the survival rate on artificial dermis

Hajime Matsumine, Wataru Kamei, Atsuyoshi Osada Department of Plastic and Reconstructive Surgery, Tokyo Womens Medical University, School of Medicine, Tokyo, Japan

03-P431: Efficacy of Cultured Epithelial Autograft after Curettage for Giant Congenital Melanocytic Nevus of the Head

Tamami Maeda, Naoki Morimoto, Kenji Kusumoto Department of Plastic and Reconstractive Surgery, Kansai Medical University, Osaka, Japan

03-P432: Development of a Simple Method for Human Fibroblast Multi-Layers in Refractory Cutaneous Ulcers

Koji Ueno, Takahiro Mizoguchi, Akira Fujita, Makoto Samura, Kimikazu Hamano

Departments of Surgery and Clinical Sciences, Yamaguchi University, Ube, Yamaguchi, Japan

<u>03-P433:</u> Human Plasma-Based Matrix released factors improve epidermal substitutes production and engraftment *in vivo*

Marina Trouillas, Maia Alexaline, Brice Magne, Muriel Nivet, Amparo Zuleta, Thomas Leclerc, Eric Bey, Bernard Coulomb, Jean-Jacques Lataillade

IRBA / INSERM U1197, France

03-P434: Improving the Efficacy of Autologous Keratinocyte Sheets on Ovine Burn Wound Healing Using a Novel Non-enzymatic Detachment Method of Cultured Sheets

Suzan Alharbi, Yosuke Niimi, Hal Hawkins, Robert Cox, Vsevolod Popov, Atsuyoshi Osada, Koji Ihara, Hiroyuki Sakurai, Donald Prough, David Herndon, Perenlei Enkhbaatar

Cell Biology Graduate Program, Department of Neuroscience and cell biology, University of Texas Medical Branch, Galveston, Texas, USA / Biological Sciences Department, King Abdulaziz University, Jeddah, Saudi Arabia

03-P435: Autologous Adipose-Derived Stem Cells Reduce Burn-Induced Neuropathic Pain

Shu-Hung Huang

Department of Surgery, School of Medicine, College of Medicine, Kaohsiung Medical University Taiwan / Division of Plastic Surgery, Department of Surgery, Kaohsiung Medical University Hospital, Taiwan

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03-P436: Tissue-Engineered Skin Substitutes with Stem Cells: a Case Series of 14 Burn Patients Indicating Clinical Effectiveness

Lucie Germain, Danielle Larouche, Bernadette Nedelec, Isabelle Perreault, Louise Duranceau, Patricia Bortoluzzi, Chanel Beaudoin-Cloutier, Amélie Dumas, Ariane Bussière, Élie Boghossian, Jonathan Kanevsky, Yannick Leclerc, James Lee, François A. Auger, Véronique J. Moulin

Department of Surgery, Faculty of Medicine, Université Laval, Québec, QC, Canada / Centre de recherche en organogénèse expérimentale de l'Université Laval/LOEX, Québec, QC, Canada / Division of Regenerative Medicine, CHU de Québec -Université Laval Research Center, Québec, Qc, Canada

03-P437: Autologous skin cell implantation for adult patients with deep burn lesions using a xenograft scaffold

Cristina Velasquillo, Roberto Sánchez-Sánchez, Mario Vélez-Palafox, Yaaziel Yaaziel Melgare jo-Ramírez, Ana Brena-Molina, Julieta García-López, Tatiana Chávez-Hermes, Lourdes Rodríguez-Rodríguez, María Esther Martínez Prado, Érick Márquez-Gutiérrez, Francisco Ferreira-Aparicio, Leslie Castañeda-Lara, Anahí Arenas-Ochoa, Clemente Ibarra

Biotechnology Department, National Institute of Rehabilitation Luis Guillermo Ibarra Ibarra, Mexico City, Mexico

03-P438: Multi-compartment collagen devices as modulators of skin fibrosis through controlled synergistic dual delivery of anti-fibrotics

Joao Q. Coentro, Dimitrios I. Zeugolis

Regenerative, Modular & Developmental Engineering Laboratory (REMODEL), National University of Ireland Galway, Galway, Ireland / Science Foundation Ireland (SFI) Centre for Research in Medical Devices (CURAM), National University of Ireland Galway, Galway, Ireland

03-P439: Improved viability of murine skin flaps using a gelatin hydrogel sheet combined with basic fibroblast growth factor (bFGF)

Masakatsu Hihara, Natsuko Kakudo, Naoki Morimoto, Fangyuan Lai, Kenji Kusumoto, Tomoya Hara, Makoto Matsui, Junichiro Jo, Yasuhiko Tabata

Department of Plastic and Reconstructive Surgery, Kansai Medical University, Osaka, Japan

03-P440: Development of diblock copolymer brushes-modified particles to release drug with specific stimulation and application to biomedical cosmetic materials

Keisuke Matsubara, Hibiki Kato, Tadashi Nakaji-Hirabayashi Graduate School of Science and Engineering, University of Toyama, Japan

03-P441: Coacervate-mediated Dual Growth Factor Delivery for Scarless Wound healing

Uiseon Park, Min-Suk Lee, Hee-seok Yang, Kyobum Kim Division of Bioengineering, College of Life Sciences and Bioengineering, Incheon National University, Incheon, Korea

03-P442: Comprehensive evaluation of mesoporous silica nanofibres as novel drug-eluting system

Miroslava Rysova, Hana Tomankova, Tomáš Zajíc, Dagmar Poláková, Jiří Maryška

Institute for Nanomaterials, Novel Technologies and Innovation, Technical University of Liberec, Liberec, Czech Republic / Institute of New Technologies and Applied Informatics, Technical University of Liberec, Czech Republic

03-P443: TiO₂ nanotubes improve soft tissue attachment on Intraosseous Transcutaneous Amputation prosthesis

Elena Giusto, Chaozong Liu, Catherine Pendegrass, Gordon Blunn, Asma Mechackra, Hongwei Ouyang

