

Poster Presentations from Concurrent Talks

Guest Symposium III: Sponsored by the Alport Syndrome Foundation

B001 Poster Session I

Modelling Alport syndrome using patient-derived kidney organoids

Pinyuan Tian¹, Susan J. Kimber¹, Daniel P. Gale², Rachel Lennon¹, ¹*University of Manchester*, ²*University College London*

B002 Poster Session II

Collagen Hybridizing Peptide: New Molecular Probe for In Vitro and In Vivo Detection of Degraded and Denatured Collagen

Michael Yu, *University of Utah*

Concurrent Session 1: Matricellular Proteins

B003 Poster Session I

Activation of cancer-associated fibroblasts is required for metastasis in a murine model of melanoma

Andrew Leask¹, Krista Vincent², David Holdsworth¹, Lynne-Marie Postovit², James Hutchenreuther¹, ¹*University of Western Ontario*, ²*University of Alberta*

B004 Poster Session II

Dysregulation of matricellular protein thrombospondin-2 in diabetes, TSP2 deficient hydrogel derived from extracellular matrix accelerates diabetic wound healing.

Britta Kunkemoeller, Aaron H. Morris, Tara Bancroft, Hudson Lee, Danielle K. Stamer, Jason Wu, Marina Tan, Kevan Herold, Carlos Fernandez-Hernando, Themis R. Kyriakides, *Yale University*

B005 Poster Session I

Connective Tissue Growth Factor Is Secreted as A Preproprotein that Requires Proteolytic Activation

Ole J. Kaasboell¹, Ashish K Gadicherla¹, Jian-Hua Wang², Vivi Talstad Monsen¹, Else Marie Valbjørn Hagelin¹, Meng-Qiu Dong², Håvard Attramadal¹, ¹*Oslo University Hospital, Institute for Surgical Research, Norway*, ²*National Institute of Biological Sciences, Beijing, China*

B006 Poster Session II

SPARC Produced by Bone-Marrow Derived Cells Contributes to Myocardial Fibrosis

Hannah Riley¹, Ryan Kelly¹, Lindsay McDonald¹, An Van Laer¹, Catalin Baicu¹, Amanda LaRue^{1,2}, Michael Zile^{1,2}, Amy Bradshaw^{1,2}, ¹*MUSC*, ²*Ralph H. Johnson Veterans Affairs Medical Center*

Concurrent Session 2: Proteoglycans

B007 Poster Session I

Versican is required for primary hematopoiesis and yolk sac vasculogenesis in the mouse embryo.

Sumeda Nandadasa, Anna O'Donnell, Suneel S. Apte, *Cleveland Clinic Lerner Research Institute*

B008 Poster Session II

Endorepellin evokes a pro-mitophagic transcriptomic signature and regulates mitochondrial homeostasis in endothelial cells

Thomas, Neill, Renato V. Iozzo, *Thomas Jefferson University*

B009 Poster Session I

ADAMT5 is coupled with mechanical load during mandibular condylar development

Alexandra Rogers, Sarah Cisewski, Ashton Lancaster, Alura Luck, Christine Kern, *Medical University of South Carolina*

B010 Poster Session II

Biofabrication of an ideal ECM mimetic to function as a small diameter artery.

William D. Wagner, Harleigh J. Warner, *Wake Forest University School of Medicine*

Concurrent Session 3: Collagens

B011 Poster Session I

VPS33b is essential for collagen homeostasis

Joan Chang^{1,2}, Adam Pickard^{1,2}, Antony Adamson^{1,2}, Karl E Kadler^{1,2,3}, ¹*Wellcome Centre for Cell-Matrix Research*, ²*University of Manchester*, ³*Manchester Academic Health Science Centre*

B012 Poster Session II

Zebrafish round mutations reveal a novel post-Golgi collagen secretory pathway linked to a developmental TICCA syndrome

Gokhan Unlu¹, Kinsey Qi², Amy Rushing², Eric Gamazon³, Nisha Patel⁴, Mais Hashem⁴, Abdullah AlFaifi⁵, Fowzan Alkuraya⁴, Nancy Cox³, Ela Knapik³, ¹*Vanderbilt University*, ²*Vanderbilt University Medical Center*, ³*Vanderbilt Genetics Institute*, ⁴*King Faisal Specialist Hospital and Research Center*, ⁵*Security Forces Hospital in Riyadh*

B013 Poster Session I

A fibronectin matrix-based mechanism for proteolytic processing of procollagen I

Jared Saunders, Jean Schwarzbauer, *Princeton University*

B014 Poster Session II

Structural insights into collagen lysyl hydroxylases

Hou-Fu Guo¹, Chi-Lin Tsai², Masahiko Terajima³, Xiaochao Tan¹, Priyam Banerjee¹, Mitchell D. Miller⁴, Xin Liu¹, Jiang Yu¹, Jovita Byemerwa¹, Sarah Alvarado⁴, Tamer Kaoud^{5,6}, Kevin N. Dalby^{5,6}, Neus Bota-Rabassedas¹, Yulong Chen¹, Mitsuo Yamauchi³, John A. Tainer², George N. Phillips, Jr.⁴, Jonathan M. Kurie¹, ¹*Department of Thoracic/Head and Neck Medical Oncology, The University of Texas MD Anderson Cancer Center*, ²*Department of Molecular and Cellular Oncology, The University of Texas MD Anderson Cancer Center*, ³*North Carolina Oral Health Institute, School of Dentistry, University of North Carolina at Chapel Hill*, ⁴*Department of Biosciences, Rice University*, ⁵*Division of Medicinal Chemistry, Targeted*

Therapeutic Drug Discovery and Development Program, College of Pharmacy, The University of Texas at Austin, ⁶Division of Chemical Biology & Medicinal Chemistry, College of Pharmacy, The University of Texas at Austin.

Special Interest Session I: Extracellular Vesicles- The Next SMALL Thing

B015 Poster Session I

Tumor Exosomes: From Mediators of Systemic Disease to Biomarkers of Metastatic Spread

Irina Matei, *Weill Cornell Medicine*

B016 Poster Session II

Chemoexosomes secreted by myeloma cells enhance osteoclast formation and promote aggressive bone disease

Shyam Kumar Bandari, Rada Amin, Kauslendra Tripathi, Zhengi Shi, Xu Feng, Elezabeth E. Brown, Ralph D. Sanderson, *University of Alabama at Birmingham*

B017 Poster Session I

Inflaming the Masses: Glioma EVs Promote Inflammatory, Degradative, and Metabolic Responses in Normal Brain Cells

Michael Graner, Mary Wang, Anthony Fringuello, Andrew Bubak, Maria Nagel, Petr Pauckek, *University of Colorado Anschutz Medical Campus*

Concurrent Session 4: Elastic Fiber Proteins

B018 Poster Session II

Fibulin-4 deficiency differentially affects TGF β signaling as well as cytoskeleton structure and dynamics

Joyce Burger¹, Paula van Heijningen¹, Gert-Jan Kremers¹, Gert van Cappellen¹, Hiromi Yanagisawa², Roland Kanaar¹, Ingrid van der Pluijm¹, Jeroen Essers¹, ¹*Erasmus Medical Center*, ²*University of Tsukuba*

B019 Poster Session I

Molecular interaction between elastogenic proteins impacting matrix assembly and function

Heena Kumra*, Valentin Nelea*, Dieter P. Reinhardt, *McGill University* *Co-First Authors

B020 Poster Session II

Smooth muscle and endothelial cell contributions to arterial elastin deposition

M. Catalin Staiculescu, Chien-Jung Lin, Robert P. Mecham, Jessica E. Wagenseil, *Washington University*

B021 Poster Session I

Aortic Smooth Muscle Cell Elastogenesis Driven by Adipose-Derived Mesenchymal Stem Cell Secreted Factors

Aneesh K. Ramaswamy, Rachel E. Sides, David A. Vorp, Justin S. Weinbaum, *University of Pittsburgh*

Concurrent Session 5: Matrix in Morphogenesis

B022 Poster Session II

Dystroglycan regulates signaling pathways critical to postnatal brain development

Holly Colognato, Freyja McClenahan, Himanshu Sharma, Andrea Arreguin, Azeez Aranmolate, *Stony Brook University*

B023 Poster Session I

ECM omics identifies signature ECMs for the sites of inter-tissue interactions in mouse hair follicles

Ko Tsutsui¹, Hiroki Machida¹, Asako Nakagawa¹, Chun-Chun Cheng¹, Sean D. Keeley¹, Chiharu Tanegashima¹, Yasuko Tomono², Kiyotoshi Sekiguchi³, Kisa Kakiguchi¹, Shigenobu Yonemura¹, Hironobu Fujiwara¹, ¹*Riken Center for Biosystems Dynamics Research*, ²*Shigei MRI*, ³*Osaka University*

B024 Poster Session II

ADAMTS9 and ADAMTS20 have a dual function in ECM remodeling and biogenesis of the primary cilium

Sumeda Nandadasa, Lauren W. Wang, Anna O'Donnell, Caroline M. Kraft, Rushabh Patel, Heon Yung Gee, Kay Grobe, Timothy C. Cox, Friedhelm Hildebrandt, and Suneel S. Apte, *Cleveland Clinic Lerner Research Institute*

B025 Poster Session I

Mouse B3glct knockout: a model for congenital hydrocephaly and craniofacial and skeletal dysmorphism

Bernadette C. Holdener¹, Richard C. Grady¹, Daniel Cameron¹, Christopher J. Percival¹, Javier C Jimenez-Vega¹, David E. Komatsu¹, Sardar Uddin¹, June Goto², Natalia Peunova¹, Helene Benveniste³, Hedok Lee³, Takashi Sato⁴, Hisashi Narimatsu⁴, Steven J. Bernardinelli⁵, Ao Zhang⁵, and Robert S. Haltiwanger^{1,5}, ¹*Stony Brook University*, ²*Cincinnati Children's Hospital*, ³*Yale University*, ⁴*National Institute of Advanced Industrial Science and Technology in Japan*, ⁵*University of Georgia*

Concurrent Session 6: Structure & Assembly of ECM

B026 Poster Session II

Collagen IV scaffolds are coated with agrin/perlecan: a unique organizational feature of a model basement membrane.

