ASMB 2014

American Society *for* Matrix Biology **Biennial Meeting**

October 12-15, 2014 • Cleveland, OH

PROGRAM BOOK

www.asmb.net

Thank you to our 2014 Sponsors!

Platinum Level Sponsors

Cleveland Clinic

GILEAD

Gold Level Sponsors

Shriners Hospitals for Children®

International Society for Matrix Biology ISMB

Silver Level Sponsors

genzyme A SANOFI COMPANY

THE MARFAN FOUNDATION

ELSEVIER

Bronze Level Sponsors

ACD ADVANCED CELL DIAGNOSTICS

Athersys inc.

Advanced BioMatrix

Ehlers-Danlos NATIONAL FOUNDATION

LifeCell

LIFECORE BIOMEDICAL

MYRIAD®

rsbo Réseau de Recherche en Santé Buccodentaire et Osseuse

SAPPHIRE NORTH AMERICA

TISSUE SOURCE LLC PROVIDING ANIMAL TISSUE FOR MEDICAL USE

Contributor Level Sponsors

NEW ENGLAND BioLabs® Inc.

"Funding for this conference was made possible (in part) by (1 R13 AR067077-01) from the National Institute Of Arthritis And Musculoskeletal And Skin Diseases (NIAMS), and all co-funding support provided by the National Center for Advancing Translational Sciences(NCATS), and the National Institute of Dental and Craniofacial Research (NIDCR). The views expressed in written conference materials or publications and by speakers and moderators do not necessarily reflect the official policies of the Department of Health and Human Services; nor does mention by trade names, commercial practices, or organizations imply endorsement by the U.S. Government."

American Society *for* Matrix Biology
BIENNIAL MEETING

Dear Attendees:

It is a great pleasure to welcome you to the 6th biennial meeting of the American Society for Matrix Biology on behalf of its organizers. I know you will have a fulfilling and enjoyable time at the conference, taking full advantage of the terrific science, networking and collaborative opportunities that your attendance provides. Of course, we hope you will find new and old friends and enjoy your time in Cleveland, a new venue for the ASMB conference. The Program Committee, chaired by the incoming ASMB President, Suneel Apte, and very ably managed by ASMB's Executive Director, Kendra LaDuca, have done their very best to put together a roster of outstanding speakers and diverse topics. This year, the meeting's pre-program on Sunday, October 12, features an eclectic selection of sessions, including guest symposia with both the International Society for Hyaluronan Sciences and the Tissue Engineering and Regenerative Medicine International Society. We urge you to plan on attending these sessions, which have exciting programs that include leaders in each of the respective disciplines.

As you can see from the program, our Society equally values both our junior and senior attendees, and ASMB is particularly committed to the career development of scientists-in-training. The Program Committee has selected a number of abstracts submitted by students and postdoctoral fellows for podium presentations. We also have two mentoring breakfasts including — for the first time — a mentoring breakfast for women scientists. The success of Gordon Research Seminars in building networks of young scientists has inspired a new aspect of the pre-program. For the first time, students and fellows are running one of the Special Interest Groups, and we will transition to a full pre-program of student- and postdoc-selected and managed sessions at the ASMB 2016 meeting. ASMB 2014 is also pleased to be offering minority scholarships to young investigators as well as a number of travel awards, some of which were contributed by our valued sponsors.

During the meeting we will have the pleasure of honoring Vince Hascall and Sean Gill with the ASMB Senior and Junior Investigator Awards. Due to a new, generous endowment, the Renato Iozzo Award will be presented to Adam Engler. Together with Leena Bruckner-Tuderman, the ISMB Distinguished Investigator, these ASMB awardees will each be featured speakers in plenary sessions.

Our Society is grateful to our valued sponsors, who are recognized by name in the program, on our website and during sessions. Their generous support has had a tremendous impact on the quality of the meeting. We are particularly thankful to NIH/NIAMS for its valued, continued support for the conference and its partnership with us to foster investigations of matrix. The Fundraising Committee, with special thanks to Maurizio Pacifici for his work on behalf of ASMB, was a tremendous resource in ensuring financial success of this conference. And of course, we are indebted to Kendra LaDuca, who has quietly and efficiently guided every aspect of the conference.

ASMB thanks you all for attending, sharing your newest work/ideas and making this conference and the matrix community a vital and growing enterprise. We hope you will continue to be increasingly involved with ASMB in the coming years by sustaining your membership, becoming active in committee service, contributing to the newsletter and come to be part of the ASMB Council so that you can continue to help us make a real difference to the future of matrix biology.

My warmest welcome on behalf of the ASMB and all who have contributed to this event.

Jeff Davidson, PhD
President

The Lerner Research Institute is home to all laboratory-based, translational and clinical research at Cleveland Clinic. Our mission is to understand the underlying causes of human diseases and to develop new treatments and cures. A hallmark of the Institute is our focus on disease-oriented research. The LRI comprises several departments and centers of excellence.

- Biomedical Engineering
- Cancer Biology
- Cellular and Molecular Medicine
- Genomic Medicine
- Immunology
- Molecular Cardiology
- Molecular Genetics
- Neurosciences
- Ophthalmic Research
- Pathobiology
- Quantitative Health Sciences
- Stem Cell Biology and Regenerative Medicine
- Translational Hematology and Oncology Research

We welcome interest from prospective faculty candidates, postdoctoral fellows and PhD students wishing to further their professional development in a multidisciplinary setting.

---

http://www.lerner.ccf.org/ | Twitter: CCLRI | Facebook: ClevelandClinicResearch

Table of Contents

ASMB Officers and Council

President

Jeffrey Davidson
Vanderbilt University, School of Medicine

President Elect

Suneel Apte
Cleveland Clinic Lerner Research Institute

Past President

Jean Schwarzbauer
Princeton University

Secretary/Treasurer

Ambra Pozzi
Vanderbilt Medical Center

Councilors

Caroline Alexander, University of Wisconsin-Madison

Kayla Bayless, Texas A&M Health Science Center

David Birk, University of South Florida

Peter Bruckner, Münster University Hospital Münster, Germany

Billy Hudson, Vanderbilt University

Beth Kozel, Washington University

Pyong Woo Park, Children's Hospital at Harvard Medical School

Dieter Reinhardt, McGill University, Montreal, Quebec, Canada

Liliana Schaefer, Goethe University Frankfurt

Dwayne Stupack, University of California, San Diego, **Editor, The Matrix Letter*

Hiromi Yanagisawa, University of Texas Southwestern

Thank You to ASMB Outgoing Council Members 2013, 2014

- Joanne Murphy-Ullrich (2013)
- Pyong Woo Park (2014)
- Maurizio Pacifici (2013)
- Ralph Sanderson (2013)
- Rocky Tuan (2013)
- Jean Schwarzbauer (2014)

Administrative Offices

Kendra LaDuca, Executive Director
Society Management Services, FASEB
9650 Rockville Pike Bethesda, MD 20814
(301) 634-7456 | asmb@faseb.org | www.asmb.net

Main Program Invited Speakers and Chairs

The ASMB Meeting organizers wish to thank all of our invited speakers and session chairs for their valued participation and contributions.