Division of Surgery and Interventional Science, University College London, London, UK 03-P444: The antimicrobial activity of diphlorethohydroxycarmalol (DPHC) and fabrication of polycaprolactone nanofiber mats containing DPHC by electrospinning

Min-Sung Kim, Gun-Woo Oh, Min-Woong Cho, Seok-Chun Ko, Young-Mog Kim, Won-Kyo Jung

Department of Biomedical Engineering, and Center for Marine-Integrated Biomedical Technology (BK21 Plus) Pukyong National University, Busan, Korea / Marine-Integrated Bionics Research Center, Pukyong National University, Busan, Korea

03-P445: Combining Skin Equivalents with Perfused Vasculature in a Multi-Organ-Chip

Katharina Schimek, Alexander Thomas, Tobias Hasenberg, Gerry Giese, Alexandra Katharina Lorenz, Uwe Marx, Roland Lauster, Gerd Lindner

Department of Medical Biotechnology, TU-Berlin, Berlin, Germany / TissUse GmbH, Berlin, Germany

<u>03-P446</u>: Poly-e--caprolactone/ β -cyclodextrin inclusion complex scaffolds for skin regeneration

Carlos Alberto Martinez Perez, Edgar Daniel Moyers, Perla Elvia Garcia-Casillas, Claudia Lucia Vargas University of the City of Juarez, Mexico

03-P447: Evaluation of Novel Keratin Templates as Dermal Equivalents for Deep Partial-Thickness Burns

Steven Zi Kuang Moay, Yee Onn Kok, Luong T. H. Nguyen, Alvin Wen Choong Chua, Dario Stupar, David Leavesley, Si Jack Chong, Shanglan Tee, Kee Woei Ng

School of Material Science and Engineering, Nanyang Technological University, Singapore

03-P449: Construction of Polyethylene Glycol (PEG)-based Threedimensional Scaffold Materializing Microenvironment of Human Dermal Fibroblasts Using PEILDVPSTV Peptide

Seong Jae Kim, Min Seong Kim, Ji Eun Park, Jung Im Yun, Hye Won Lim, Seung Tae Lee

Department of Animal Life Science, Kangwon National University, Chuncheon, Korea

<u>03-P450</u>: Construction of 3D skin models using layer-by-layer cell coating technology for international standardization of the skin model (LbL 3D Skin) as alternatives to animal testing

Takami Akagi, Masato Murakami, Mitsuru Akashi Graduate School of Frontier Bioscience, Osaka University, Japan

03-P451: Construction of Polyethylene Glycol (PEG)-based Threedimensional Scaffold Stimulating Human Dermal Fibroblasts **Proliferation Using RGDSP Peptide**

Min Seong Kim, Seong Jae Kim, Ji Eun Park, Jung Im Yun, Hye Won Lim, Seung Tae Lee

Department of Animal Life Science, Kangwon National University, Chuncheon, Korea

03-P452: The Evaluation of Apoptosis and Necrosis of Human Skin Cell Induced By High Hydrostatic Pressure

Toshihito Mitsui, Naoki Morimoto, Natsuko Kakudo, Atsushi Mahara, Kenji Kusumoto, Tetsuji Yamaoka

Department of Plastic and Reconstructive Surgery, Kansai Medical University, Osaka, Japan

03-P453: Engineering Human Dermal Fibroblasts with Impaired Migration for In Vitro Models of Aged Wound Healing: Testing of New **Biomaterial-Based Therapies for Chronic Wounds**

Elena Garcia-Gareta, Alexandra Levin, Lilian Hook Regenerative Biomaterials Group, RAFT Institute, Mount Vernon Hospital, Northwood, UK / Smart Matrix Ltd, Leopold Muller Building, Mount Vernon Hospital, Northwood, UK

03-P454: Dissecting the Role of Peripheral Glia in Murine Cutaneous Wound Healing by Single-cell RNA Sequencing

Johanna Diener, Florian Rambow, Vadims Parfejevs, Julien Debbache, Khanh Huynh, Filippo Rijli, Jean-Christophe Marine, Lukas Sommer Institute of Anatomy, University of Zurich, Zurich, Switzerland

03-P455: Defining xenobiotic metabolism in human skin and tissueengineered skin-equivalents: an in vitro and in silico approach

Craig Murdoch, Sarah A Smith, Helen E Colley, Klaudia M Slowik, Parveen Sharma, Rebecca J Shipley, Andrew Sneddon, Steve D Webb School of Clinical Dentistry, University of Sheffield, Sheffield, UK

03-P456: Development of a 3D Human Metastatic Melanoma Model for In Vitro Evaluation of Targeted Therapy Efficiency

Delphine Anne-Charlotte Morales, Florian Lombart, Agathe Truchot, Pauline Maire, Mikael Magnano, Pascale Vigneron, Marwa Hussein, Antoine Galmiche, Catherine Lok, Muriel Vayssade Department of Bio-mechanics and Bio-engineering UMR CNRS 7338, Sorbonne University, Compiegne University of Technology, Compiegne, France

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03-P457: The role of nerve-derived cells in human skin wound healing

Khanh Huynh, Vadims Parfejevs, Julien Debbache, Gaetana Restivo, Jürg Hafner, Martin Berli, Oliver Distler, Lukas Sommer Institute of Anatomy, University of Zurich, Zurich, Switzerland

<u>03-P458</u>: Developments of therapeutic agent for diabetic wounds aggravated by diesel exhaust particles using ginsenoside Rg1

Jiyun Lim, YoungKoo Lee

Orthopedic research, Bucheon hospital, collage of medicine, Soonchunhyang university, Korea

03-P459: Engineering Wound Healing using Directional Matrix Nanotopography with Varied Sizes

Daun Kim, Sunho Park, Dohyeon Lee, Woochan Kim, Sungmin Park, Sujin Kim, Jangho Kim

Department of Rural and Biosystems Engineering, Chonnam National University, Korea

<u>03-P460:</u> Omega-7 increases telomerase activity and improves ovine grafted burn wound healing