Elena Pokidysheva¹, Chetyrkin S¹, Boudko SP¹, Colon S¹, Bhave G¹, Zientek K², Rafi M¹, Lennon R³, UK, Hudson BG¹, ¹*Vanderbilt University Medical Center*, ²*Shriners Hospital for Children*, ³*University of Manchester*

B027 Poster Session I

Formation of lamellae in the corneal stroma: New insights in the underlying pathomechanism of keratoconus

Uwe Hansen¹, Melanie Timmen¹, Martin Götte³, Richard Stange¹, Thomas Pap¹, Nicole Eter² and Maged Alnawaiseh², ¹*Institute for Musculoskeletal Medicine, University Hospital Muenster*, ²*Department of*

Ophthalmology, University of Muenster Medical Center, ³ Department of Gynecology and Obstetrics, University Hospital Muenster

B028 Poster Session II

Hyaluronic Acid-Mediated Macromolecular Crowding to Stimulate Human Cell-Derived Matrix Deposition

Dalia Shendi¹, Julia Marzi², Will Linthicum¹, David M. Dolivo¹, Qi Wen¹, Tanja Dominko¹, Katja Schenke-Laylan², Marsha W. Rolle¹, ¹*Worcester Polytechnic Institute, ²University of Tubingen*

B029 Poster Session I

Proteomic analysis of extracellular matrix dynamics during mouse forelimb development

Kathryn R. Jacobson, Alexander R. Ocken, Alita F. Miller, Tamara L. Kinzer-Ursem, Sarah Calve, *Purdue University*

Concurrent Session 7: ECM of Inflammation, Infection and Immunity

B030 Poster Session II

ADAMTS7 and influenza virus immunity.

John Stambas¹, Meagan McMahon¹, Siying Ye¹, Daniel Dlugolenski¹, Ralph Tripp², Daniel McCulloch¹, ¹*Deakin University, ²University of Georgia*

B031 Poster Session I

Thrombospondin-4 Produced by Pro-inflammatory Macrophages Promotes Inflammation

Mohammed Tanjimur Rahman, Santoshi Muppala, Irene Krukovets, Jasmine Gajeton, Dmitriy Verbovetskiy, Edward F. Plow, Olga Stenina-Adognravi, *Lerner Research Institute Cleveland Clinic*

B032 Poster Session II

Extracellular Superoxide Dismutase (EC-SOD) knockout mice have worse alveolarization, inflammation and cytokine elaboration after neonatal hyperoxia exposure

Rashmin C. Savani, John Ibrahim, Jie Liao, Naeun Cheong, Christopher Longoria, *University of Texas Southwestern Medical Center*

B033 Poster Session I

Distinct sorting of subsets of extracellular vesicles expressing CD63, MHC class 1, and CD47 in cell-cell communication

Sukhbir Kaur¹, David D. Roberts¹, Abdel G. Elkahlon², Weiwei Wu², Arakelyan, Anush³, Leonid Margolis³, Satya P. Singh⁴, ¹*Laboratory of Pathology, Center for Cancer Research, National Cancer Institute, National Institutes of Health, ² Cancer Genetics Branch, National Human Genome Research Institute, National Institutes of Health, ³ Section of Intercellular Interactions, Eunice Kennedy-Shriver National Institute of Child Health and Human Development, National Institutes of Health, ⁴ Inflammation Biology Section, National Institute of Allergy and Infectious Diseases, National Institutes of Health.*

Concurrent Session 8: Mechanosensing

B034 Poster Session II

Non-Coding Mechanogenomic Regulation Identified In Human Cardiomyocytes

Adam J. Engler, *UC San Diego*

B035 Poster Session I

Mechanical cell communication and its influence on organization of cellular structures

Daniel Rüdiger, Angelika Vollmar, Stefan Zahler, *Ludwig-Maximilians University Munich Department of Pharmacy*

B036 Poster Session II

Mechanotransduction of the endothelial glycocalyx mediates nitric oxide production through activation of TRP channels

X. Frank Zhang¹, Matthew A. Dragovich¹, Daniel Chester¹, Bing-mei Fu², ¹*Lehigh University*, ²*The City University of New York*

B037 Poster Session I

Myosin II Governs Intracellular Pressure and Traction Stress by Distinct Mechanisms

Kimheak Sao¹, Tia Jones¹, Andrew Doye², Galina Schevzov³, Peter Gunning³, Ryan Petrie¹, ¹*Drexel University*, ²*National Institutes of Health*, ³*University of New South Wales*

Concurrent Session 9: Tumor Microenvironment

B038 Poster Session II

DDR1 regulates the construction of a dormancy-supportive niche by coordinating the assembly of a pro-quiescence ECM proteome

Julie Di Martino¹, Rita Nobre^{1,2,3}, Eduardo Farias¹, Chandrani Mondal¹, Robert Morabito⁴, Ben Martin⁴, David Matus⁴, Elana Fertig⁵, Alexandra Naba⁶, Julio Aguirre-Ghiso^{1,2}, Jose Javier Bravo-Cordero¹
¹*Department of Medicine, Division of Hematology and Oncology, The Tisch Cancer Institute, Icahn School of Medicine at Mount Sinai*, ²*Department of Otolaryngology, Department of Oncological Sciences, Black Family Stem Cell Institute, Mount Sinai School of Medicine*; ³*Abel Salazar School of Biomedicine, Porto University, PT*; ⁴*Biochemistry and Cell Biology Department, Stonybrook University*, ⁵*Department of Oncology, Sidney Kimmel Comprehensive Cancer Center, Johns Hopkins University*, ⁶*Department of Physiology & Biophysics, University of Illinois at Chicago*

B039 Poster Session I

Stromal PTEN regulates extracellular matrix organization in the mammary gland

Caitlin Jones¹, Anisha Hammer¹, YouJin Cho¹, Gina Sizemore¹, Edna Cukierman², Lisa Yee³, Samir Ghadiali¹, Michael Ostrowski⁴, Jennifer Leight¹, ¹*The Ohio State University*, ²*Fox Chase Cancer Center*, ³*City of Hope*, ⁴*Medical University of South Carolina*

B040 Poster Session II

Targeting CD47 as a therapeutic strategy for breast cancer prevention.

Tiffany M. Newman, Elizabeth R. Stirling, Adam Wilson, Katherine L. Cook, David R. Soto-Pantoja, *Wake Forest School of Medicine*

B041 Poster Session I

Exploiting the ECM for noninvasive imaging of tumor progression and metastases

Noor Jailkhani¹, Jessica R Ingram², Mohammad Rashidian³, Steffen Rickelt¹, Chenxi Tian¹, Hidde L Ploegh³ and Richard O Hynes^{1,4}, ¹*David H Koch Institute for Integrative Cancer Research, Massachusetts Institute of Technology* ²*Department of Cancer Immunology and Virology, Dana Farber Cancer Institute*, ³*Program in Cellular and Molecular Medicine, Boston Children's Hospital*, ⁴*Howard Hughes Medical Institute*

Concurrent Session 10: ECM of Aging

B042 Poster Session II

Alterations in Protein Composition of Aging, Photoaging, and Anti-inflammatory Aging models of the Skin with a Focus on the Extracellular Matrix

Ryan C Hill¹, Taihao Quan², Kelly Higa¹, James DeGregori¹, Gary J Fisher², Kirk C Hansen¹, ¹*University of Colorado-Denver*, ²*University of Michigan*

B043 Poster Session I

Circulating fibrillin-1 among older US men without diabetes: associations with angina, obesity and high density lipoprotein

Lynn M Marshall¹, Eric J Carlson², Carrie M Nielson¹, Elsa S Strotmeyer³, Cherrie Z Abraham¹, Amir F Azarbal¹, William S Evans⁴, Eric S Orwoll¹, Lynn Y Sakai^{1,2}, ¹*Oregon Health and Science University*, ²*Shriners Hospital for Children*, ³*University of Pittsburgh*, ⁴*Duke University*

B044 Poster Session II

Hyaluronan and TSG-6 in Alzheimer's Disease Neuropathology

May J. Reed¹, Mamatha Damodarasamy¹, Jasmine Pathan¹, Christina K Chan², Charles Spiekerman¹, Thomas N Wight², William A. Banks^{1,3}, Anthony J Day⁴, Robert B. Vernon², C Dirk Keene¹, ¹*University of Washington*, ²*Benaroya Research Institute*, ³*VA Puget Sound Health Care System*, ⁴*Wellcome Trust Centre for Cell-Matrix Research, University of Manchester*

B045 Poster Session I

Senescence diminishes the responsiveness of primary human mesenchymal stem cells to substrate stiffness

Venkatesh Mallikarjun¹, Oana Dobre¹, Mark R. Jackson¹, Hamish T.J. Gilbert¹, Stephen M. Richardson², Joe Swift¹, ¹*Wellcome Centre for Cell-Matrix Research, University of Manchester*, ²*University of Manchester*

Concurrent Session 11: Cardiovascular ECM

B046 Poster Session II

The Discoidin Domain Receptor-1 Acts as a Mechanotransducer in Vascular Smooth Muscle Cells to Promote Vascular Calcification