Elena Aikawa, Brigham and Women's Hospital

Stephen Badylak, University of Pittsburgh

Leena Bruckner-Tuderman, University Frieburg, Germany

Valerie Cormier-Daire, Hospital Necker, Paris, France

Jack Dixon, University of California San Diego

Adam Engler, University of California, San Diego,

Cagla Eroglu, Duke University

Sean Gill, Western University, London, Ontario, Canada

Vincent Hascall, Cleveland Clinic Lerner Research Institute

Erhard Hohenester, Imperial College London

Magnus Hook, Texas A&M University

Sally Horne-Badovinac, The University of Chicago

Luisa Iruela-Arispe, University of California Los Angeles

Patricia J. Keely, University of Wisconsin-Madison

Chay Kuo, Duke University

Shireen Lamande, Murdoch Children's Research Institute

Lester Lau, University of Illinois at Chicago

Andrew Leask, Western University, London, Ontario, Canada

Robert Mecham, Washington University in St. Louis

Dianna Milewicz, The University of Texas Health Science Center at Houston

Deane Mosher, University of Wisconsin-Madison

Enid Neptune, Johns Hopkins Medical College

Celeste M. Nelson, Princeton University

Bjorn Olsen, Harvard University

Maurizio Pacifici, Children's Hospital of Philadelphia

William C. Parks, Cedars-Sinai Medical Center

Joanna J. Phillips, University of California-San Francisco

Jun Qin, Cleveland Clinic Lerner Research Institute

Erik Sahai, London Research Institute, UK

Linda Sandell, Washington University in St. Louis

Jean Schwarzbauer, Princeton University

Ronen Schweitzer, Shriners Hospital for Children, Portland

David Sherwood, Duke University

Tim Springer, Harvard Medical School

Peter Yurchenco, Rutgers University

Roy Zent, Vanderbilt University

ASMB Awards

Iozzo Award

Adam Engler, University of California, San Diego, California

Senior Investigator

Vince Hascall, Cleveland Clinic Lerner Research Institute

Junior Investigator

Sean E. Gill, Western University, London, Ontario, Canada

ASMB Travel

Carolyn Dancevic, Deakin University

Vincent Fiore, Georgia Institute of Technology

Nadine Nagy, Benaroya Research Institute

Thomas Neill, Thomas Jefferson University

Alexandra Pastino, Princeton University

+ 5 awards to be given on-site to poster presenters

ASMB Minority Travel

Kristina Aguilera, UT Southwestern Medical Center

Michael Duncan, Georgia Regents University

Justin Parreno, University of Toronto

Ehlers-Danlos National Foundation Awards

Sanne D'hondt, Ghent University

Yoshihiro Ishikawa, Shriner's Hospital for Children

Gili Naveh, HarvardUniversity

Arick Park, University of Wisconsin- Madison

Mei Sun, University of South Florida

ISMB International Travel Awards

Rushita Bagchi, University of Manitoba

Ryoko Sato-Nishiuchi, Institute for Protein Research, Osaka University

Tim Van Damme, Ghent University Hospital

ISMB Distinguished Investigator Awardee

Leena Bruckner-Tuderman, University Frieburg, Germany

Exhibitor List

Table # 1
International Society for Matrix Biology
www.ismb.org
Onsite Representative: Shireen Lamandé, shireen.lamande@mcri.edu.au

Table# 2
Elsevier
600 Technology Square, 5th Floor
Cambridge, MA 02139
617-386-2154
www.elsevier.com
Onsite Representative: Kaia Motter, k.motter@elsevier.com

Table# 3
Advanced Cell Diagnostics
3960 Point Eden Way
Hayward, CA 94545
214-566-7141
www.acdbio.com
Onsite Representative: Arthur E. Haynes Sr., ahaynes@acdbio.com

Table# 4
Advanced BioMatrix, Inc
P.O. Box 502403
San Diego, CA 92150
800-883-8220
www.advancedbiomatrix.com
Onsite Representative: David Bagley, support@advancedbiomatrix.com

Table# 5
Lifecore Biomedical LLC
3515 Lyman Blvd
Chaska, MN 55318-3051
952-368-6321
www.lifecore.com
Onsite Representative: Kipling Thacker

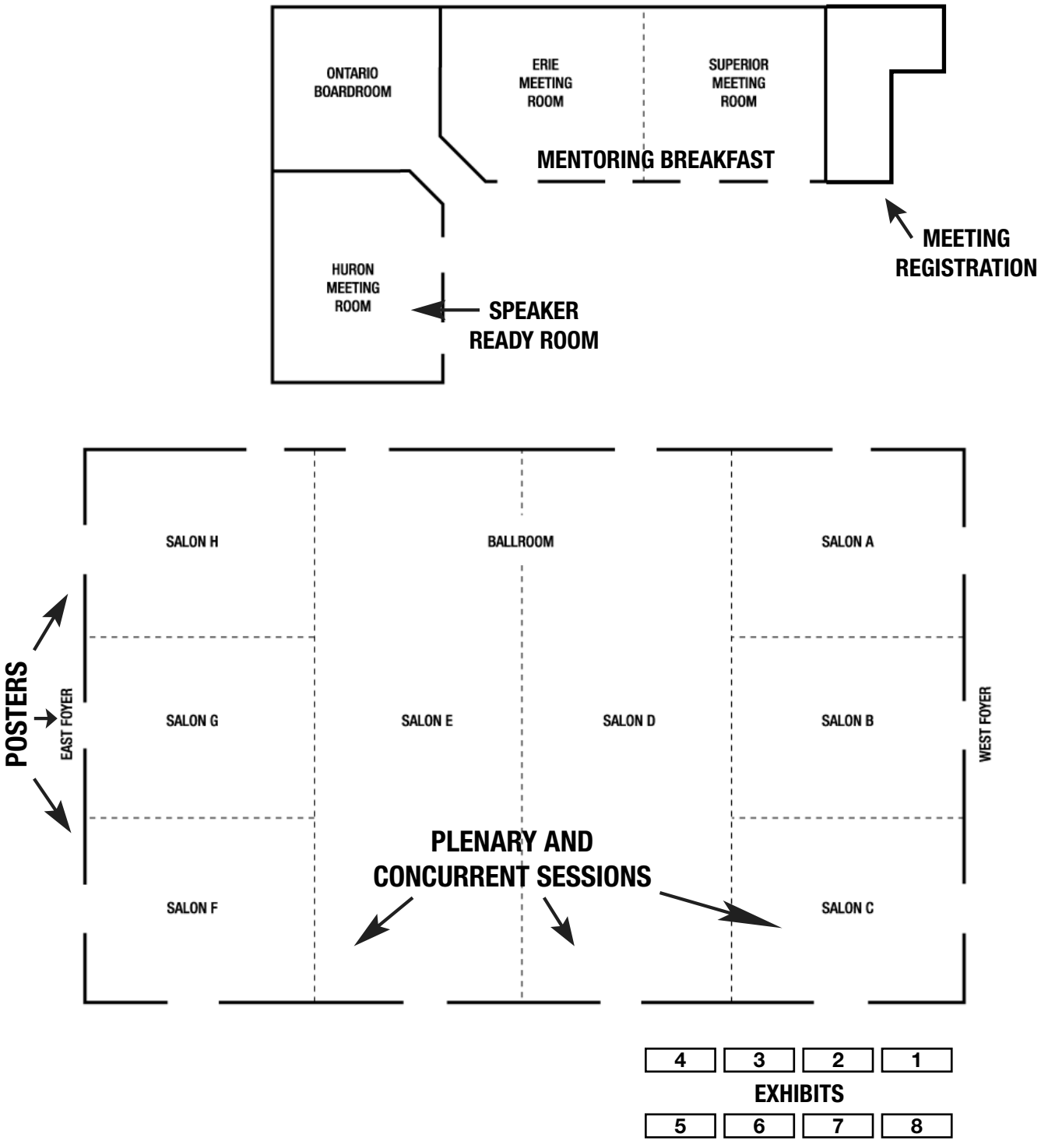
Table # 6
Myriad RBM
3300 Duval Road
Austin, TX 78759
512-275-2602
www.myriad.com
Onsite Representative: Rich Stratton, rstratton@myriadrbm.com