Yosuke Niimi, Pérez-Bello Dannelys, Satoshi Fukuda, Sam Jacob, Robert A Cox, Hal K Hawkins, Clark R Andersen, Jisoo Kim, Koji Ihara, Alharbi Suzan, Tuvshintugs Baljinnyam, David N Herndon, Donald S. Prough, Perenlei Enkhbaatar

Department of Anesthesiology, University of Texas Medical Branch, TX, USA

<u>03-P461:</u> Transplantation of autologous cells and microcarriers to promote wound healing

Alexander Larsson, Johan PE Junker, Kristina Briheim, Karin Gustafsson, Erika Nyman, Gunnar Kratz, Hans Vintertun Department of Clinical and Experimental Medicine, Linkoping University, Sweden

03-P462: Autologous full-thickness micro skin column grafting for wound repair without donor site scarring

Joshua Tam, Ying Wang, **Christiane Fuchs**, William Farinelli, Richard Rox Anderson

Wellman Center for Photomedicine, Massachusetts General Hospital, Boston, USA / Department of Dermatology, Harvard Medical School, Boston, USA

<u>03-P463:</u> Effects of Red-wavelengths OLED and Its *in Vitro* Differential Cell Effects

Kyoungchan Park, Hyeryung Choi, Yongmin Jeon, Jung-Won Shin, Myungsub Lim, Seungyeop Choi, Hyuncheol Kim, Jeong Hyun Kwon, Kyung Cheol Choi

Séoul National University College of Medicine, Korea / Bundang Seoul National University Hospital, Korea

P26. Tooth / Periodontal tissue

<u>03-P464:</u> Feasibility of Molecularly Targeted Therapy for Tooth Regeneration: Potential for stimulation of the formation of a third dentition

Katsu Takahashi, Honoka Kiso, Kazuyuki Saito, Akiko Murashima-Suginami, Sayaka Mishima, Yoshihito Tokita, Manabu Sugai, Yasuhiko Tabata, Kazuhisa Bessho

Department of Oral and Maxillofacial Surgery, Graduate School of Medicine, Kyoto University, Kyoto, Japan

<u>03-P465:</u> Platelet lysate-based compartmentalized systems for periodontal tissue engineering

Pedro S Babo, Xinjie Cai, Adelina S Plachokova, Alexey Klymov, Vitor E Santo, John Jansen, X Frank Walboomers, Rui L Reis, Manuela E Gomes

3B's Research Group – Biomaterials, Biodegradable and Biomimetics, Avepark – Parque de Ciência e Tecnologia, Zona Industrial da Gandra, Barco – Guimarães, Portugal / ICVS/3B's – PT Government Associate Laboratory, Braga/Guimarães, Portugal

<u>O3-P466:</u> Dimethyloxalylglycine-Embedded Poly(ε -caprolactone) Fiber Meshes Promote Odontoblast Differentiation of Human Dental Pulp Cells

Kyung Mi Woo, Yeon-Jee Yoo, Joung_hwan Oh, WooCheol Lee, Qiankun Zhang

Department of Pharmacology & Dental Therapeutics, School of Dentistry, Seoul National University, Korea

<u>03-P467:</u> The effect of four different hemo-derivative platelet rich protocols on osteoblast behaviour

Tulio Fernandez-Medina, Cedryck Vaquette, Dietmar W Hutmacher, Sašo Ivanovski

School of Dentistry, The University of Queensland, Herston, QLD, Australia

03-P468: IGSF10: An Old/New Factor Benchmarked to BMP2 and Implications in Bone Regeneration

Jin Wen, Ming Xie, Lusai Xiang, Linda He, Mariam Zade, Sainang Wang, Xinquan Jiang, Jeremy J Mao

Dept. of Orthopedic Surgery, Columbia University, New york, NY, USA / Department of Prosthodontics, Ninth People Hospital affiliated to Shanghai Jiao Tong University, School of Medicine, Shanghai, China

<u>03-P469:</u> IGF1 regulates morphogenesis of bioengineered teeth via proliferation and differentiation of dental epithelial and mesenchymal cells

Toshihito Oyanagi. Nobuo Takeshita, Mamiko Hara, Etsuko Ikeda, Toko Chida, Daisuke Seki, Michiko Yoshida, Masahiro Seiryu, Ikuko Takano, Seiji Kimura, Masamitsu Oshima, Takashi Tsuji, Teruko Takano-Yamamoto

Division of Orthodontics and Dentofacial Orthopedics, Tohoku University Graduate School of Dentistry, Sendai, Miyagi, Japan

03-P470: Bioengineered Tooth and Alveolar Bone Constructs

Pamela C Yelick, Weibo Zhang, Elizabeth E. Smith, Nelson Monteiro, Amir Fakhrzadeh, Shruti Saxena, Wei Chang, Eugene Pashuck, Joachim Kohn

Tufts University, USA

<u>03-P471:</u> Surface Modification of Artificial Tooth Root for Periodontal Tissue Reconstruction

Naoko Nakamura, Tsuyoshi Kimura, Masahiro Okada, Masahiro Yamada, Toshiya Fujisato, Akio Kishida

College of Systems Engineering and Science, Shibaura Institute of Technology, Japan **03-P472: Optimization of 3D Cell Printing for Alveolar Bone Tissue**

engineering

Nimal Thattaruparambil Raveendran, Cedryck Vaquette, Christoph Meinert, Deepak Iype, Saso Ivanovski

School of Dentistry, The University of Queensland, Brisbane, Australia

03-P473: Bioprinting-assistant Extracellular Matrix Composition Optimization for Periodontal Treatments

Yufei Ma, Yuan Ji, Tianyu Zhong School of Life Science and Technology, Xi'an Jiaotong University, Xi'an, China

<u>03-P474:</u> 3D printed microgroove patterns for angular organizations of periodontal ligament

Chan Ho Park, Yong-Moo Lee, William V. Giannobile, Yang-Jo Seol Dental Research Institute, Seoul National University, Korea

<u>03-P475:</u> The development of 3d-printed strontium-doped calcium silicate scaffold for alveolar bone regeneration