David Ngai, Michelle Bendeck, *University of Toronto Department of Laboratory Medicine and Pathobiology, Translational Biology and Engineering Program (TBEP), and Ted Rogers Centre for Heart Research*

B047 Poster Session I

4-phenylbutyrate promotes vascular smooth muscle cell recruitment and reduces intracerebral hemorrhage severity in Col4a1 mutant mice

Genki Hayashi, Cassandre Labelle-Dumais, Mao Mao, Rebekah Aldrich, Douglas B Gould, *University of California San Francisco*

B048 Poster Session II

Point mutation in the copper binding domain of lysyl oxidase causes aortic dilation modified by genetic and environmental influences

Kit Man Tsang¹, Russell H Knutsen¹, Charles J. Billington¹, Heiko Steenbock², Anderson Watson¹, Amanda Wardlaw¹, Frederick T. Greenaway³, Juergen Brinckman^{3,4}, and Beth A. Kozel¹, *¹Laboratory of Vascular and Matrix Genetics, National Heart, Lung, and Blood Institute, National Institutes of Health, ²Institute of Virology and Cell Biology, University of Luebeck, ³Clark University, ⁴Department of Dermatology and Institute of Virology and Cell Biology, University of Luebeck*

B049 Poster Session I

Lysyl oxidase insufficiency exacerbates the vascular disease caused by Fibulin-4 mutations

Michelle Lin, Thomas J. Broekelmann, Robert P. Mecham, Carmen M. Halabi, *Washington University School of Medicine*

Concurrent Session 12: Skin BM, Wound Healing and Disease

B050 Poster Session II

A novel disease-modifying treatment for RDEB: a pre-clinical study targeting the anti-fibrotic AT2 and MAS receptors

Rocco Bernasconi¹, Christine Gretzmeier¹, Tobias Kühl¹, Thomas Walther², Leena Bruckner-Tuderman¹, Alexander Nyström¹, *¹Uniklinik Freiburg, ²University College Cork*

B051 Poster Session I

The different roles of laminin-332 and -511 in keratinocyte behaviors.

Jun Sasaki, Chisei Shimono, Yuji Atsuzawa, Shunji Hattori, Kazunori Mizuno, *Nippi Research Institute of Biomatrix*

B052 Poster Session II

The Versican G1 Fragment, Serum-Derived Hyaluronan-Associated Proteins, Hyaluronan (VG1F-SHAP-HA) Complex Acts as a Mediator between Wound Surface and Ointment Base in the Treatment of Pressure Ulcer.

Yusuke Murasawa, Hiroyuki Nakamura, Ken Watanabe, Zenzo Isogai, *National Center for Geriatrics and Gerontology, Obu, Aichi, Japan*

B053 Poster Session I

Matrix composition in 3-D collagenous bioscaffolds modulates the survival and angiogenic phenotype of human chronic wound dermal fibroblasts

Pascal Morissette Martin, Aaron Grant, Douglas W. Hamilton, and Lauren E. Flynn, *University of Western Ontario*

Special Interest Session II: Emerging Non-Canonical Intracellular Roles of Extracellular Matrix Proteins

B054 Poster Session II

Function of Secreted Protein Acidic and Rich in Cysteine (SPARC) as a matricellular chaperone.

Alexandre Chlenski, Marija Dobratic, Helen R. Salwen, Mark A. Applebaum, Emma Wilkinson, Susan L. Cohn, *University of Chicago*

B055 Poster Session I

MT-COMP compromises ligaments, tendons and joint function

Francoise Coustry¹, Karen L. Posey¹, Tristan Maerz², Kevin Baker³, Alka C. Veerisetty¹, Mohammad G. Hossain¹, Frankie Chiu¹, Jacqueline T. Hecht^{1,4}, ¹*McGovern Medical School at UTHealth Department of Pediatrics*, ²*University of Michigan Department of Orthopaedic Surgery and MedSport*, ³*Beaumont Hospital – Royal Oak Department of Orthopaedic Surgery*, ⁴*UTHealth School of Dentistry*

Concurrent Session 13: Growth Factors and ECM

B057 Poster Session I

Internal cleavage and synergy with twisted gastrulation enhance BMP inhibition by BMPER

Clair Baldock¹, Michael P Lockhart-Cairns¹, Karen Tzia Wei Lim¹, Alan RF Godwin¹, Alexandra Zuk², Gerhard Sengle², ¹*University of Manchester*, ²*Univesity of Cologne*

B058 Poster Session II

The Structure and Regulation of latent TGFβ by LTBP1 and Fibrillin

Clair Baldock, Michael P. Lockhart-Cairns, Jennifer Thomson, Rana Dajani, *University of Manchester*

B059 Poster Session I

LEMD3 Desensitizes Fibroblasts to Stiffness-driven TGF-beta Signaling

Dwight M. Chambers^{1,2}, Leandro Moretti³, Thomas H. Barker³, ¹*Emory University*, ²*Georgia Institute of Technology*, ³*University of Virginia*

B060 Poster Session II

TGF β and aortic disease severity in MFS

Marjolijn Renard¹, Elise C. Manalo², Sara Tufa², Douglas R. Keene², Julie De Backer¹, Lynn Y. Sakai², ¹*Ghent University*, ²*Shriners Hospital for Children Portland*

B061 Poster Session I

Individual Smad2 linker region residues regulate the genes involved in glycosaminoglycan chain initiation and elongation on proteoglycan, biglycan.

Kamoto Danielle¹, Osman Narin^{1,2}, Little Peter¹, ¹*University of Queensland*, ²*RMIT University*

Concurrent Session 14: Heritable Disorders of Connective Tissue

B062 Poster Session II

Phenotypic analysis of a mouse model for Marfanoid-Progeroid-Lipodystrophy syndrome

Silvia Smaldone, Erika Troy, Lawrence Miloscio, Trikaldarshi Persaud, Giusy Della Gatta, Guochon Gong, Brian Zambrowicz, Aris N. Economides, Chris Schoenherr, *Regeneron Pharmaceutical Inc.*

B063 Poster Session I

Mouse and human genomic studies identify modifiers of blood pressure and supra-aortic stenosis in elastin insufficiency and Williams Beuren syndrome

Phoebe Parrish, Russell Knutsen, Angela Troia, Amanda Wardlaw, Charles Billington, Delong Liu, Yi Ping Fu, and Beth Kozel, *National Institutes of Health*

B064 Poster Session II

Pain-related phenotypes in a murine model for classical Ehlers-Danlos syndrome

Fransiska Malfait¹, Delfien Syx¹, Rachel E. Miller², Alia M. Obeidat², Phuong B. Tran², Anne-Marie Malfait², ¹*Ghent University Hospital, Ghent Belgium*, ²*Rush University Medical Center*

B065 Poster Session I

Resetting Dysregulated Collagen-I Proteostasis in Osteogenesis Imperfecta

Ngoc-Duc Doan, Andrew S. DiChiara, Agata Bikovtseva, and Matthew D. Shoulders, *Massachusetts Institute of Technology*

Concurrent Session 15: ECM in Musculoskeletal Biomechanics and Regeneration

B066 Poster Session II

Discovery of potential therapeutic targets for post-traumatic osteoarthritis using a mechanical injury platform

Farzad Yousefi, Madison Tanis, Robert L. Mauck, George R. Dodge, *Department of Orthopaedic Surgery, University of Pennsylvania Translational Musculoskeletal Research Center, Crescenz VA Medical Center*

B067 Poster Session I

RHAMM and CD44 both mediate the influence of hyaluronic acid on embryonic myoblast behavior

Yue Leng, Sarah Calve, *Purdue University*

B068 Poster Session II

Development of tissue-specific matrix-derived microcarriers as a platform for adipose-derived stem/stromal cell differentiation

Anna Kornmuller, Ammi Jani, Lauren E. Flynn, *The University of Western Ontario*

B069 Poster Session I

Nitric Oxide Releasing Composite Hydrogels for Tendon Repair via Matrix Metalloproteinase Controlled Pathways

Kaylee Meyers, Rupak Rajachar, Carly Joseph, Bruce Lee, *Michigan Technological University*

Concurrent Session 16: ECM in Fibrosis

B070 Poster Session II

Targeting Matrix-mediated Signaling in Fibrosis

Rigen Mo, Sarah Lucas, Rafael Depetris, Ji-In Kim, Kevin G. Liu, Ed Skucas, Xiao-Jiang Feng, Jack Gaffney, Jeegar P. Patel, Masha V. Poyurovsky, *Kadmon Corporation, LLC*

B071 Poster Session I

Calreticulin is important for the development of renal fibrosis and dysfunction in diabetic nephropathy

Ailing Lu, Manuel A. Pallero, Benjamin Owusu, Anton Borovjagin, Paul Sanders, Joanne E. Murphy-Ullrich, *University of Alabama at Birmingham*

B072 Poster Session II

Fibronectin-rich ECMs store disease-relevant memories that drive altered fibroblast signaling and phenotype through integrin switching

Victoria Stefanelli¹, Wei Li³, Shilpa Choudhury¹, Ping Hu³, Vincent Yeh³, Leandro Moretti³, Dwight M. Chambers^{1,2}, Kelly Pesson¹, Matthew Torres¹, Thomas H. Barker³, ¹*Georgia Institute of Technology*, ²*Emory University*, ³*University of Virginia*

B073 Poster Session I

A Serological Biomarker Measuring True Formation of Collagen Type III (PRO-C3) is Related to Histological Parameters of Non-alcoholic Steatohepatitis