Table# 7
Sapphire North America
795 Highland Drive
Ann Arbor, MI 8108
855-256-9433
www.sapphire-usa.com
Onsite Representative: Brian Conkle

Table # 8
Tissue Source, LLC
2520 S. 250 W.
Layfayette, IN 47909
888-984-7783
www.tissue-source.com/
Onsite Representative: Sherry Ziobro, sherryziobro@tissue-source.com

ASMBI 2014

Meeting Floor Plan



General Information

Registration Hours

The meeting registration desk is located in the West Foyer of the second floor of the Marriott Key Center Hotel. Name badges and conference materials can be picked up at this location. The desk will be staffed during the following hours.

Sunday October 12th..... 12:00 PM – 6:00 PM
Monday October 13th ..... 7:30 AM – 5:00 PM
Tuesday October 14th..... 7:30 AM – 5:00 PM
Wednesday October 15th ..... 8:00 AM – 12:00 PM

Registration

Registration fees include the Opening Reception on Sunday night, refreshment breaks, continental breakfast Monday, Tuesday, and Wednesday, Poster Session I/II lunches, scientific sessions, and one program book. Registration fees exclude hotel costs. On-site registration will be accepted with payment via checks and credit cards. Banquet tickets must be purchased separately and are not included in the registration fee.

Catering

Included in registration fees are the following catered events:

- Sunday night reception (Hot and cold hors d'oeuvres, lite fare, desserts, and Cash Bar)
- Monday, Tuesday, and Wednesday Breakfast (Classic continental fare, Coffee/Tea)
- Poster Session Boxed Lunch (Monday and Tuesday) (various sandwich combinations, side salad, chips, cookie and a drink)
- AM and PM coffee breaks

Internet Access

Internet access is complimentary in the guest rooms for those staying onsite at the Marriott Key Center within the meeting block. Complimentary access is also provided in the public and common areas.

Speaker Ready Room and Cyber Cafe

Use the Huron Room during open hours to view abstracts online, check your email, meet with small groups to discuss areas of interest, have a mini-job fair and meet with prospective employers (see message and job board near the registration desk), or just sit and meet other conference attendees!

Presenters are asked to load their talks at least 2 hours prior to their sessions by visiting the speaker ready room (Huron). For loading or if you would like to practice your presentation, please visit the speaker ready room in the Huron during registration hours. If you require any assistance, please contact one of the AV Technicians. Session chairs and speakers, please arrive in the session room at least 15 minutes prior to your start time and identify each other.

Open hours:

Sunday October 12th..... 12:00 PM – 6:00 PM
Monday October 13th ..... 7:00 AM – 5:00 PM
Tuesday October 14th..... 7:00 AM – 5:00 PM
Wednesday October 15th……8:00 AM – 12:00 PM

Airport and Transportation

The Cleveland Hopkins International Airport (CLE) is approximately 12 miles from the hotel. It is easily accessible by public transport or by taxicab. The hotel is located on West Mall Drive off of Public

General Information

Square in the heart of downtown Cleveland. Use the "Public Square" stop if taking the train. Visit www.riderta.com airportservice for more information about train transport to and from the airport.

Parking

The hotel offers self and valet parking service on-site. Self-parking is $20 daily. Valet parking is $25.

Poster Set-up/Poster Sessions

Poster boards will be set-up in the Salon F-H. Posters will be presented in two separate sessions. Please make sure your poster is displayed by 7:30am the day of your presentation and is removed by 7:30pm the same day. The organizers are not responsible for any materials posted. Both poster sessions include lunch provided to all attendees.

Poster Session I: Monday October 13th, 12:30 – 2:30 PM

Poster Session II: Tuesday October 14th, 12:00 – 2:00 PM

Exhibition

Please take time to visit the exhibit displays in the North and West Foyers during the breaks and poster sessions. See the exhibitor listing for detailed information regarding our sponsoring companies.

Exhibits Schedule:

Sunday October 12th ..... 3:00 PM – 6:00 PM
Monday October 13th ..... 7:30 AM – 6:00 PM
Tuesday October 14th ..... 7:30 AM – 5:30 PM
Wednesday October 15th ..... 8:30 AM – 1:00 PM

Accompanying Persons

Guests are welcome to enjoy the city during the conference hours. There are many sites and attractions within walking distance. See the Positively Cleveland website www.thisiscleveland.com, or stop by the hotel concierge for information.

Membership

All ASMB members are encouraged and invited to attend the Member Business Meeting on Monday, October 13th from 12:00 – 12:30 PM. The advice and guidance of the membership on current society issues is welcome in these "open forum" meetings. If you are not currently a member, please join ASMB; application forms are available at the Registration Desk.

Special Needs

Registrants with special needs are invited to contact the Registration Desk or hotel concierge for assistance.

Liability

Neither the host venue nor the organizers can be held responsible for any personal injury, loss, damage to private property or additional expense incurred as a result of delays or changes in air, rail, sea, road or other services. All participants are encouraged to make their own arrangements for health and travel insurance.

Social Events and Meetings

Social Events

OPENING RECEPTION

Sunday, October 12th – 6:00pm – 7:00pm – This event will mark the opening of the conference, at the Marriot Key Center and will be held in the in the Foyers areas of the meeting floor. Hot and cold hors d'oeuvres and desserts will be offered, plus a Cash Bar. Please come and join your fellow attendees to celebrate the official opening of the program.

BANQUET (ticket required)

Tuesday, October 14th – 7:00 – 11:00pm. This event will be held at the Rock and Roll Hall of Fame. Admission to the museum is included. Advance banquet ticket purchase is required. The Rock and Roll Hall of Fame is a walkable distance from the hotel, but shuttle buses are also provided. Meet in the hotel lobby at 6:55pm to ride the shuttle bus. Attendees are encouraged to purchase a ticket and come to enjoy the museum exhibits, food and conversation with fellow professionals. A limited number of tickets may be available at the ASMB meeting registration desk.