Min-Jie Fang, Ming-You Shie, Chia-Tze Kao Institute of Oral Science, Chung Shan Medical University, Taichung, Taiwan

<u>03-P476:</u> Effects of amniotic membrane as a substrate for human

periodontal ligament fibroblast cell sheet on growth factor production Takeshi Amemiya, Tetsuya Adachi, Keiji Adachi, Fumishige Oseko, Toshiro Yamamoto, Narisato Kanamura

Department of Dental Medicine, Graduate School of Medical Science, Kyoto Prefectural University of Medicine, Kyoto, Japan / Oral and Maxillofacial Surgery, Kyoto Chubu Medical Center, Kyoto, Japan

<u>03-P477:</u> Regeneration of full size teeth using decellularized tooth bud scaffolds

Weibo Zhang, Pamela C. Yelick Division of Craniofacial and Molecular Genetics, Department of Orthodontics, Tufts University School of Dental Medicine, USA

<u>03-P478:</u> BMP-2/7 heterodimer produced gene therapy for alveolar bone regeneration

Mariko Kawai, Kiyoshi Ohura Department of Pharmacology, Osaka Dental University, Japan

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03-P479: Interleukin 4-loading mesoporous silica nano particles facilitate dental pulp regeneration by functional immunomodulation

Lan Xiao, Chun Xu, Qingsong Ye, Yin Xiao

Institute of Health and Biomedical Engineering, Queensland University of Technology, Australia

<u>03-P480:</u> Development of Novel Chitosan Based Nanosphere to Prolong PRP Growth Factors Release in Dental Tissue Wound Healing

Radyum Ikono, Etik Mardliyati, Iis Tentia Agustin, Muhammad Mufarrij Fuad Ulfi, Dimas Andrianto, Uswatun Hasanah, Boy Muchlis Bachtiar, Nofa Mardianingsih, Endang Winiati Bachtiar, Nurwenda Novan Maulana, Nurul Taufiqu Rochman, Li Xianqi, Hideaki Kagami, Tokiko Nagamura-Inoue, Arinobu Tojo

Nano Center Indonesia / Department of Materials and Metallurgical Engineering, Sumbawa University of Technology / Center for Advanced Medical Research, The Institute of Medical Science, The University of Tokyo, Japan

<u>03-P481:</u> EGCG promotes osteogenic differentiation along with antiinflammatory effects in dental implant surgery: in-vitro study

Min ju Kim, Yun Gyeong Kang, Yanru Wu, Eun Jin Lee, Ji Eun Kim, Jung-Woog Shin

Department of Biomedical Engineering, Inje University, Gimhae, Korea

03-P482: A NOVEL BIPHASIC BIORESORBABLE SCAFFOLD FOR GUIDED TISSUE REGENERATION

Serkan Dikici, Betül Aldemir Dikici, Gwendolen C. Reilly, Sheila MacNeil, Frederik Claeyssens

Department of Materials Science and Engineering, Kroto Research Institute, University of Sheffield, Sheffield, UK

<u>03-P483:</u> Isolation, Characterisation and Osteogenic Differentiation of Human Periodontal Ligament Stromal Cells in vitro

Fahad Maizar Al-Dabbagh, Val V Clerehugh, Margaret Kellett, Xuebin Yang

Division of Oral Biology, School of Dentistry, University of Leeds, UK / Department of Oral Surgery, College of Dentistry, University of Mosul, Iraq

<u>03-P484:</u> Plasminogen activator inhibitor-1 promotes cementogenesis by human periodontal ligament stem cells under 3-D culture conditions

Madoka Yasunaga, Takuya Toshimitsu, Hiroki Nakashima, Sachio Tamaoki, Hiroyuki Ishikawa, Jun Ohno

Section of Orthodontics, Department of Oral Growth and Development, Fukuoka Dental College, Fukuoka, Japan / Research Center for Regenerative Medicine, Fukuoka Dental College, Fukuoka, Japan

<u>03-P485:</u> 3D human cell-based *in vitro* gingival tissue model

Chiara E Ghezzi, Margaret J Duncan, Michael H Malamy, David L Kaplan

Department of Biomedical Engineering, Tufts University, Medford, USA

<u>03-P486:</u> Tissue engineering a model of bisphosphonate-related osteonecrosis of the jaw

George D Bullock, Cheryl A Miller, Robert D Moorehead, Alasdair McKechnie, Vanessa Hearnden

Materials Science and Engineering, University of Sheffield, Sheffield, UK $% \left({{\rm{S}}_{\rm{B}}} \right)$

<u>03-P487:</u> A Clinical Report of Periodontal Regeneration Therapy by Gelatin Hydrogels Incorporating bFGF

Kiyotaka Aoki, Yasuhiko Tabata

Department of Biomaterials, Field of Tissue Engineering, Medical Sciences, Kyoto University, Japan

<u>03-P488:</u> Fluorination enhances the osteogenic capacity of porcine hydroxyapatite

Runheng Liu, Shiyu Wu, Guanqi Liu, Zetao Chen, Zhuofan Chen Guanghua School of Stomatology, Hospital of Stomatology, Sun Yat-sen University , Guangzhou, China

<u>03-P489:</u> ALK5 is essential for tooth germ differentiation during tooth development

Juan Du, Wenwen Guo

Capital Medical University School of Stomatology / Laboratory of Molecular Signaling and Stem Cells Therapy, Molecular Laboratory for Gene Therapy and Tooth Regeneration, Beijing Key Laboratory of Tooth Regeneration and Function Reconstruction, China

P27. Urinary organ

03-P490: HOMOGENEOUS BIODEGRADABLE URETERAL STENT: *IN VIVO* EVALUATION IN A PORCINE MODEL

Alexandre Barros, Carlos Oliveira, Ana Ribeiro, Riccardo Autorino, Rui Reis, Ana Rita Duarte, Estevão Lima

3B´s Research Group – Biomaterials, Biodegradables and Biomimetics, University of Minho, Headquarters of the European Institute of Excellence on Tissue Engineering and Regenerative Medicine, AvePark, Barco, Guimarães, Portugal / ICVS/3B's - PT Government Associate Laboratory, Braga/Guimarães, Portugal