Signe Holm Nielsen^{1,2}, Diana J. Leeming¹, Jane I Grove^{3,4,5}, Philip Kaye^{3,4}, Stuart Astbury^{3,4,5}, Mette Juul Nielsen¹, Morten A. Karsdal¹, Indra Neil Guha³, Guruprasad P. Aithal^{3,4,5}, ¹*Nordic Bioscience, Fibrosis Biology and Biomarkers, Herlev, DK*, ²*Department of Biotechnology and Bioengineering, Technical*

University of Denmark, Lyngby, DK, ³NIHR Nottingham Biomedical Research Centre, Nottingham University Hospitals NHS trust and University of Nottingham, UK, ⁴MRC/EPSRC Nottingham Molecular Pathology Node, University of Nottingham, UK, ⁵Nottingham Digestive Diseases Centre, School of Medicine, University of Nottingham, UK

Concurrent Session 17: Proteases and EMC Remodeling

B074 Poster Session II

Fibrillin-2 proteolysis by Adamts6 is essential for cardiac and limb development

Timothy Mead¹, Cagri Gulec², Dieter Reinhardt³, Cecilia W. Lo², Suneel S. Apte¹, ¹Cleveland Clinic Lerner Research Institute, ²University of Pittsburgh School of Medicine, ³McGill University

B075 Poster Session I

In situ detection of degraded and denatured collagen via triple helical hybridization: new tool in histopathology

Yang Li¹, Jeongmin Hwang¹, Yufeng Huang¹, Timothy Burwell², Norman Peterson², Jane Connor², Stephen Weiss³, Michael Yu¹, ¹University of Utah, ²MedImmune, ³University of Michigan

B076 Poster Session II

Intracellular MMP12 Increases Breast Cancer Metastasis

Pirjo Astrom^{1,2}, Antoine Dufour¹, Maria Villalba Esparza³, Yuanmei Lou^{2,4}, Reinhild Kappelhoff¹, Nikolaus Fortelny¹, Paul MacDonald^{1,4}, Vincent Dive⁵, Enrique Lerma⁶, Shoukat Dedhar^{1,4}, Alfonso Calvo³, Christopher M. Overall¹, ¹University of British Columbia, ²University of Oulu, Finland, ³CIMA of the University of Navarra, Pamplona, Spain, ⁴Integrative Oncology BC Cancer Research Centre Vancouver, British Columbia, Canada, ⁵Atomic Energy and Alternative Energies Commission, Gif/Yvette, France, ⁶Hospital de la Santa Creu I Sant Pau, Barcelona, Spain

B077 Poster Session I

Cigarette smoking induces overexpression of elastinolytic cathepsin S

Pierre-Marie Andrault¹, Andrea C. Schamberger², Thibault Chazeirat¹, Damien Sizaret^{1,3}, Justine Renault¹, Agnès Petit¹, Mylène Wartenberg¹, Ahlame Saidi¹, Thomas Baranek¹, Serge Guyétant^{1,3}, Yves Courty¹, Oliver Eickelberg^{2,4}, Gilles Lalmanach¹, Fabien Lecaille¹, ¹INSERM, UMR 1100, Centre d'Etude des Pathologies Respiratoires, University of Tours, ²Comprehensive Pneumology Center, Ludwig-Maximilians-University and Helmholtz Zentrum München, ³Service d'Anatomie et Cytologie Pathologique, ⁴Division of Pulmonary and Critical Care Medicine, University of Colorado

Special Interest Session III, The Development and Use of 3D Systems to Investigate Biological Function

B078 Poster Session II

Periosteal Cells Derived from Long Bone are Unique from those Derived from Calvaria

Reut Shainer, Vardit Kram, Tina M. Kilts, Carl G. Simon Jr, Marian F. Young

B079 Poster Session I

A systems biology approach to studying melanoma invasion in a 3D tumor microenvironment

Amanpreet Kaur, Benjamin Emert, Ian Mellis, Arjun Raj

B080 Poster Session II

Extracellular matrix components isolated from diabetic mice alters cardiac fibroblast function through the AGE/RAGE signaling cascade

Stephanie Burr, James A. Stewart, *The University of Mississippi*

Poster Only Presentations

Matricellular Proteins

B081 Poster Session I

The Role of Peroxidases in Renal Injury

Selene Colon¹, Haiyan Luan², Yan Liu¹, Cameron Meyer¹, Leslie Gewin¹, Gautam Bhawe¹, ¹*Vanderbilt University Medical Center*, ²*Jiamusi University*

B082 Poster Session II

Determining the Roles of a Novel Cysteine-Rich Secretory Protein (CRISP) LON-1 in BMP Signaling in *C. elegans*

Anthony Nzessi, Zhiyu Liu, Herong Shi, Frances Clark, Ines Muravin, Jun (Kelly) Liu, *Department of Molecular Biology and Genetics, Cornell University*

B083 Poster Session I

ADAMTSL2 Secretion Requires O-Fucosylation and Is Affected by Geleophysic Dysplasia-causing Mutations in the TSRs

Ao Zhang¹, Steven J. Berardinelli¹, Christina Leonhard-Melief^{2,3}, Deepika Vasudevan^{2,4}, Andrew Taibi^{2,5}, Sharee Giannone², Suneel S. Apte⁶, Bernadette C. Holdener², Robert S. Haltiwanger^{7,2}, ¹*University of Georgia*, ²*Stony Brook University*, ³*Center To CureTM*, ⁴*NYU Langone Medical Center*, ⁵*University of Utah*, ⁶*Lerner Research Institute*, ⁷*University of Georgia*

B084 Poster Session II

Role of the CCN1-Hippo-YAP regulatory axis in sprouting angiogenesis

Sangmi Lee, Afruja Ahad, Michele Luu, Brahim Chaqour, *SUNY Downstate Medical Center*

B085 Poster Session I

Thrombospondin-1-mediated TGF β signaling in myofibers causes muscle atrophy via the PERK-eIF2 α -ATF4 ER-stress pathway and regulates body adiposity by inducing FGF21.

Davy Vanhoutte, Tobias Schips, Matthew J. Brody, Jeffery D. Molkenin, *Cincinnati Children's Hospital Medical Center, Department of Pediatrics, University of Cincinnati and Howard Hughes Medical Institute, Cincinnati Children's Hospital Medical Center*

B086 Poster Session II

The laminin-binding integrins regulate cell-cell interactions and the inflammatory status of the kidney collecting duct epithelium

Eugenia M. Yazlovitskaya, Erin Plosa, Olga Viquez, Ambra Pozzi, Roy Zent, *Vanderbilt University Medical Center*

B087 Poster Session I

Identifying Growth Factors Associated with the ECM in the Tumor Microenvironment

Genevieve Abbruzzese¹, Eric Kuhn², Steven A. Carr², Richard O. Hynes¹, ¹MIT, ²Broad Institute

B088 Poster Session II

CD47 is positively correlated with intraflagellar transport protein 57 in papillary thyroid cancer

Kun Dong, Sukhbir Kaur, David Roberts, *National Cancer Institute, National Institute of Health*

B089 Poster Session I

The secreted modular calcium binding protein SMOC-1 positively regulates BMP signaling in a dose-dependent manner

Melisa DeGroot, Herong Shi, Alice Eastman, Alexandra McKillop, Jun Kelly Liu, *Cornell University*

B090 Poster Session II

A novel mutation in the NPXY motif of β integrin reveals unique phenotypes linked to him-4/hemicentin in males of *Caenorhabditis elegans*

Myeongwoo Lee, Zhongqiang Qiu, Peter Sheesley, *Baylor University*

B091 Poster Session I

Analyzing the stabilizing effects of glycan modifications in ADAMTS13

Rajashri Manjunath, Steven J. Berardinelli, Robert S. Haltiwanger, *University of Georgia*

B092 Poster Session II

Thrombospondin-4 mediates TGF-beta1-induced cancer growth

Santoshi Muppala, Irene Krukovets, Dmitriy Verbovetskiy, Edward F Plow, Olga Stenina-Adognravi*, *Cleveland Clinic Foundation*

B093 Poster Session I

Glycosylation of ADAMTS/TSL Proteins is Essential for TSR Stabilization and Proper Secretion

Steven J. Berardinelli, Robert S. Haltiwanger, *Complex Carbohydrate Research Center, University of Georgia*

B094 Poster Session II

Elevated CCN1 promotes extracellular matrix degeneration and skin cancer in aged human skin

Taihao Quan, Yaping Xiang, Zhaoping Qin, Andrzej A. Dlugosz, George Bou-Gharios, John J Voorhees, Gary J. Fisher, *1Department of Dermatology, University of Michigan, 2Department of Dermatology, Third Xiangya Hospital, Central South University, Changsha, China, 3Institute of Ageing and Chronic Disease, University of Liverpool*

B095 Poster Session I

Mural cell-derived laminin α 5 plays a detrimental role in ischemic stroke

Abhijit Nirwane¹, Benjamin Nguyen¹, Jeffrey Miner², Yao Yao¹, *1University of Georgia, 2Washington University*

LB01 Poster Session I

Proteomic Analysis of Detergent Soluble Proteins Suggests Cooperative, Non-redundant Functions For TSP1 and TSP2 in Cortical Bone

Andrea I. Alford, Venkatesha Basrur, Anita B. Reddy, *University of Michigan*

Proteoglycans

B096 Poster Session II

Nascent laminin- γ 1 synthesis regulates the steady-state adult bone marrow hematopoietic niche

Karen Carlson^{1,2}, Sreemanti Basu², Pouneh Kermani³, Irene Hernandez², Mark Zogg², Jennifer May², British Fields², Hartmut Weiler², *1Medical College of Wisconsin, 2Blood Research Institute part of Versiti, 3Weill Cornell College of Medicine*

B097 Poster Session I

Chemotherapy induces secretion of exosomes loaded with heparanase that degrades extracellular matrix and impacts tumor and host cell behavior