Other Meetings and Events

Sunday, October 12

8:00am – 12:00noon
ASMB Council Meeting
(By invitation only)
Superior

Monday, October 13

7:30am – 8:30am
Career Mentoring Breakfast
(Pre-registration required)
Erie and Superior

12:00pm – 12:30pm
ASMB Business Meeting
(Open to all ASMB members)
Salon D-E

Tuesday, October 14

7:30am – 8:30am
Women Mentoring Women Breakfast
Erie and Superior (pre-registration required)

12:00pm – 1:00pm
Matrix Biology Journal Luncheon
(By invitation only)
Superior

ASMB 2014

Scientific Program

Sunday, October 12th

8:00am-12:00pm

ASMB Council Meeting

Location: Superior

12:00-6:00pm

Registration

Location: West Foyer

3:00-6:00pm

Exhibits

Location: North and East Foyers

1:00-3:00pm

Guest Symposium I: Engineering Cell-Matrix Interactions for Musculoskeletal Tissue Engineering

Presented by TERMIS (Tissue Engineering & Regenerative Medicine International Society)

Location: Salon D

Chair: **Johnna Temenoff**, Georgia Tech

1:00pm **Biomimetic Scaffolds for Stem Cell-Based Skeletal Tissue Engineering and Modeling;** Rocky Tuan, University of Pittsburgh

1:30pm **Bone Regeneration: A Softy's Story;** Yadong Wang, University of Pittsburgh

2:00pm **Biomaterials for Tissue Engineering and Repair;** Tony Calabro, Cleveland Clinic

2:30pm **GAG-based Biomaterials for Repair of Orthopaedic Injuries**; Johnna Temenoff, Georgia Tech/Emory

1:00-3:00pm

SIG 1: The New Biology of the Small Leucine Rich Proteoglycans

Sponsored by LifeCell

Discussion Leaders: **Renato V. Iozzo,** Thomas Jefferson University and Liliana Schaefer, Goethe University, Frankfurt

Location: Salon E

1:00pm **Novel SLRP Regulation in the Skeleton: From Head to Toe**; Marian Young, NIH

1:35pm **SLRPs Regulate Tissue-specific Matrix Assembly;** David Birk, University of South Florida

2:10pm **Novel Insights into the Role of Biglycan During Atherosclerosis;** Jens Fischer, University of Duesseldorf, Germany

2:45pm **Downregulation of fibromodulin is a critical regulator of corneal stromal matrix assembly**; Shoujun Chen, University of South Florida

1:00-3:00pm

SIG 2: Biological Mechanisms and Impact of Matrix Cross-linking on Cellular Systems and Tissue Function

Sponsored by: Faculty of Dentistry, McGill University and Zedira; zedira.com

Discussion Leaders: **Mari T. Kaartinen**, McGill University, Montreal, Canada and **Amy D. Bradshaw**, Medical University of South Carolina

Location: Salon A-C

1:00pm **Transglutaminases: Enzyme Externalization and Extracellular Functions**; Daniel Aeschlimann, Cardiff University

1:30pm **Regulation of Matrix Cross-linking Enzymes: Role in Vascular Stiffness**; Dan E. Berkowitz, Johns Hopkins Medicine

2:00pm **Lysyl Oxidases in Fibrosis and Cancer**; Philip Trackman, Boston University

2:30pm **SPARC Regulates Transglutaminase-dependent Modification of Collagen I**; Amy Bradshaw, Medical University of South Carolina

2:45pm **Serotonin - An Inhibitor of Transglutaminase-mediated Matrix Stabilization?**; Mari T. Kaartinen, McGill University

3:00-3:30pm

Coffee Break

Location: North and East Foyers

3:30-5:30pm

Guest Symposium II: Pathobiology of Hyaluronan

Presented by ISHAS (The International Society for Hyaluronan Sciences)

Location: Salon A-C

Chair: **Mark Lauer**, Lerner Research Institute, Cleveland Clinic

3:30pm **Overview of Hyaluronan Pathobiology**; Vincent Hascall, Cleveland Clinic

3:50pm **Hyaluronan Synthesis**; Edward Maytin, Cleveland Clinic

4:10pm **Hyaluronan Degradation**; Barbara Triggs-Raine, University of Manitoba

4:30pm **Hyaluronan Receptors**; Rashmin Savani, University of Texas Southwestern Medical Ctr

4:50pm **Hyaluronan Binding Proteins**; Thomas Wight, Benaroya Research Institute at Virginia Mason

5:10pm **Therapeutic Applications of Hyaluronan**; Carol de la Motte, Cleveland Clinic

3:30-5:30pm

SIG 3: ECM Turnover and Tissue Remodeling During Embryogenesis

Discussion Leaders: **Sumeda Nandadasa**, Lerner Research Institute, Cleveland Clinic and **Caroline Dancevic**, Deakin University **Student and post-doc organized (NEXTGEN)*

Location: Salon D

3:30pm **Invited Speaker: Elastic Fiber-associated Proteins in Development and Disease**; Hiromi Yanagisawa, UT Southwestern Medical Center

79 4:10pm **Type III Collagen Is Important for Type I Collagen Fibrillogenesis and for Dermal and Cardiovascular Development**; Sanne D'hondt, Ghent University Hospital, Belgium
Poster B113

164 4:25pm **Hyaluronan Synthesis Provides a Mechanism for Asymmetric Gut Morphogenesis**; Aravind Sivakumar, Cornel University
Poster LB08

144 4:40pm **Using the Zebrafish Model System to Visualize and Quantify the Regulation of MMP Activity and Its Biologically Relevant Consequences**; Bryan Crawford, University of New Brunswick, Canada
Poster B72

75 4:55pm **Compliance and TGFβ; Regulate Extracellular Matrix Assembly in Developing Salivary Gland**; Melinda Larsen, University at Albany, SUNY
Poster B111

67 5:10pm **Uncovering Novel Roles for Col5a2 in Embryo and Adult Tissues**; Arick Park, University of Wisconsin, Madison
Poster B107

3:30-5:30pm

SIG 4: The Physics and Chemistry of Fibronectin

Organizers: **Adam J. Engler**, University of California San Diego and **Thomas H. Barker**, Georgia Institute of Technology

Location: Salon E

3:30pm **Fibronectin Matrix Assembly**; Jean Schwarzbauer, Princeton University

4:00pm **Fibronectin Rich 3D Matrix Triggers the Pressure Driven Motility of Adherent Cells**; Ryan Petrie National Institutes of Health

4:30pm **Viscoelasticity and Altered Biological Properties Result from Bond Breakage within Fibronectin Fibers**; Michael Smith, Boston University

5:00pm **Demonstration of a Force-actived Integrin Switch within Fibronectin**; Thomas Barker, Georgia Institute of Technology