<u>03-P491:</u> Non-ischemia-reperfusion and dorsal slit approach for kidney surgery in a mouse model

 ${\it SoYoung Chun}, \ Na$ Hee Yu, Jae Wook Chung , Yun Sok Ha , Bum Soo Kim, Tae Gyun Kwon

BioMedical Research Ins., Kyungpook National University Hospital, Daegu, Korea

<u>03-P492</u>: Angiogenic and neurotrophic effects of human bone marrow mesenchymal stem cell derived conditioned medium for erectile dysfunction

Seulgi Kim, Kyungha Kim, KyungHyun Moon, Hyun-Wook Kang Department of life science, Ulsan National Institute of Science and Technology, Ulsan, Korea

03-P493: Dose-dependent barrier function properties of bladder urothelium in an in-vitro model

Fatemeh Ajalloueian, Jens Jørgen Sloth, Sanaz Khademolqorani, Hossein Tavanai, Magdalena Fossum, Jons Hilborn Research Group for Nano-Bio Science, Technical University of Denmark, Kemitorvet, Lyngby, Denmark

03-P494: STEM CELL-ENRICHED COLLAGEN SCAFFOLD PROMOTES SMOOTH MUSCLE REGENERATION, VASCULARIZATION AND INNERVATION IN RAT BLADDERS AFTER PARTIAL DETRUSORECTOMY

Jakub Smolar, Maya Horst, Daniel Eberli Department of Urology, University Hospital Zurich, Zurich, Switzerland

03-P495: Exploring the Role of Modified Adipose Derived Stem Cellbased Self assembled Scaffold in the Engineering of Full Thickness Human Urethra

Zahra Rashidbenam, Mohd Hafidzul Jasman, Guan Hee Tan, Eng Hong Goh, Fam Xeng Inn, Christopher Chee Kong Ho, Zulkifli Md Zainuddin, Angela Min Hwei Ng

Tissue Engineering Centre, 12th floor, Faculty of Medicine, Hospital UKM, Cheras, Kuala Lumpur, Malaysia

<u>03-P496:</u> The composition of GMP-compliant expansion medium regulates the expression levels of CD146 and SUSD2 and the differentiation capacity of human placenta-derived mesenchymal stromal cells in vitro

Wilhelm K Aicher, Tanja Abruzzese, Frederik Peißert, Hannah D.E. Graf, Miriam Rupprecht

Dept. of Urology, University of Tuebingen Hospital, Tuebingen, Germany

<u>03-P497:</u> Functional nephron progenitors from pluripotent cells: Transition from transient phase to long-term *in vitro* maintenance

Abhishek Harichandan, Lorenzo Moroni, Carlos Mota Department of Complex Tissue Regeneration, MERLN Institute for Technology Inspired Regenerative Medicine, Maastricht, the Netherlands

<u>03-P498:</u> GMP: the challenging milestone on the way towards clinical application of hMPCs for incontinence treatment

Jenny Ann Prange, Deana Mohr-Haralampieva, Rosa Angelica Alves de Sousa, Regina Grossmann, Daniel Eberli

Department of Urology, University Hospital Zurich, Zurich, Switzerland / University of Zurich, Zurich, Switzerland

03-P499: ADIPOSE-DERIVED STEM CELL AND BLADDER SMOOTH MUSCLE CELL CO-CULTURE IMPROVES FUNCTIONAL SMOOTH MUSCLE FORMATION FOR DETRUSOR BIOENGINEERING

Jakub Smolar, Daniel Eberli, Maya Horst Department of Urology, University Hospital Zurich, Zurich, Switzerland

<u>03-P500:</u> An experimental study of topical insulin-like growth factor-1 sustained release to improve urethral wound healing in a rabbit model

Masayuki Shinchi, Toshihiro Kushibiki, Yoshine Mayumi, Keiichi Ito, Tomohiko Asano, Miya Ishihara, Akio Horiguchi

Department of Urology, National Defense Medical college, Saitama, Japan

<u>03-P501</u>: Development of nano-functionalised electrospun meshes for the management of incontinence-related problems

Elena Mancuso, Virginia Pensabene, Chiara Tonda-Turo, Peter Culmer, Piergiorgio Gentile

School of Engineering, NIBEC Institute, Ulster University, Belfast, UK / School of Mechanical Engineering, University of Leeds, Leeds, UK

<u>03-P502:</u> High biocompatibility Hyaluronic Acid/PLCL core-shell structured nanofibers scaffold for bladder regeneration

Xiaoyong Zeng, Chunxiang Feng, Chang Liu, Shiliang Liu, Zhixian Wang, Jinqian Hu, Yuxi Wang, Kai Yu, **Yunpeng Zhu** Department of Urology,Tongji Hospital,Tongji Medical College,Huazhong University of

Science and Technology, China

<u>03-P503:</u> Bladder regeneration using a PCL scaffold with growth factors EGF, VEGF and bFGF in a partial cystectomized rat model

SoYoung Chun, Jung Yeon Kim, Ho Yong Kim, Yun Sok Ha, Bum Soo Kim, Se Heang Oh, Tae Gyun Kwon

BioMedical Research Ins., Kyungpook National University Hospital, Daegu, Korea

<u>03-P504:</u> Synergy effect of stem cells into nerve differentiation with

nanofibrous meshes around the injured cavernous nerve in rats

Yun Seob Song, Hong Jun Lee, Seung Whan Doo, Jae Heon Kim, Won Jae Yang

Department of Urology, Soonchunhyang University Hospital, Seoul, Korea

03-P505: Gel casting as an approach for tissue engineering of multilayered tubular structures: application for urethral reconstruction

Melissa van Velthoven, Rana Ramadan, Barbara Klotz, Debby Gawlitta, **Miguel Castilho**, Pedro Costa, Jos Malda, Laetitia De Kort, Petra de Graaf