Shyam Kumar Bandari¹, Anurag Purushothaman¹, Vishnu C. Ramani¹, Garrett J. Brinkley¹, Darshan S. Chandrashekar¹, Sooryanarayana Varambally¹, James A. Mobley¹, Yi Zhang², Elizabeth E. Brown¹, Israel Vlodavsky³, Ralph D. Sanderson¹, *1University of Alabama at Birmingham, 2Eli Lilly and Company, 3Cancer and Vascular Biology Research Center, The Bruce Rappaport Faculty of Medicine, Technion, Haifa, Israel*

Collagens

B098 Poster Session II

Evolutionary origin of collagen IV in a unicellular relative of animals

Aaron Fidler, Sergei Chetyrkin, Sergei Boudko, Favour Akabogu, Justin Cartailier, Ly Hoang, Julie Hudson, Billy Hudson, *Vanderbilt University Medical Center*

B099 Poster Session I

Inhibition of Transglutaminase Activity in a Murine Model of Periodontal Disease Induces Altered Collagen Fiber Morphology

Emilie A. Rosset¹, Jessica Trombetta-eSilva¹, Dylan Brown¹, Glenn Hepfer², Peng Chen², Hai Yao^{1,2}, Amy D. Bradshaw^{1,3}, ¹Medical University of South Carolina, ²Clemson University, ³Ralph H. Johnson Veterans Affairs Medical Center

B100 Poster Session II

Acetyltransferase p300 inhibitor, L002 reverses hypertension-induced cardiac hypertrophy and fibrosis.

Tianjiao Sun, Rahul Rai, Veronica Ramirez, Elizabeth Lux, Mesut Eren, Douglas Vaughan, Asish Ghosh, *Feinberg Cardiovascular and Renal Research Institute, Feinberg School of Medicine, Northwestern University*

B101 Poster Session I

3D Printing Networks of Type I Collagen with Tunable Fiber Alignment and Geometry

Bryan Nenger, Pierre-Thomas Brun, Celeste Nelson, *Princeton University*

B102 Poster Session II

Abnormal collagen post-translational chemistry and cross-linking causing bone fragility in Bruck Syndrome caused by compound heterozygous PLOD2 mutations

Charlotte Gistelink, MaryAnn Weis, Jyoti Rai, Peter H. Byers, David R. Eyre, *University of Washington*

B103 Poster Session I

Glycation targets the same type I collagen helical domain sites as lysyl oxidase-mediated cross-linking

David Hudson¹, Marilyn Archer¹, Karen B. King², David R. Eyre, ¹University of Washington, ²University of Colorado School of Medicine

B104 Poster Session II

Visible Light Crosslinking of Type I Collagen 3D Bioprinted Tissues

David Bagley, Bowman Bagley, Joshua Valdez, *Advanced BioMatrix*

B105 Poster Session I

Identification of major collagen producing cells in adult mouse heart during disease

Hadi, Khalil, , Bryan D Maliken, Onur Kanisicak, Robert N. Correll, Jeffery D Molquentin, *Cincinnati Children's Hospital Medical Center*

B106 Poster Session II

Type I Collagen binding to Fibronectin, Defining the high affinity interactive sites.

Jonathan Picker, Wen Liu, Xiaowen Liang, Magnus Hook, *Texas A&M Health Science Center - Institute of Bioscience and Technology, Department of Biochemistry and Biophysics, Texas A&M University*

B107 Poster Session I

The first crystal structure of native collagen: A multiplexin-like domain present in prokaryotic hyaluronidase

Joo Hyoung Lee¹, Kanagalaghatta R. Rajashankar², Norbert Shormann¹, Selvarangan Ponnazhagan¹, Champion Deivanayagam¹, ¹*The University of Alabama at Birmingham*, ²*Cornell University and NE-CAT Advanced Photon Source*

B108 Poster Session II

The role of COL27A1 in skeletal development: mouse modeling of the Steel syndrome Puerto Rican founder allele and additional pathogenic variants from Turkish kindreds

Harikiran Nistala¹, Claudia Gonzaga-Jauregui¹, Kalyan Nannuru¹, Johanna Jimenez¹, John Dronzek¹, Saathyaki Rajamani¹, Silvia Smaldone¹, Richard A. Gibbs², James R. Lupski², Aris N. Economides, ¹*Regeneron Genetics Center, Regeneron Pharmaceuticals Inc.*, ²*Baylor College of Medicine*

B109 Poster Session I

Coordinate roles for collagen VI and Bgn in regulating tendon collagen fibril structure

Hai Pham¹, Marian Young¹, Sheila M. Adams², David E. Birk³, ¹*NIH*, ²*University of South Florida*, ³*Morsani College of Medicine, Tampa, FL*

B110 Poster Session II

7S Dodecamer of Collagen IV as Substrate of Lysyl Oxidase like-2 for the Screening of Anti-fibrotic Compounds

Mark G. Athanason, Alberto López Jiménez, Rafi Mohamed, Roberto M. Vanacore, *Vanderbilt University Medical Center*

B111 Poster Session I

Collagen XI Is a Critical Regulator in Tendon Fibrillogenesis

Mei Sun^{1,2}, Eric Y. Luo¹, Sheila M. Adams¹, Thomas Adams¹, Louis J. Soslowsky³, David E. Birk¹, ¹*University of South Florida*, ²*Morsani College of Medicine*, ³*University of Pennsylvania*

B112 Poster Session II

Regulation of the Sar1 GTPase cycle is necessary for collagen secretion from the endoplasmic reticulum.

Miharu Maeda, Kota Saito, *Akita University, Graduate School of Medicine*

B113 Poster Session I

Scar-in-a-Jar, a novel in vitro screening tool for antifibrotics

Natasja S. Gudmann¹, Sarah R. Rønnow¹, Sarah Brockbank², Simon Cruwys², Morten A. Karsal¹, Diana J. Leeming¹, Jannie M. B. Sand¹, ¹*Nordic Bioscience*, ²*Innovative Medicines Unit, Grünenthal Group*

B114 Poster Session II

A Cysteine-Based Molecular Code Guides Collagen C-Propeptide Assembly

Rasia Li¹, Andrew DiChiara¹, Azade Hosseini¹, Darrell McCaslin², Matthew Shoulders, ¹MIT, ²UW-Madison

B115 Poster Session I

Species-specific collagen deposition in a xenograft model of the human digit

Russell Fernandes¹, Mary Ann Weis¹, David Hudson¹, David Eyre¹, William Landis², ¹University of Washington, Seattle, ²University of California, San Francisco

B116 Poster Session II

Chloride ions play both a signaling and a structural role in the assembly of collagen IV scaffolds

Ryan Bauer^{1,2}, Billy Hudson^{1,2,3,4,5,6,7,8}, Sergey Budko^{1,2}, ¹Center for Matrix Biology, ²Department of Medicine, Division of Nephrology and Hypertension, Vanderbilt University Medical Center, ³Department of Pathology, Microbiology, and Immunology, ⁴Department of Medical Education and Administration, ⁵Department of Cell and Developmental Biology, ⁶Department of Biochemistry, ⁷Vanderbilt-Ingram Cancer Center, ⁸Vanderbilt Institute of Chemical Biology, Vanderbilt University Medical Center

B117 Poster Session I

Heterogeneity of posttranslational modification in type I collagen from different tissues

Shinomi Yagi¹, Keisuke Tanaka¹, Yuki Taga¹, Shugo Tohyama², Eiji Kobayashi², Kazunori Mizuno¹, Shunji Hattori¹, ¹Nippi Research Institute of Biomatrix, ²Keio University School of Medicine

B118 Poster Session II

Bacterial modulation of ECM and contribution to tumor growth – a novel mechanism

Ritesh Kumar, John Taylor, Juan Xu, Yi Xu, Texas A&M University

LB02 Poster Session II

Determining the fates of misfolded type-I collagen C-propeptide variants associated with osteogenesis imperfecta (OI)

Michelle Huang, Azade S. Hosseini, Andrew S. DiChiara, Ngoc-Duc Doan, Amanda Del Rosario, Matthew D. Shoulders, MIT

LB03 Poster Session I

The Zebrafish *crusher* Mutation Disrupts Collagen Secretion and Cartilage Growth

Amy R. Rushing, Gokhan Unlu, and Ela W. Knapik, Vanderbilt University Medical Center

Elastic Fiber Proteins

B119 Poster Session I

Cutis Laxa Mutations in Fibulin-5 Decrease Elastin Deposition, GPCR and TGF- β Signaling

Erika Dreikorn, Zsolt Urban, University of Pittsburgh Graduate School of Public Health

B120 Poster Session II

Gene targeting of ADAMTSL3, a novel participant in the musculoskeletal system

Deborah Hoelting, Suneel Apte, *Cleveland Clinic Lerner Research Institute*

B121 Poster Session I

Upregulation of Fibulin-3 in human ovarian cancer: understanding the role of Fibulin-3 in normal ovarian and oviductal biology in young and aged mice

Yazmin Brown¹, M Fairuz B Jamaluddin¹, Arnab Ghosh¹, Manish Kumar¹, Ayesha Ali¹, Albert S. Mellick²
Lucy Murtha³, Andrew Boyle³, Pradeep S. Tanwar¹, ¹*University of Newcastle (Australia)*, ²*Ingham Institute, University of New South Wales, Sydney, Australia*, ³*Hunter Medical Research Institute, Newcastle, Australia*

LB04 Poster Session II

Zebrafish Elastin is Required for Cardiac Valve Development and Function

Michelle Zorrilla¹, Jerome P. Givi¹, Simon C. Watkins², Beth L. Roman¹, Kang Kim³, Zsolt Urban¹,
¹*University of Pittsburgh Department of Human Genetics*, ²*Center for Biologic Imaging*, ³*Center for Ultrasound Molecular Imaging and Therapeutics*

Matrix in Morphogenesis

B122 Poster Session II

***Sned1* knockout causes neonatal lethality and craniofacial defects in mice**

Anna Barque¹, Martin N. Davis¹, Kyleen Jan¹, Christina L. Nicholas¹, Richard O. Hynes², Alexandra Naba¹, ¹*University of Illinois at Chicago*, ²*David H Koch Institute for Integrative Cancer Research, Massachusetts Institute of Technology*

B123 Poster Session I

Laminin- γ 1 Is Necessary for Adult Murine Intestinal Epithelial- Mesenchymal Homeostasis

Karen Carlson^{1,2}, British Fields², Jennifer May², Irene Hernandez², Mark Zogg², Anne DeLaForest¹,
Hartmut Weiler², Michelle Battle¹, ¹*Medical College of Wisconsin*, ²*Blood Research Institute part of Versiti*

B124 Poster Session II

ECM remodeling and focal adhesion activation direct airway epithelial branching morphogenesis

James Spurlin, Michael J. Siedlik, Mei Fong Pang, Sahana Jayaraman Celeste M. Nelson, *Princeton University*

LB05 Session I

Palate Development: Review of ECM Properties, Genes, Cell Movement. What's Next?