6:00-7:00pm

Opening Reception

Location: North and East Foyers

7:00-7:15pm

President's Welcome

Location: Salon D-E

7:15-8:00pm

Keynote Lecture: A New Kinase Family That Plays a Key Role in Bone and Tooth Development

Location: Salon D-E

Jack Dixon, University of California San Diego

Monday, October 13th

7:30am-5:00pm

Registration

Location: West Foyer

7:30am-6:00pm

Exhibits

Location: North and East Foyers

7:30-8:30am

Breakfast

Location: North and East Foyers

ASMB 2014

7:30-8:30am

Career Mentoring Breakfast

(RSVP Required, space limited)

Location: Erie and Superior

8:30-10:00am

Plenary I: New Developments in ECM Structure and Function

Location: Salon D-E

Chair: **Robert Mecham**, Washington University in St. Louis

Tribute to Paul Bornstein

8:30am **Cancer Cell Invasion in Complex Matrix Environments**; Erik Sahai, London Research Institute, UK

9:00am **Structural Biology of the Laminin Network;** Erhard Hohenester, Imperial College, London

9:30am **Heparin Inhibits Intracellular Synthesis of Hyaluronan in Hyperglycemic Dividing Cells;** Vincent C. Hascall, Cleveland Clinic Lerner Research Institute
ASMB Senior Investigator Award Winner

10:00-10:30am

Coffee Break

Location: North and East Foyers

Sponsored by The Shriners

10:30-12:00pm

Plenary II: Novel Insights on Cell-Matrix Interactions

Sponsored by Gilead

Location: Salon D-E

Chair: **Jean Schwarzbauer**, Princeton University

1 10:30am **Why is TGFβ Latent and BMP9 Not?;** Timothy Springer, Harvard Medical School

11:00 am **Inhibition and Activation Mechanisms of Integrin-mediated Cell-Matrix Adhesions**; Jun Qin, Cleveland Clinic Lerner Research Institute

11:30 am **The Critical Role of TIMP3 in Pulmonary Homeostasis and Lung Injury;** Sean Gill, Western University, London, Ontario, ASMB Junior Investigator Awardee

12:00-12:30pm

ASMB Business Meeting

Location: Salon D-E

12:30-2:30pm

Poster Session I - Lunch

Sponsored by the Cleveland Clinic Foundation

Location: Salon F-H

2:30-4:00pm

Concurrent Sessions

Concurrent A: Basement Membrane: Assembly, Function and Disorders

Location: Salon A-C

Chair: **Peter Yurchenco**, Rutgers University

2:30 pm **Laminin Assembly and Repair of Laminin-Deficiency**; Peter Yurchenco, Rutgers University

2 3:00pm **Soluble Lutheran Glycoprotein/basal Cell Adhesion Molecule is Detectable in Plasma of Hepatocellular Carcinoma Patients and Modulates Cellular Interaction with Laminin-511 in Vitro**; Yamato Kikkawa, Tokyo University of Pharmacy and Life Sciences
Poster B1

3 3:15pm **Mechanistic Heterogeneity in Multi-System Disorders Caused By COL4A1 and COL4A2 Mutations**; Doug Gould, University of California, San Francisco
Poster B75

4 3:30pm **The C-terminal Glu Residue of Laminin γ1 Chain That Is Essential for Integrin Binding Is Positioned at the Junctional Region of G1 and G2 Domains of Laminin-511**; Yukimasa Taniguchi, Institute for Protein Research
Poster B2

5 3:45pm **Lysyl Oxidase Like-2 Catalyzes the Formation of Covalent Crosslinks in the 7S domain of Basement Membrane Collagen IV;** Roberto Vanacore, Vanderbilt University
Poster B76

Concurrent B: Skin Biology and Wound Healing

Location: Salon D

Chair: **Lester Lau**, University of Illinois at Chicago

2:30 pm **The Matricellular Protein CCN1 in Inflammation, Fibrosis, and Wound Healing**; Lester Lau, University of Illinois at Chicago

6 3:00pm **Intradermal Injection of LCB 03-0110, A Pan-Src/DDR Tyrosine Kinase Family Inhibitor Reduces a Formed Hypertrophic Scar in Rabbit with a Better Efficacy and Less Side-effect Than Triamcinolone Acetonide, A Steroidal Agent**; Beom-Seok Yang, Korea Institute of Science and Technology
Poster B3

7 3:15pm **Thrombospondin 3 and 4 Have Opposing Functions in Wound Healing;** Tobias Schips, Cincinnati Children's Hospital
Poster B77

8 3:30pm **Fibrosis and Wound Healing: Mice Lacking the Hyaluronan Synthases Has1 and Has3 Show Increased Expression of TFG-β1 and Has2 and Increased Myofibroblast Activity in Skin Wounds**; Sajina Shakya, Cleveland Clinic Lerner Research Institute
Poster B4

9 3:45pm **Type VI Collagen: A Novel Regulator of ECM Assembly and Wound Repair**; Georgios Theocharidis, Queen Mary University of London
Poster B78

Concurrent C: Cardiovascular Biology and Disease

Location: Salon E

Chair: **Elena Aikawa**, Brigham and Women's Hospital

2:30 pm **Matrix Vesicles as Precursors of Cardiovascular Microcalcification**; Elena Aikawa, Brigham and Women's Hospital

10 3:00pm **Combined Genetic-Pharmacologic Inactivation of Tightly Linked Metalloproteases (ADAMTS1 & ADAMTS5), Uncovers Novel Roles in Cardiac Rotation and Ventricular Septal Closure**; Simon Foulcer, Cleveland Clinic
Poster B5

11 3:15pm **Loss of Fibulin-4 Disrupts Collagen Synthesis and Maturation**; Christina Papke, UT Southwestern
Poster B79

12 3:30pm **Preventive and Therapeutic Approaches to Reduce Severity of Hemorrhagic Stroke Caused by Col4a1 Mutation**; Marion Jeanne, UCSF
Poster B6

13 3:45pm **Cardiovascular Manifestations of Aberrant Elastic Fiber Formation in Mice with Mutant Fibulin-4, Carmen Halabi;** Washington University School of Medicine
Poster B80

4:00-4:30pm

Coffee Break

Location: North and East Foyers

4:30-6:00pm

Concurrent Sessions

Concurrent D: Matrix Receptors, Adhesion and Migration

Location: Salon A-C

Chair: **Roy Zent**, Vanderbilt University

4:30 pm *Integrins and the Kidney*; Roy Zent, Vanderbilt University

14 5:00pm **Matrix Density Alters Zyxin Phosphorylation, Which Limits Peripheral Process Formation and Extension in Endothelial Cells Invading 3D Collagen Matrices**; Kayla Bayless, Texas A&M Health Science Center
Poster B7

15 5:15pm **Talin Regulates Kidney Development Through Integrin Dependent and Independent Mechanisms**; Sijo Mathew, Vanderbilt Univeristy Medical Center
Poster B81