University medical center Utrecht / Department of Urology, the Netherland

03-P506: Molecular studies in bladder wound healing

Gisela Reinfeldt Engberg, Clara Ibel Chamorro, Xi Liu, Magdalena Fossum

Department of Women's and Children's Health, Karolinska Institutet, Stockholm, Sweden / Centrum for Molecular Medicine, Karolinska Institutet, Stockholm, Sweden / Department of Pediatric Urology, Astrid Lindgren Children Hospital, Karolinska University Hospital, Stockholm, Sweden

<u>03-P507</u>: Cell synchronization and a novel kidney extracellular matrix based hydrogel to promote efficient derivation of renal vesicles from pluripotent stem cells

Abhishek Harichandan, Silvia Bonilla Garcia, Lorenzo Moroni, Carlos Mota

Department of Complex Tissue Regeneration, MERLN Institute for Technology Inspired Regenerative Medicine, Maastricht, the Netherlands

<u>03-P508:</u> Off the shelf graft for urethral reconstruction surgery, a step closer to clinical translation

Ganesh Vythilingam, Hans Mattias Larsson, Kalitha Pinnagoda, Elif Vardar, Eva Maria Engelhardt, Selvalingam Sothilingam, C. R. Thambidorai, Tunku Kamarul, C. H. Meng, M. Hiew, R. Radzi, N Hayah, J. A. Hubbell, Peter Frey

Department of Surgery University Malaya Kuala Lumpur Malaysia / Institute of Bioengineering, École Polytechnique Fédérale de Lausanne, Switzerland

<u>03-P509:</u> Novel sclerosant foam for cyst ablation through two-photon laser for polycystic kidney treatment

Soohyun Jeong, Minhee Park, Kangwon Lee Department of Transdisciplinary Studies, Graduate School of Convergence Science and Technology, Seoul National University, Seoul, Korea

<u>03-P510:</u> Underwater Tissue Adhesive using Coacervated Mussel Adhesive Protein for Repair of Vesicovaginal Fistulae

 $\ensuremath{\text{Hyo}}$ Jeong Kim, Jong Hyun Pyun, Seung Goo Yun, Seok Ho Kang, Hyung Joon Cha

Department of Chemical Engineering, POSTECH, Pohang, Pohang, Korea

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<u>03-P511:</u> Isolation of osteotropic prostate cancer cells with an osteomimetic microfluidic device

Sia Ming Wei, Nishanth Menon, Jerry Chan, Lee Lui Shiong, Roger Kamm, Mark Chong Nanyang Technological University, Singapore

variyang Technological Oniversity, Singapor

P28. Visual / Auditory sense

<u>03-P512:</u> The curative effect of collagen-gelatin sponge sustained release of bFGF for tympanic membrane perforation on animal model

Rie Tanaka Horie, Hideaki Ogita, Naoki Morimoto, Yasuhiko Tabata Department of Regeneration of science and engineering of Biomaterials, University of Kyoto, Kyoto, Japan / Department of Otorhinolaryngology, Head and Neck surgery, Kyoto University, Kyoto, Japan / Department of Otolaryngology, Shiga Medical Center for Children, Japan

<u>03-P513:</u> Corneal endothelial cells culture methods in vitro for cornea regeneration

Boyoung Jung, Ji Won Lee, Hungwon Tchah, Changmo Hwang Department of Medical Engineering, College of Medicine, University of Ulsan, Seoul, Korea / Department of Medical Engineering R&D Center, Asan Institute for Life Sciences, Korea

03-P514: Self-assembling collagen-like-peptide nano-implants as stem cell loaded substitutes to human cornea transplantation

Michel Haagdorens, Jaganmohan Jangamreddy, Mohammed Mirazul Islam, Eline Melsbach, Per Fagerholm, Vytautas Cepla, Ramunas Valiokas, Nadia Zakaria, Monika Kozak-Ljunggren, Marie-José Tassignon, Sofie Thys, Isabel Pintelon, May Griffith Department of Ophthalmology, University of Antwerp, Antwerp, Belgium / Department of Ophthalmology, Antwerp University Hospital, Edegem, Belgium

03-P515: Engineered corneas from decellularized xenogenic tissues Julia Fernandez-Perez, Mark Ahearne

Trinity Centre for Bioengineering, Trinity Biomedical Sciences Institute, Trinity College Dublin, Dublin, Ireland / Department of Mechanical and Manufacturing Engineering, Trinity College Dublin, Dublin, Ireland

<u>03-P516:</u> Corneal Bioprinting Utilizing Hydrogels and Corneal Stromal Keratocytes

Daniela F Duarte Campos. Malena Rhode, Mitchell Ross, Parham Anvari, Andreas Blaeser, Michael Vogt, Peter Walter, Horst Fischer, Matthias Fuest

Department of Dental Materials and Biomaterials Research, RWTH Aachen University Hospital, Aachen, Germany

<u>03-P517:</u> Functionally designed nano-scaffolds for the regeneration of chronic tympanic membrane perforations

Hoon Seonwoo, Beomyong Shin, Kyoung-Je Jang, Taeyoung An, Yun-Hoon Choung, Jong Hoon Chung

Department of Industrial Machinery Engineering, Sunchon National University, Suncheon-si, Jeollanam-do, Korea

03-P518: Decellularized ECM Bio-inks Manufactured from Cell Sheet Technology

MinChae Lee, Seung Jin Kim, Joshua Kim ROKIT ink, Seoul, Korea

03-P519: Magnetic Iron Oxide Nanoparticles for MRI Tracking of Human Embryonic Stem Cell-Derived Photoreceptor Precursors Cells

Daejoong Ma, Un Chul Park, Mi-Sun Lim, Jung-Bum Park, Myung Soo Cho, Hyeong Gon Yu

Department of Ophthalmology, College of Medicine, Seoul National University, Seoul, Korea / Retinal Degeneration Research Lab, Seoul National University Hospital Biomedical Research Institute, Seoul, Korea

<u>03-P520:</u> Human Sclera Maintains Common Characteristics with Cartilage throughout Evolution