Kathy K. H. Svoboda, L. Bruno Ruest, Shaun Logan, M. Douglas Benson, *Texas A&M College of Dentistry*

Structure and Assembly of ECM

B125 Poster Session I

Unraveling the role of the extracellular matrix during kidney organoid maturation.

Thomas Geuens¹, Anika Schumacher¹, Timo Rademakers¹, Cathelijne van den Berg², Loes Wiersma², Ton Rabelink², Clemens van Blitterswijk¹, Vanessa LaPointe¹, ¹*MERLN Institute for Technology - Inspired Regenerative Medicine, Maastricht University, Maastricht, The Netherlands*, ²*Leiden University Medical Center, Leiden, The Netherlands*

B126 Poster Session II

IDENTIFICATION OF TWO NOVEL PROTEIN O-GLUCOSYLTRANSFERASES THAT MODIFY FIBRILLIN-1 EGF REPEATS

Daniel Williamson¹, Hideyuki Takeuchi¹, Robert S. Haltiwanger^{1,2}, ¹*University of Georgia*, ²*Stony Brook University*

B127 Poster Session I

The Role of Matrix Assembly Site Distribution in Aligned Fibronectin Fibril Formation

Carly Garrison, Jean Schwarzbauer, *Princeton University*

B128 Poster Session II

Perlecan knockdown significantly alters ECM composition during cartilage development

Alexander R. Ocken, Madeline Ku, Sarah Calve, *Purdue University*

B129 Poster Session I

Abnormal collagen fibril ultrastructure in abdominal aortic aneurysms

Blain Jones¹, Anna Debski¹, Jeff R. Tonniges¹, Ben Albert¹, David Yeung¹, Ed P. Calomeni¹, Michael Go¹, A. Mahajan², Chetan Hans², Gunjan Agarwal¹, ¹*The Ohio State University*, ²*University of Missouri*

B130 Poster Session II

Label-free Raman imaging of elastic fibers in disease and healthy mouse aortic tissues

Kaori Sugiyama¹, Julia Marzi², Eva Brauchlec^{2,3}, Yoshito Yamashiro¹, Katja Schenke-Layland^{2,3,4}, Hiromi Yanagisawa¹, ¹*University of Tsukuba, Japan*, ²*Eberhard Karls University, Tübingen, Germany*, ³*NMI Natural and Medical Sciences Institute at the University of Tübingen, Reutlingen, Germany*, ⁴*Cardiovascular Research Laboratories, University of California*

B131 Poster Session I

Investigation of fibronectin-heparan sulfate interactions during extracellular matrix assembly

Katherine Hill, Irene Raitman, Jean Schwarzbauer, *Princeton University*

B132 Poster Session II

Unicellular ancestry and role of the Goodpasture Antigen Binding Protein in the transition to animal multicellularity

Carl Darris¹, Francisco Revert², Roberto Gozalbo-Rovira², Andrew Fiegley¹, Juan Saus², Billy Hudson¹, ¹*Vanderbilt University and Vanderbilt University Medical Center*, ²*FibroStatin S.L., Parc Científic Universitat de València*

B133 Poster Session I

Neonatal Fibrin Polymerization Dynamics

Kimberly Nellenbach¹, A. Kyu¹, N. Guzzetta², A.C. Brown¹, ¹*Joint Department of Biomedical Engineering, North Carolina State University and The University of North Carolina at Chapel Hill*, ²*Emory University School of Medicine and Children's Healthcare of Atlanta*

B134 Poster Session II

In-silico definition of the matrisomes of three model organisms: Danio rerio, Caenorhabditis elegans, and Drosophila melanogaster

Martin N. Davis¹, Alina Teuscher², Elisabeth Jongsma², Jan Gebauer³, Collin Y. Ewald², Sally Horne-Badovinac¹, Alexandra Naba¹, ¹*University of Illinois at Chicago*, ²*Eidgenössische Technische Hochschule (ETH) Zürich*, ³*University of Cologne*

B135 Poster Session I

Classification of the collagen ECM in normal human tissue as a biomarker for future breast cancer incidence

Ryan Gigstad, Tianjie Wang, Yifei Liu, Menggang Yu, Yuming Liu, Adib Keikhosravi, Kevin W. Eliceiri, Patricia J. Keely, Matthew W. Conklin, *University of Wisconsin*

B136 Poster Session II

Halogenation of renal collagen IV scaffold in vivo

Paul Voziyan, Kyle Brown, Billy Hudson, *Vanderbilt University Medical Center*

B137 Poster Session I

Ex-vivo evaluation of mesenchymal ECM biodynamics by cross-disciplinary approaches in mouse models of GI pathologies

Véronique Pomerleau, Vilcy Reyes Nicolas, Raphaëlle Servant, François-Michel Boisvert, Michel Grandbois, Nathalie Perreault, *Université de Sherbrooke*

ECM of Inflammation Infection and Immunity

B138 Poster Session II

Inflammatory Cytokines Promote Pro-Fibrotic Phenotype in Lung Fibroblast Subpopulations

Daniel Ababayehu, Thomas Barker, *University of Virginia*

B139 Poster Session I

Revealing silent pathological tissue states through extracellular matrix composition-to-structure translation

Elee Shimshoni¹, Ran Afik¹, Anjana Shenoy², Miri Adler¹, Luca Puricelli³, Odelia Mouhadeb⁴, Nathan Gluck⁴, Sigal Fishman⁴, Lael Werner⁵, Dror S. Shouval⁵, Chen Varol⁴, Alessandro Podestà³, Tamar Geiger², Paolo Milani³, Uri Alon¹, Irit Sagi¹, ¹*Weizmann Institute of Science*, ²*Tel-Aviv University*, ³*University of Milan*, ⁴*Tel Aviv Sourasky Medical Center*, ⁵*Sheba Medical Center*

Mechanosensing

B140 Poster Session II

Matrix Stiffness and Viscoelasticity Direct Fibroblast Spreading and Modes of Migration

Daniel Chester, Jeremy Nortey, Roni Lee, Ashley C. Brown, *North Carolina State University*

B141 Poster Session I

Kidney cell response to decellularized extracellular matrix with modified mechanical properties

Snehal Sant, Nicholas Ferrell, *Vanderbilt University Medical Center*

B142 Poster Session II

Mechanical stress attenuated inflammatory cytokines induced matrix degradative enzymes expression in chondrocyte by inhibition of NF-κB translocation

Takashi Ohtsuki¹, Omer Faruk Hatipoglu¹, Guole Liu¹, Akira Shinaoka², Keiichi Asano³, Takuto Nishimura¹, Junko Inagaki⁴, Keiichiro Nishida², Toshitaka Oohashi³, Satoshi Hirohata¹, ¹*Department of Medical Technology, Okayama University Graduate School of Health Sciences*, ²*Department of Human Morphology*, ³*Molecular Biology and Biochemistry*, ⁴*Cell Chemistry, Graduate School of Medicine*

Tumor Microenvironment

B143 Poster Session I

Dietary-regulated microbiota impact breast tumorigenesis and regulates the tumor stroma

Akiko Chiba, David R. Soto-Pantoja, Adam S. Wilson, Kenysha Y.J. Clear, Katherine L. Cook, *Wake Forest University School of Medicine*

B144 Poster Session II

Defining the Perlecan/HSPG2-Semaphorin Receptor Complex to Understand Cohesive Behavior of Metastatic Prostate Cancer

Tristen V. Tellman¹, Brian J. Grindel², Mary C. Farach-Carson¹, ¹*University of Texas Health Science Center at Houston, School of Dentistry*, ²*The University of Texas MD Anderson Cancer Center*

B145 Poster Session I

Dynamically Stiffening Niche Promote Malignant Transformation via Collective Mechanical Signaling

Adam J. Engler, *University of California San Diego*

B146 Poster Session II

Examining the biochemical properties of the novel ECM glycoprotein SNED1 to decipher its role in breast cancer metastasis

Alexandra M. Socovich, Martin N. Davis, Morgan C. Win, Alexandra Naba, *University of Illinois at Chicago*

B147 Poster Session I

Proteomic profiling of the extracellular matrix in pancreatic ductal adenocarcinoma reveals promoters of PDAC progression and metastasis

Chenxi Tian¹, Karl Clauser², Daniel Öhlund³, Steffen Rickelt¹, Ying Huang¹, Tommy Lidström³, Mala Gupta⁴, Steven A. Carr², David A. Tuveson⁵, Richard O. Hynes¹, ¹MIT, ²Broad Institute, ³Umeå University, ⁴New York University Winthrop Hospital, ⁵CSHL

B148 Poster Session II

Targeting Thrombospondin-1/CD47 signaling axis regulates hypoxia & metabolism in the tumor microenvironment to enhance anti-tumor immune responses.