16 5:30pm **Phosphoinositide 3-Kinase Gamma (PI3KÎ³) Enhances Transient Receptor Potential Vanilloid 4 (TRPV4) Ion Channel Function and Myofibroblast Differentiation**; Lisa Grove, Cleveland Clinic
Poster B8

17 5:45pm **Collagen Integrins Recognize Monomolecular Cartilage Collagens, But Not Their Fibrils**; Uwe Hansen, University Hospital Muenster
Poster B82

Concurrent E: ECM Biosynthesis, Assembly and Post-translational Modification

Location: Salon D

Chair: **Deane Mosher**, University of Wisconsin-Madison

4:30 pm **Eosinophils, Periostin, and the TH2-Conditioned Extracellular Matrix**; Deane Mosher, University of Wisconsin-Madison

18 5:00pm **A Disintegrin and Metalloproteinase with Thrombospondin Motifs (ADAMTS)-17 Is Broadly Expressed During Embryonic Development and Selectively Affects Fibrillin-2 Assembly**; Dirk Hubmacher, Cleveland Clinic
Poster B9

19 5:15pm **SEC23A Is Required for the Secretion of Multiple Collagen Species**; Bin Zhang, Lerner Research Institute
Poster B83

20 5:30pm **Transglutaminase 2 and Factor XIIIA Regulate Bone Remodeling: Double-knockout Mice Have Increased Osteoclastogenesis, Defective Plasma FN Stabilization in Bone and Increased Bone Marrow Adiposity**; Mari Kaartinen, McGill University
Poster B10

21 5:45pm **Super-resolution Imaging of Fibronectin Extracellular Matrix;** Susanna Frueh, ETH Zurich
Poster B84

Concurrent F: ECM and the Musculoskeletal System

Location: Salon E

Chair: **Ronen Schweitzer**, Shriners Hospital for Children, Portland

4:30 pm **Regulation of Tendon Growth and Elongation;** Ronen Schweitzer, Shriners Hospital for Children, Portland

22 5:00pm **Muscle Composition Is Regulated By a Lysyl Oxidase-Transforming Growth Factor Beta Feedback Loop**; Peleg Hasson, Rappaport Faculty of Medicine, Technion
Poster B11

23 5:15pm **Heterotopic Ossification of *Adamts7* and *Adamts12* Deficient Ligaments, Menisci and Tendons**; Timothy Mead, Cleveland Clinic
Poster B85

24 5:30pm **Drug Therapy Reduces Mutant COMP Intracellular Retention and Growth Plate Chondrocyte Death**; Karen Posey, UT Medical School Houston
Poster B12

25 5:45pm **Structural Analysis of the Adaptation of PDL to Mechanical Loads**; Gili Naveh, Harvard University
**Ehlers-Danlos National Foundation Sponsored Travel Award Winner*
Poster B86

Tuesday, October 14th

7:30 am-5:00pm

Registration

Location: West Foyer

7:30 am-5:30pm

Exhibits

Location: North and East Foyers

7:30-8:30am

Breakfast

Location: North and East Foyers

7:30-8:30am

Women Mentoring Women Breakfast

(RSVP Required, space limited)

Location: Erie and Superior

8:30-10:00am

Plenary III: Morphogenesis

Location: Salon D-E

Session Chair: **Maurizio Pacifici**, Children's Hospital of Philadelphia

8:30am **Spinning the Matrix - Basement Membrane Secretion and Remodeling During Organ Morphogenesis**; Sally Horne-Badovinac, University of Chicago

9:00am **Identification of a New Matrix Adhesion System in the Worm: Basement Membrane-Basement Membrane Linkage**; David Sherwood, Duke University

9:30am **Regulation of Smooth Muscle Cell Plasticity During the Assembly of the Vascular Wall: Why Are Vessels Not Tracheas?**; Luisa Iruela-Arispe, UCLA

10:00-10:30am

Coffee Break

Location: North and East Foyers

10:30-12:00pm

Plenary IV: Genetic Disorders of ECM, ECM Receptors and the ECM-cell Continuum

Location: Salon D-E

Co -Chairs: **Bjorn Olsen**, Harvard University and **Shireen Lamande**, Murdoch Children's Research Institute

Tribute to Dick Heinegard

10:30am **ISMB Awardee Lecture: Genetic Skin Fragility: Disease Mechanism-based Therapeutic Perspectives**; Leena Bruckner-Tuderman, University Frieburg, Germany
**ISMB Distiguished Investigator Awardee*

11:00am **Acromelic Dysplasia and TGFβ Signaling**; Valerie Cormier-Daire, Hospital Necker, Paris, France

11:30am **Genetic Disruption of the Contractile-Elastin Unit and Mechanosensing in Thoracic Aortic Aneurysm and Dissection**; Dianna Milewicz, The University of Texas Health Science Center at Houston

12:00-2:00pm

Poster Session II - Lunch

Sponsored by Gilead

Location: Salon F-H

2:00-3:30pm

Concurrent Sessions

Concurrent G: ECM As a Mediator of Host-Pathogen Interactions and Immune Responses

Location: Salon A-C

Chair: **Magnus Hook**, Texas A&M University

2:00pm **Matrix, Microbes & MSCRAMMs;** Magnus Hook, Texas A&M University

26 2:30pm **Whole Genome Sequencing of a Cho Cell Mutant Identifies Lama2 as a Host Factor for Bacterial Invasion;** Xander van Wijk, UCSD
Poster B13

27 2:45pm **A New Pathogenic Role for Syndecan-1 in Streptococcus Pneumoniae Corneal Infection**; Akiko Ohno, Boston Children's Hospital
Poster B87

28 3:00pm **Beta-strand Addition: Common Mechanism for Engagement of Fibronectin by Bacterial Proteins that Has Different Consequences**; Wenjiang Ma, University of Wisconsin – Madison
Poster B14

29 3:15pm **Treatment with Hyaluronan Fragments Induces the Anti-bacterial Protein Galectin-8 Expression in Intestinal Epithelium That May Protect from Salmonella Infection**; Yeojung Kim, Cleveland Clinic
Poster B88

Concurrent H: Proteoglycans and Glycobiology

Location: Salon D

Chair: **Joanna Phillips**, University of California-San Francisco

2:00pm **Proteoglycan Regulation of Oncogenic Signaling in Brain Cancer;** Joanna Phillips, University of California-San Francisco

30 2:30pm **Disruption of Hyaluronan Homeostasis Leads to Abnormal Bone Development and Hematopoiesis;** Aaron Petrey, Cleveland Clinic
Poster B15

31 2:45pm **Endocytosis-driven Dissociation of β1 Integrin Triggers Syndecan-1 Shedding and Enhances Staphylococcus Aureus Virulence**; Kazutaka Hayashida, Children's Hospital, Harvard Medical School
Poster B89

32 3:00pm **A New Mechanistic Link Between Decorin-induced Peg3 and TFEB in Inducing Endothelial Cell Autophagy and Angiostasis;** Thomas Neill, Thomas Jefferson University
**ASMB Travel Award Winner*
Poster B16