Yuko Seko, Noriyuki Azuma, Masashi Toyoda, Ichiro Sekiya, Akihiro Umezawa

Department of Rehabilitation for Sensory Functions, Research Institute, National Rehabilitation Center for Persons with Disabilities, Saitama, Japan

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<u>03-P521:</u> Cell culture simulation based on Multi-agent computational model describing behavior of cells cultured in production of a corneal epithelial cell sheet to predict its quality

Fumio Togawa, Masaki Tamada, Ryo Taniguchi, Taichi Shimura, Koichi Baba, Kohji Nishida, Ken-ichiro Hata, Kei Sasaki, Masahiro Kino-oka KOZO KEIKAKU ENGINEERING Inc., Japan

O3-P522: Influence of Material Stiffness on a Corneal Epithelial Cell Line Sophia Masterton, Mark Ahearne

Trinity Centre for Bioengineering, Trinity Biomedical Sciences Institute, Trinity College Dublin, Ireland

<u>03-P523:</u> Mechanical stimulation and inducing medium synergistically promote the differentiation of PDLSCs into corneal keratocytes

Jialin Chen, Wei Zhang, Ludvig J. Backman, Peyman Kelk, Patrik Danielson

Department of Integrative Medical Biology, Umea University, Umea, Sweden

03-P524: Nano-Surface modified Recombinant Human Collagen type I Hydrogels as Superior Carriers for Corneal Epithelial Stem Cells

Michel Haagdorens, Aneta Liszka, Arturas Ulcinas, Vytautas Cepla, Ramunas Valiokas, Ayan Samantha, Monika Kozak-Ljunggren, Nadia Zakaria, Nadav Orr, Amit Yaari, Oded Shoseyov, Sofie Thys, Isabel Pintelon, Marie-José Tassignon, May Griffith

Department of Ophthalmology, University of Antwerp, Antwerp, Belgium / Deptartment of Ophthalmology, University Hospital of Antwerp, Edegem, Belgium

<u>03-P525</u>: Development of retinal degeneration model in vitro and identification of retinal regeneration inducing factors

Yukihiro Baba, Sumiko Watanabe

Department of Molecular and Developmental Biology, Institute of Medical Science, University of Tokyo, Tokyo, Japan

<u>03-P526</u>: Three-dimensional Stem Cell Niche for Cultivated Oral Mucosal Epithelial Transplantation and its Application for Corneal Reconstruction

Kevin Sheng-Kai Ma, Yi-Jen Hsueh, Hung-Chi Chen Perelman School of Medicine, University of Pennsylvania / Department of Ophthalmology, Chang Gung Memorial Hospital / Department of Physics, National Taiwan University, Taiwan

<u>03-P527:</u> A Novel Preservation Technique for Long-Term Storage and Ambient Temperature Distribution of Transplantable Human Corneas

Laura E Sidney, Owen D McIntosh, Emily R Britchford, Andrew Hopkinson

Academic Ophthalmology, Division of Clinical Neuroscience, University of Nottingham, Nottingham, UK

P29. Others

<u>03-P528:</u> Bone Marrow Endothelial Stem Cell Therapy in Ischemic Diabetic foot

Mehmet Bozkurt, Perçin Karakol, Bilgehan İlker, Oğuzhan Demirel, Tevfik Balıkçı, Can Uslu, Burak Ergün Tatar

Department of Plastic, Reconstructive and Aesthetic Surgery ,BAGCILAR EDUCATION and RESEARCH HOSPITAL , ISTANBUL , TURKEY

<u>03-P529:</u> Modeling vascularized glomeruli in vitro using a microfluidics chips based approach

Su-Jun Oh, Noo-Li Jeon, Andreas Kurtz

Berlin-Brandenburg Center for Regenerative Therapies, Berlin, Germany

<u>03-P530</u>: Development of large-scale single-use bioreactor system for a megakaryocytic progenitor cell line

Tomohiro Tokura, Retno Wahyu Nurhayati, Hiroyuki Matsuda, Yoshihiro Ojima, Takeaki Dohda, Masahiro Kino-Oka Fujimori Kogyo Co., Ltd., Tokyo, Japan

<u>03-P531:</u> Development of Waterproof Humidifying Bag Type Container using a Polyethersulfone Nanofiber Sheet Membranes.

Toshihiko Okazaki

Molecular and Cell Processing Center, Kyushu University Hospital, Kyushu, Japan

03-P532: Validation of Analytical Procedures using BacT/ALERT 3D Microbial Detection System

Toshihiko Okazaki, Kaori Kajitani, Motoko Fukunaga, Rie Sonoi, Yoshihiro Tanaka, Yoichi Nakanishi

Molecular and Cell Processing Center, Kyushu University Hospital, Fukuoka, Japan / ARO Advanced Medical Center, Kyushu University Hospital, Fukuoka, Japan

<u>03-P533:</u> Development of hybrid cell sheets using peritoneum and MSC for prevention of anastomotic leakage after operation of rectal cancer in a rat model

Shota Aoyama, Takeshi Ohki, Tomoko Kuriyama, Masayuki Yamato, Tatsuya Shimizu, Masakazu Yamamoto

Department of Surgery, Tokyo Women's Medical University, Tokyo, Japan <u>03-P534:</u> Surfactant-free solubilization and systemic delivery of anti-cancer drug using low molecular weight methylcellulose

Yong-Hee Kim, Jee Young Chung, Yoonsung Song, SeokBeom Yong, HyunJoon Wee

Department of Bioengineering, BK 21 Plus Future Biopharmaceutical Human Resources Training and Research Team, Hanyang University, Seoul, Korea

<u>03-P535:</u> First in human clinical trial of treatment of familial LCAT deficiency syndrome by self-transplantation of therapeutic-enzyme secreting adipocytes

Masayuki Kuroda, Ko Ishikawa, Yoshitaka Kubota, Nobuyuki Mitsukawa, Ayako Tawada, Yasuyuki Aoyagi, Sakiyo Asada, Tokuo Yamamoto, Shunichi Konno, Shigeaki Tanaka, Masami Tanio, Masayuki Aso, Yasushi Saito, Jun Wada, Koutaro Yokote Center for Advanced Medicine, Chiba University Hospital, Chiba, Japan

<u>03-P536</u>: A novel technology for lifelong treatment of intractable plasma protein deficiency: *Ex vivo*-manipulated adipocytes for sustained secretion of therapeutic proteins

Yasuyuki Aoyagi, Masayuki Kuroda, Sakiyo Asada, Akinobu Onitake, Mika Kirinashizawa, Tokuo Yamamoto, Shigeaki Tanaka, Shun-ichi Konno, Masami Tanio, Yasushi Saito, Kotaro Yokote, Masayuki Aso CellGenTech, Inc., Chiba, Japan.