Elizabeth R. Stirling, Adam Wilson, Tiffany M. Newman, Liliya Yamaleyeva, Pierre L. Triozzi, David R. Soto-Pantoja, *Wake Forest School of Medicine*

B149 Poster Session I

Extracellular Vesicle Heterogeneity Profiling using High Resolution Flow Cytometry and Imaging

Hyun-ji Kim, Samuel Yunga, Fehmi Civitci, Matthew Rames, Justin Plaut, Dennis Duran, Xiaolin Nan, *Thuy Ngo, *Oregon Health and Science University*, *corresponding author

B150 Poster Session II

ECM Atlas 2.0: Integrating 50+ Proteomic ECM Profiles of Normal, Fibrotic, and Tumor Tissues

Karl Clauser^{1,2}, Huiming Ding³, Charles A. Whittaker³, Steven A. Carr^{1,2}, Richard O. Hynes³, Alexandra Naba⁴, ¹Broad Institute of MIT, ²Harvard, ³Massachusetts Institute of Technology, ⁴University of Illinois at Chicago

B151 Poster Session I

Potential Association of Expression of CD133 and CD44 with Distant Metastatic Relapse and Tumor Growth in Advanced Prostate Cancer

Meenakshi A. Chellaiah, Sunipa Majumdar, Renty B. Franklin, *University of Maryland School of Dentistry*

B152 Poster Session II

Non-neoplastic extracellular matrix components abrogate primary human glioma cell malignancy

Mark Murdock¹, Jordan Chang¹, George Hussey¹, Nduka Amankulor², Johnathan Engh², Stephen Badylak¹, ¹McGowan Institute for Regenerative Medicine, ²UPMC Hillman Cancer Center

B153 Poster Session I

Internalization of CD239, a laminin α 5 receptor, in human breast cancer: a novel antigen for antibody-drug conjugates

Yamato Kikkawa¹, Yurie Enomoto-Okawa², Aiko Fujiyama², Takeshi Fukuhara¹, Nozomi Harashima¹, Yumika Sugawara¹, Kazuki Ikari¹, Yoichi Negishi¹, Fumihiko Katagiri¹, Kentaro Hozumi¹, Motoyoshi Nomizu¹, Yuji Ito², ¹*Tokyo University of Pharmacy and Life Science*, ²*Kagoshima University*

ECM of Aging

B154 Poster Session II

Protective effects of neohesperidin dihydrochalcone against epidermal basement membrane damage through the inhibition of cathepsin S

Justine Renault¹, Juliette Sage², Ahlame Saidi¹, Emmanuelle Leblanc², Sylvianne Schnebert², Carine Nizard², Robin Kurfurst², Gilles Lalmanach¹, Fabien Lecaille¹, ¹*INSERM, UMR 1100, Centre d'Etude des Pathologies Respiratoires, University of Tours*, ²*LVMH-Recherche, Hélios Centre, St Jean de Braye, France*

B155 Poster Session I

Laminin-511 is a key component of epidermal basement membrane to maintain epidermal homeostasis

Shunsuke Iriyama, Saori Nishikawa, Eisuke Takai, Junichi Hosoi and Satoshi Amano, *Shiseido Global Innovation Center*

Cardiovascular ECM

B156 Poster Session II

Homeostatic-like Cardiac Fibroblasts Turn off Angiogenesis Following Myocardial Infarction Wound Healing

Alan Mouton¹, Elizabeth R. Flynn¹, Yonggang Ma¹, Kristine Y. DeLeon-Pennell¹, Michael R. Garret¹, Tom C. Freeman², Merry L. Lindsey¹, ¹*University of Mississippi Medical Center*, ²*The Roslin Institute, University of Edinburgh*

B157 Poster Session I

Investigating the Effects of Type VIII Collagen Deficiency in Advanced Atherosclerosis

Cameron Harper^{1,2}, Joshua Lopes¹, Guangpei Hou^{1,2}, Michelle Bendeck^{1,2}, ¹*University of Toronto*, ²*Ted Rogers Centre For Heart Research*

B158 Poster Session II

The role of type VIII collagen in arterial vessel stiffening

Amanda Mohabeer^{1,2}, Guangpei Hou^{1,2}, Hangjun Zhang^{1,2}, Jeffery Kroetsch^{1,2}, Steffen Sebastian Bolz^{1,2}, Scott Heximer^{1,2}, Richard Assoian³, Michelle Bendeck^{1,2}, ¹*University of Toronto*, ²*Ted Rogers Centre For Heart Research*, ³*University of Pennsylvania*

B159 Poster Session I

Vascular Aggrecan and Versican Assays for the Evaluation of Aortic Tissue and Serum in Thoracic Aortic Aneurysm and Dissection.

Christopher Koch^{1,2}, Ling Li¹, Belinda Willard¹, Suneel Apte¹, ¹*Cleveland Clinic Lerner Research Institute*,
²*Cleveland State University*

B160 Poster Session II

Periodontal derived lipopolysaccharide stimulates glycosaminoglycan chain elongation in vascular smooth muscle cells.

Kamato Danielle, Afroz Rizwana, Little Peter, *School of Pharmacy, University of Queensland, Woolloongabba, Australia*

B161 Poster Session I

Fibrillin-1-mediated regulation of microRNA signaling and cell function

Rongmo Zhang, Karina A. Zeyer, Heena Kumra, Dieter P. Reinhardt, *McGill University*

B162 Poster Session II

Mechanoreponse to Periodic Hydrostatic Pressure Enables Fabrication of Human Arterial Graft

Junichi Saito¹, Utako Yokoyama¹, Toshio Takayama², Mitsuhiro Horade², Hiroaki Ito², Yoshinobu Sugo³, Kentaro Kurasawa³, Miyuki Ogawa³, Etsuko Miyagi³, Makoto Kaneko², Yoshihiro Ishikawa¹

¹ *Cardiovascular Research Institute, Yokohama City University, Yokohama, Japan*, ² *Department of Mechanical Engineering, Osaka University, Suita, Japan*, ³ *Department of Obstetrics and Gynecology, Yokohama City University, Yokohama, Japan*

B163 Poster Session I

Role of Fibronectin's extra domains EIIIA and EIIIB in early vascular development

Thao Nguyen, Amanda Del Rosario, Richard Hynes, *Massachusetts Institute of Technology*

B164 Poster Session II

Effects of sulforaphane, a plant-derived isothiocyanate, on cardiac fibroblast activation and extracellular matrix expression

Charity Fix, Amanda Carver, Mrinmay Chakrabarti, Mohamad Azhar, Wayne Carver, *University of South Carolina School of Medicine*

Skin BM-Wound Healing and Disease

B165 Poster Session I

Calreticulin Exploits TGF- β for Extracellular Matrix Induction Engineering A Tissue Regenerative Process

Unnati M Pandya, Ana Tellechea, Miguel A. Manzanares, Chinaza Egbuta, Julien Daubriac, Cougar Jaramillo, Marek Michalak, Feres Samra, and Leslie I Gold, *New York University School of Medicine*

LB06 Poster Session II

Recombinant elastonectin accelerates epidermal neogenesis and reinstates epidermal integrity in skin wound healing

Won Bae Jeon, Jin-Kyu Park, *KNU*; Seong-Kyoon Choi, *DGIST*; Kyeong-Min Lee, *DGIST*; Bo Hyung Park, *DGIST*; Kyu-Shik Jeong, *KNU*

Growth Factors and ECM

B166 Poster Session II

A versatile salt-induced method to immobilize glycosaminoglycans and create gradients of glycosaminoglycans and growth factors

Danique Hof, Elly Versteeg, Willeke Daamen, Toin Van Kuppevelt, *Radboud University Medical Center, RIMLS, Dept. of Biochemistry, Nijmegen, The Netherlands*

B167 Poster Session I

Conformational change of fibronectin during stretch influences growth factor binding domain availability

Emily Sevcik, Adam Feinberg, *Carnegie Mellon University*

B168 Poster Session II

Gastric hormone regulation of osteoblast lysyl oxidase is dysregulated in diabetes, leads to osteopenia, and is a potential therapeutic target

Philip Trackman¹, Eileen Daley¹, Sayon Roy², Neha Shrestha¹, ¹*Boston University Henry M Goldman School of Dental Medicine*, ²*Boston University School of Medicine*

B169 Poster Session I

Assessment of the effect of a pro-growth extracellular matrix protein, matrilin-2, on axonal sprouting in the post-stroke brain

Samuel Bridges, Michal Machnicki, S. Thomas Carmichael, *UCLA*

Heritable Disorders of Connective Tissue

B170 Poster Session II

A mutation in the fibronectin assembly domain impacts both fibronectin and collagen matrix assembly by fibroblast cells

Eli B. Cadoff¹, Ashley Drengler¹, Ruth Sheffer², Vardiella Meiner², Jean E. Schwarzbauer¹, ¹*Princeton University*, ²*Hadassah-Hebrew University Medical Center*

B171 Poster Session I

Zebrafish type I collagen mutants faithfully recapitulate human type I collagenopathies

Charlotte Gistelinc¹, Ronald Y Kwon¹, Fransiska Malfait², Sofie Symoens², Matthew P. Harris³, Katrin Henke³, Michael B. Hawkins³, Shannon Fisher⁴, Patrick Sips², Brecht Guillemin², Jan Willem Bek², Petra Vermassen², Hanna De Saffel², Paul Eckhard Witten², MaryAnn Weis¹, Anne De Paepe², David R Eyre¹, Andy Willaert², Paul J Coucke², ¹*University of Washington*, ²*Ghent University*, ³*Harvard Medical School*, ⁴*Boston University*

B172 Poster Session II

Angiotensin II Type 2 Receptor Partially Mediates Hypertension in Elastin Insufficiency

Michelle Lin¹, Beth A. Kozel², Robert P. Mecham¹, Carmen M. Halabi¹, ¹*Washington University School of Medicine*, ²*National Institutes of Health*

B173 Poster Session I

COL4A1 mutations cause neuromuscular disease with tissue-specific mechanistic heterogeneity.