33 3:15pm **Defective Initiation of Glycosaminoglycan Synthesis Due to B3GALT6 Mutations Causes a Pleiotropic Ehlers-Danlos Syndrome-like Connective Tissue Disorder**; Tim Van Damme, Ghent University Hospital
**ISMB International Travel Award Winner*
Poster B90

Concurrent I: Tumor Microenvironment

Location: Salon E

Chair: **Patricia Keely**, University of Wisconsin-Madison

2:00pm **The Role of Extracellular Matrix Alignment on Cell Invasion;** Patricia Keely, University of Wisconsin-Madison

34 2:30pm **Regulation of Liver Tumorigenesis By Type XVIII Collagen**; Michael Duncan, Georgia Regents University
**ASMB Minority Travel Award Winner*
Poster B17

35 2:45pm **Stiffness of the Micro-environment Modulates Tumor Dormancy and Chemotherapy Resistance in a Hepatic All-human Microphysiologic Model of Metastasis**; Sarah Wheeler, University of Pittsburgh
Poster B91

36 3:00pm **Decorin Evokes Autophagy in Endothelial Cells Via Activation of AMPK and ULK1**; Atul Goyal, Thomas Jefferson University
Poster B18

37 3:15pm **Collagen Degradation Under Normal and Malignant Conditions Is Mediated by M2-like Macrophages**; Daniel Madsen, NIH
Poster B92

3:30-4:00pm

Coffee Break

Location: North and East Foyers

4:00-5:30pm

Concurrent Sessions

Concurrent J: Cellular Regulation by ECM/Growth Factor Regulation

Location: Salon A-C

Chair: **Andrew Leask**, Western University, Canada

4:00pm **CCN2 (CTGF): A Multifunctional Regulator of Stem Cell Niches**; Andrew Leask, Western University, Canada

38 4:30pm **The RGD Sequence of Fibrillin-1 Regulates Gene Expression By Inducing MicroRNAs;** Karina Zeyer, McGill University
Poster B19

39 4:45pm **CD47 Inhibits Breast Cancer Stem Cell Growth By Targeting EGF-EGFR Signaling**; Sukhbir Kaur, National Cancer Institute
Poster B93

40 5:00pm **Thrombospondin1 Control of TGF-Beta in the Myeloma Bone Marrow Microenvironment**; Joanne Murphy-Ullrich, Univ. of Alabama at Birmingham
Poster B20

41 5:15pm **Micropatterned Cell-derived ECM to Stimulate Neurite Alignment;** Greg Harris, Princeton University
Poster B94

Concurrent K: Integrating ECM and Cell Biomechanics

Location: Salon D

Chair: **Celeste Nelson**, Princeton University

4:00pm **Matrix, Mechanics, and Epithelial Morphogenesis;** Celeste Nelson, Princeton Univ.

42 4:30pm **Generation of Polarized Pressure By a Nuclear Piston Governs 3D Cell Motility**; Ryan Petrie, NIH
Poster B21

43 4:45pm **TRPV4 Ion Channel Mediates Mechanosensing, Myofibroblast Differentiation and Pulmonary Fibrosis in Mice**; Mitchell Olman, Lerner Research Institute - Cleveland Clinic
Poster B95

44 5:00pm **Cellular Contribution to (Cyclic) Stretch-induced Fibrous Tissue Morphogenesis and Adaptation;** Jasper Foolen, ETH Zurich
Poster B22

45 5:15pm **The Combined Effects of Substrate Stiffness and ECM Protein Composition on Cardiac Myofibroblast Gene Expression**; Albert Gao, Tufts University
Poster B96

Concurrent L: Proteinases and Their Inhibitors

Location: Salon E

Chair: **William C. Parks**, Cedars-Sinai Medical Center

4:00pm **MMPs and Fibrosis;** William C. Parks, Cedars-Sinai Medical Center

46 4:30pm **Modulatory Effects of Sulfated Glycosaminoglycans on Cathepsin S: Influence on Basement-Membrane Collagen IV Degradation;** Fabien Lecaille, Inserm UMR1100
Poster B23

47 4:45pm **Sonic Hedgehog-Mediated Patterning in Zebrafish is Dependent Upon the Expression of the Metzincin ADAMTS5**; Carolyn Dancevic, Deakin University
**ASMB Travel Award Winner*
Poster B97

48 5:00pm **Molecular and Cellular Differentiation Deficits in Bmp1 and Tll1 Knockdown Mice;** Alison Muir, University of Wisconsin – Madison
Poster B24

49 5:15pm **Type II N-procollagen Fibrils in Chondrocyte Cultures: Studies on Assembly and Lateral Growth;** Russell Fernandes, University of Washington
Poster B98

7:00-11:00pm

Banquet – Rock and Roll Hall of Fame

(Advanced ticket purchase required. Limited tickets are available at the meeting registration desk. Your banquet ticket includes admission to the museum exclusively for ASMB.)

Wednesday, October 15th

8:00am-12:00pm

Registration

Location: West Foyer

8:30am-1:00pm

Exhibits

Location: North and East Foyers

9:30-11:00am

Plenary V: Translating the Basics to Patient Care

Sponsored by the Cleveland Clinic

Location: Salon D-E

Chair: **Linda Sandell**, Washington University in St. Louis

9:30am **Fibroblast Heterogeneity: Identifying Fibrosis Mediators**; Michelle Tallquist, University of Hawaii

10:00am **Matrix Scaffolds for Therapeutic Applications;** Stephen Badylak, University of Pittsburgh

10:30am **Sticky Science: Using Extracellular Matrix to Guide Stem Cell Fate and Restore Function in Vivo;** Adam Engler, University of California, San Diego
Iozzo Award Winner

11:00-11:30am

Coffee Break

Location: North and East Foyers

11:30am -1:00pm

Concurrent Sessions

Concurrent M: Neural and Ocular ECM: The Next Frontier

Location: Salon A-C

Chair: **Cagla Eroglu**, Duke University

11:30am **Control of Excitatory Synapse Development by Extracellular Matrix Proteins Thrombospondin, Hevin and SPARC**; Cagla Eroglu, Duke University

50 12:00pm **Repeated Cocaine Exposure Increases Perineuronal Net Staining in the Rat Medial Prefrontal Cortex**; Megan Slaker, Washington State University Vancouver
Poster B25

51 12:15pm **Posttranslationally Abnormal Collagens of P3h2-null Mice Offer a Pathobiological Understanding of High Myopia Linked to Human LEPREL1 Mutations**; David Hudson, University of Washington
Poster B99

52 12:30pm **Adamts9 Regulates Ocular Extracellular Matrix During Development and Is Implicated in Anterior Segment Dysgenesis;** Johanne Dubail, Cleveland Clinic Lerner Research Institute
Poster B26

53 12:45pm **Systemic Inflammation Induces Changes in Hyaluronan-associated Brain ECM, Partial Reversal with Indomethacin**;
May Reed, Harborview Medical Center
Poster B100

Concurrent N: Stem Cell Biology and Regenerative Medicine

Location: Salon D

Chair: **Chay Kuo**, Duke University

11:30am **Thrombospondin and Stem Cell Fate Decisions in the Brain**; Chay Kuo, Duke University