03-P537: Effect on Cell culture environment from Earthquake

Koki Abe, Isao Tanaka, Takashi Kakimoto, Hodaka makino, Hirotsugu Kubo, Masaaki Saruta

SHIMIZU CORPORATION, Institute of Technology, Japan

<u>03-P538</u>: Development of a novel modular system for cell production: an assessment for improvement of production efficiency by changing the operation method

Manabu Mizutani, Kentaro Nakajima, Kazuhiro Fukumori, Masahiro Kino-oka

Graduate School of Engineering, Osaka University, Osaka, Japan

03-P539: Nano-Cucumis: Anti-microbial and Anti-biofilm Nanocomplex Jonghoon Choi

Department of Biomedical Engineering, School of Integrative Engineering, Chung-Ang University, Seoul, Korea

03-P540: An Industrially Scalable Small Molecule Gelator with Applications in Tissue Engineering and Regenerative Medicine

Laurens Albert J Rutgeerts, Al Halifa Soultan, Ramesh Subramani, Jennifer Patterson, Wim Michel De Borggraeve Department of Chemistry, KU Leuven, Leuven, Belgium

<u>03-P541:</u> Phase Transformation of Graphene Oxide and its Biomedical Applications

Guan-Yu Chen

Institute of Biomedical Engineering, College of Electrical and Computer Engineering, National Chiao Tung University, Taiwan

<u>03-P542</u>: Synthesis of sub 3 nm-sized uniform magnetite nanoparticles using reverse micelle method and examination of its biological compatibility

Gun-Jae Jeong, Euiyoung Jung, Ahyoung Cho, Byungkwon Lim, Sung-Won Kim, Suk Ho Bhang, Taekyung Yu, Dong-Ik Kim Division of Vascular Surgery, Sungkyunkwan University School of Medicine, Seoul, Korea

03-P543: Cartridge type microfluidic system for Body on a Chip applications

Masaya Hagiwara

NanoSquare Research Institute, Osaka Prefecture University, Osaka, Japan

03-P544: Development of Comprehension Evaluation System for Laws and Regulations of Regenerative Medicine

Toshihiko Okazaki, Rie Sonoi, Motoko Fukunaga, Kaori Kajitani, Yoshihiro Tanaka, Yoichi Nakanishi

Molecular and Cell Processing Center, Kyushu University Hospital, Fukuoka, Japan / ARO Advanced Medical Center, Kyushu University Hospital, Fukuoka, Japan

03-P545: DIFFERENTIATION OF HUMAN AMNIOTIC FLUID STEM CELLS **CULTURED ON BIOMATERIALS HAVING NANOSEGMENTS**

Yu-Ru Huang, Akon Higuchi Department of CHME, University of NCU, Zhong Li, Taiwan

03-P547: EGF and 3D alginate scaffold improved oocyte-like cells differentiation

Soghra - Bahmanpour, Azam - Soleimani, Tahereh - Talaei khozani, Soghra - Bahmanpour

Department of Anatomy, Shiraz Medical University, Shiraz, Iran

03-P548: Enhancing the Study of Wound Healing through a Multiplexing Approach of an In vivo Negative Pressure Wound Therapy Porcine Model

Adam J. Mellott, Christopher A. Neal, Ashley Pistorio, Heather E. Shinogle-Decker, Jennifer G. Nelson-Brantley, Molly Steed, Richard Korentager, David S. Zamierowski

Department of Plastic Surgery, University of Kansas Medical Center, Kansas City, KS, USA

03-P549: Modulatory effects of vitamin C on microRNA expression on murine ovarian follicles grown in vitro

Yoon Young Kim, Seung-Yup Ku, Yong Jin Kim, Hoon Kim, Chang suk Suh

Dept of Obstetrics and Gynecology, Seoul National University Hospital, Korea

<u>03-P550</u>: Use of hyperpolarized magnetic resonance spectroscopy (HP-MRS) in cell and tissue engineering

Yoichi Takakusagi, Kaori Takakusagi, Kaori Inoue, Kazuhiro Ichikawa Department of Molecular Imaging and Theranostics, National Institute of Radiological Sciences (NIRS), National Institutes for Quantum and Radiological Science and Technology (QST), Chiba, Japan / Incubation Center for Advanced Medical Science, Kyushu University, Maidashi, Higashi-ku, Fukuoka, Japan

03-P551: Lectin profile variation in mesenchymal stem cells derived from different sources

Tahereh Talaei-Khozani, Elaheh Aleahmad, Zahra Vojdani, Elham Aliabadi

Department of Anatomy, Shiraz University of Medical sciences, Shiraz, Iran

03-P552: Innovative Gas Phase Sterilization System for Aseptic **Cleanroom Operation**

Toshihiko Okazaki

Molecular and Cell Processing Center, Kyushu University Hospital, Kyushu, Japan

03-P553: Lectin histochemisry showed a heterogeneous population of

cells among human mesenchymal stem cells isolated from adipose tissue Elham Aliabadi, Fariba Zarifi, Shima Rafiee, Maryam Borhan-Haghighi,

Tahereh Talaei-Khozani

Anatomy department, Shiraz University of medical Sciences, Shiraz, Iran

03-P554: Delayed fraction injection of PRP promotes autologous fat graft regeneration

Yuan Aria Li

Department of Plastic Surgery, Union Hospital, Tongji Medical College, Huazhong University of Science and Technology, Wuhan, China, Japan