Cassandra Labelle-Dumais, Vera Schuitema, Genki Hayashi, Kendall Hoff, Wenhui Gong, Dang Q Dao, Peter Oishi, Marta Margeta, Douglas B. Gould, *University of California, San Francisco*

B174 Poster Session II

Circulating fibrillin-1 fragments in children and young adults with Marfan syndrome

Lynn M. Marshall¹, Eric J Carlson², Kathryn W. Holmes¹, Luciana T. Young^{3,4}, Shaine A. Morris^{5,6}, Jacqueline T. Hecht⁵, Mary J. Roman⁷, Angela T. Yetman⁸, Lynn Y Sakai^{1,2}, ¹*Oregon Health and Science University*, ²*Shriners Hospital for Children*, ³*University of Washington*, ⁴*Seattle Children's Hospital*, ⁵*University of Texas*, ⁶*Texas Children's Hospital Houston*, ⁷*Weill Cornell Medical Center*, ⁸*University of Nebraska and Children's Hospital & Medical Center*

B175 Poster Session I

A zebrafish platform to study new treatment options for Marfan syndrome

Patrick Sips, Petra Vermassen, Hanna De Saffel, Marjolijn Renard, Andy Willaert, Anne De Paepe, Paul Coucke, Julie De Backer, *Ghent University*

B176 Poster Session II

A new mouse model of chronic proteinuria due to a glomerular basement membrane laminin-521 polymerization defect

Steven Funk¹, Raymond H. Bayer¹, Karen K. McKee², Kazushi Odaka³, Hiroshi Nishimune³, Peter D. Yurchenco², Jeffrey H. Miner¹, ¹*Washington University*, ²*Rutgers University*, ³*University of Kansas Medical Center*

B177 Poster Session I

An atomistic view of collagen degradation in alkaptonuria cartilage by solid-state NMR

Wing Ying Chow¹, Brendan Norman², University of Liverpool, Hartmut Oschkinat¹, James Gallagher², ¹*Leibniz-Institut für Molekulare Pharmakologie (FMP Berlin)*, ²*University of Liverpool*

LB07 Poster Session I

Somatic Activating Mutations in MAP2K1 Cause Melorheostosis

Heeseog Kang¹, Smita Jha¹, Zuoming Deng¹, Nadja Fratzi-Zelman², Wayne A. Cabral¹, Aleksandra Ivovic¹, Françoise Meylan¹, Eric P. Hanson¹, Eileen Lange¹, James Katz¹, Paul Roschger², Klaus Klaushofer²

Edward W. Cowen¹, Richard M. Siegel¹, Timothy Bhattacharyya¹, Joan C. Marini¹, ¹*National Institutes of Health (NIH)*, ²*Ludwig Boltzmann Institute of Osteology*

ECM in Musculoskeletal Biomechanics and Regeneration

B178 Poster Session II

Osteopontin/integrin $\alpha\beta 3$ Signaling Regulates Membrane Localization of CD44 and Migration of Osteoclasts by ERM-Actin Interaction with CD44

Meenakshi A. Chellaiah, *University of Maryland*

B179 Poster Session I

Pegvorhyaluronidase Alfa-mediated degradation of hyaluronan in skeletal muscle results in changes consistent with metabolic stress

Li Ma, Kevin Kwok, Curtis B. Thompson, Daniel Maneval, Rudolph D. Paladini., *Halozyme Therapeutics Inc.*

B180 Poster Session II

Molecular level detection of mechanical damage in collagen enabled by collagen hybridizing peptides

Yang Li¹, Jared Zitnay¹, Matthew Converse¹, Zhao Qin², Julian Kessler¹, Markus Buehler², Kenneth Monson¹, S. Michael Yu¹, Jeffrey Weiss¹, ¹*University of Utah*, ²*MIT*

ECM in Fibrosis

B181 Poster Session I

Therapeutic peptides based on CCN3 treat systemic sclerosis in a mouse model of the disease

Alex Peidl¹, Katherine Quesnel¹, Bruce Riser^{2,3}, and Science, Andrew Leask¹, ¹*Western University*, ²*BLR Bio LLC*, ³*Rosalind Franklin University of Medicine*

B182 Poster Session II

A HIGH CONTENT IMAGING SCREEN FOR MODULATORS OF CORTICOSTEROID MEDIATED EXTRACELLULAR MATRIX DEPOSITION

Christopher Wilson, Louis Yang, Chian Yang, Martin Henault, Thomas Vollmer, Megan Jabour, Yuan Wang, Erik Meredith, Heather MacLeod, Ganesh Prasanna, Amy Chen, *Novartis Institutes for Biomedical Research*

B183 Poster Session I

Global alignment of extracellular matrix by keloid fibroblasts

Fiona Kenny, Rachel Bell, Tanya Shaw, Brian Stramer, *King's College London*

B184 Poster Session II

A CRISPR/Cas9 in vitro human induced pluripotent stem cell (hiPSC) model to investigate the role of perlecan in cardiovascular fibrotic disease.

James Smith¹, Kate S. Dowding¹, Jamie L. Thompson¹, Cathy L. R. Merry¹, Megan Lord², Chris Denning¹, John Whitelock^{1,2}, ¹*Wolfson Centre for Stem Cells, Tissue Engineering and Modelling, University of Nottingham, Nottingham, United Kingdom*, ²*Graduate School of Biomedical Engineering, University of New South Wales, Sydney, Australia*

B185 Poster Session I

Idiopathic Pulmonary Fibrosis: Registration of extracellular matrix components comprising the fibroblastic focus

Jeremy Herrera¹, Colleen Forster², Thomas Pengo³, Angeles Monteres⁴, Joe Swift⁵, Martin Schwartz⁵, Craig A Henke⁶, Peter B Bitterman⁶, ¹*Wellcome Centre for Cell-Matrix Research, University of Manchester*, ²*University of Minnesota, Clinical and Translational Medicine Institute*, ³*University of Minnesota Informatics Institute, University of Minnesota*, ⁴*Wythenshawe University Hospital, Department of Histopathology, Manchester, UK*, ⁵*Wellcome Centre for Cell-Matrix Research, University of Manchester*, ⁶*University of Minnesota, Department of Medicine*

B186 Poster Session II

Elevated glucose alters expression of ECM- and cell adhesion-associated genes in a diabetic nephropathy cell model

Maria E. Vega*, John B. Finlay*, Jean E. Schwarzbauer, *equal contributors, *Princeton University*

B187 Poster Session I

Fibronectin α_5 -Dityrosine Crosslinking Attenuates Adhesion Signaling and Confers Protease Resistance

Morgan Locy¹, Sunad Rangarajan, Sufen Yang, Mark Johnson, Karen Bernard, Ashish Kurundkar, Jaeman Byun², Subramaniam Pennathur², Yong Zhou¹, Victor Thannickal¹, ¹*University of Alabama at Birmingham*, ²*University of Michigan*

B188 Poster Session II

Novel Tacrolimus (FK506) Analogue Inhibits FKBP10:Lysyl-Hydroxylase-2 (LH2) Collagen Processing in Idiopathic Pulmonary Fibrosis (IPF) Fibroblasts

Sarah Bui¹, Young-Ok You¹, Steven D Nathan², Geraldine Grant¹, George Mason University, Mikell Paige¹, ¹*George Mason University*, ²*Inova Fairfax Hospital*

Proteases and ECM Remodeling

B189 Poster Session I

Identification of a novel collagen-binding domain from *Grimontia hollisae* collagenase

Keisuke Tanaka¹, Naoko Teramura¹, Osamu Hayashida¹, Katsumasa Iijima¹, Teru Okitsu², Kazunori Mizuno¹, Nippi Research Institute of Biomatrix, Shunji Hattori¹, ¹*Nippi Research Institute of Biomatrix*, ²*Institute of Industrial Science, The University of Tokyo*

B190 Poster Session II

Vascular dimorphism via regulated extracellular matrix dynamics ensures rapid and selective umbilical artery occlusion at birth

Sumeda Nandadasa, Vai Pathak, Caroline M Kraft, Anna O'Donnell, Clare Hughes, Bruce Caterson, Karin Tran Lundmark, Martina Veigl, David Sedwick, Miriam S. Domowicz, Nancy B. Schwartz, Elliot Philipson and Suneel S Apte *Cleveland Clinic Lerner Research Institute*

B191 Poster Session I

A cleavage-resistant mouse knock-in mutant demonstrates that versican proteolysis is indispensable for interdigital web regression

Sumeda Nandadasa, Jacob Knorr, Christopher Koch, Maria Dours-Zimmermann, Karin Tran-Lundmark, Dieter Zimmermann, Sophie Valleix, Suneel S. Apte, *Cleveland Clinic Lerner Research Institute*

LB08 Poster Session II

Role of progesterone and protease ADAMTS 1 on migration and invasion of ovarian tumor cells

Maira de Assis Lima, Suely Viera da Silva, Vanessa Morais Freitas, *University of Sao Paulo*