54 12:00pm **Recombinant Laminin Fragments Endowed with Collagen-binding Activity: A Tool for Conferring Laminin-like Cell-adhesive Activity to Collagen Matrices**; Ryoko Sato-Nishiuchi, Institute for Protein Research, Osaka University
**ISMB International Travel Award Winner*
Poster B27

55 12:15pm **Enhancing Cell Motility and Angiogenesis in Dense Fibrin-based Extracellular Matrices**; Alison Douglas, Georgia Institute of Technology
Poster B101

56 12:30 **Dissecting the Contribution of Fibroblasts to Skin Regeneration Using a Mouse Model of Embryonic Healing**; Traci Wilgus, Ohio State Univ.
Poster B28

57 12:45pm **Defective Fibrinolytic Potential of Adipose-Derived Stem Cells from Diabetic Donors**; Justin Weinbaum, University of Pittsburgh
Poster B102

Concurrent O: Fibrosis and Chronic Disorders

Location: Salon E

Chair: **Enid Neptune**, Johns Hopkins Medical College

11:30am **Active Matrix: Repository for Airspace Maintenance and Regeneration Strategies**; Enid Neptune, Johns Hopkins Medical College

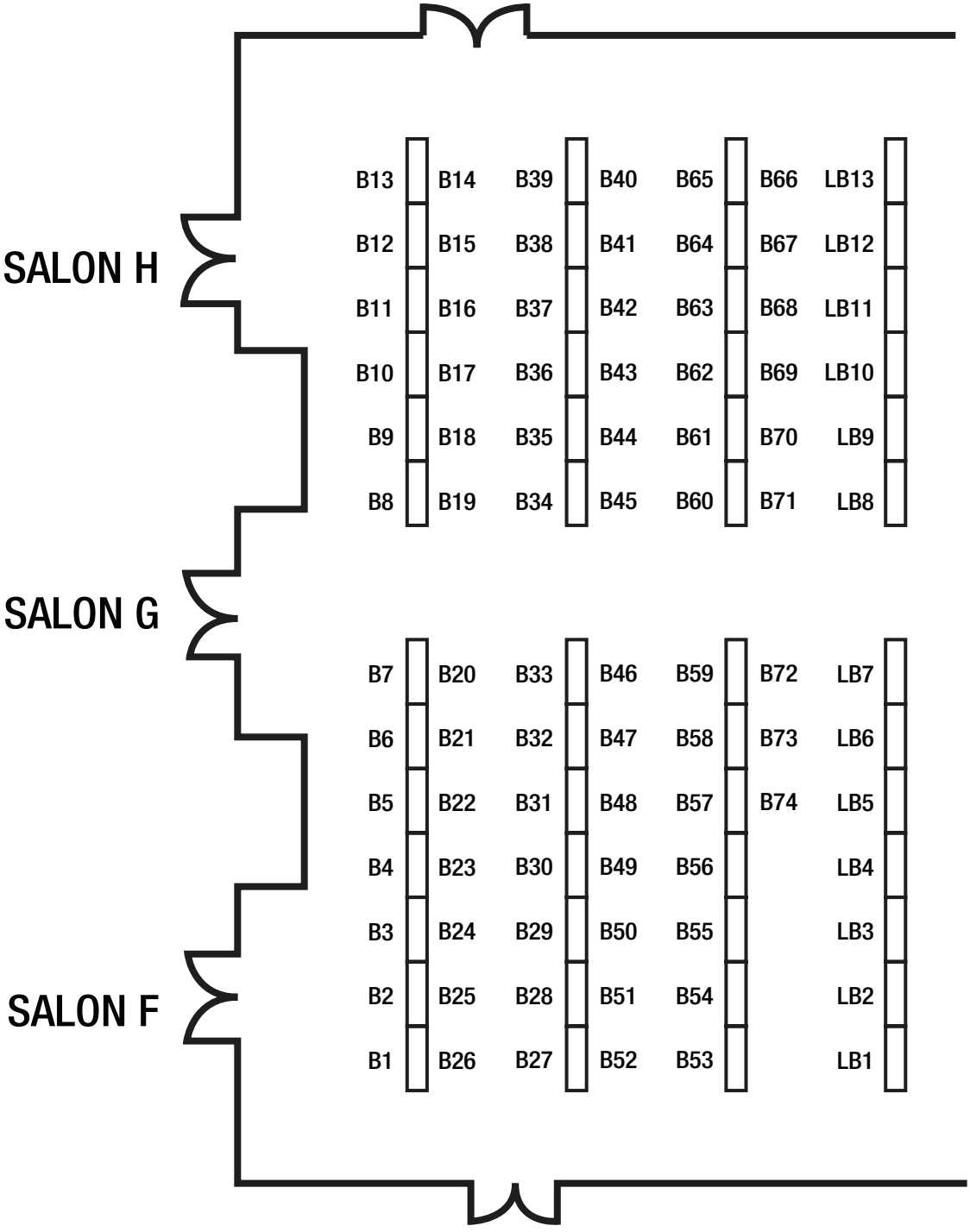
58 12:00pm **The Matricellular Protein CCN1 Is Critical for Cutannous Wound Healing By Inducing Macrophage Clearance of Neutrophils;** Joonil Jun, University of Illinois at Chicago
Poster B29

59 12:15pm **Regulation of Scleraxis-mediated Cardiac Fibrotic Gene Expression By Serine Phosphorylation**; Rushita Bagchi, University of Manitoba
**ISMB International Travel Award Winner*
Poster B103

60 12:30pm **A Thy-1/Fyn/avβ3 Integrin Mechanosignaling Axis Modulates ECM Rigidity Sensing in Lung Fibrosis**; Vincent Fiore, Georgia Institute of Technology
**ASMB Travel Award Winner*
Poster B30

61 12:45pm **Stimulatory Effects of Advanced Glycation Endproduct (AGE)-modified Fibronectin on Extracellular Matrix Assembly**;
Alexandra Pastino, Princeton University
**ASMB Travel Award Winner*
Poster B104

Poster Session I Floor Plan



Poster Session I Monday, October 13, 12:30 – 2:30 pm

Selected Talk Posters

Concurrent A: Basement Membrane: Assembly, Function and Disorders

B1 (abstract 2)

Soluble Lutheran Glycoprotein/Basal Cell Adhesion Molecule Is Detectable in Plasma of Hepatocellular Carcinoma Patients and Modulates Cellular Interaction with Laminin-511 In Vitro

Yamato Kikkawa, Takahiro Miwa, Laboratory of Clinical Biochemistry, Tokyo University of Pharmacy and Life Sciences, Hachioji; Naoki Tanimizu, Research Institute for Frontier Medicine, Sapporo Medical University School of Medicine, Sapporo; Yuichi Kadoya, Kitasato University School of Allied Health Sciences, Minami-ku, Sagamihara; Takaho Ogawa, Fumihiko Katagiri, Kentaro Hozumi, Motoyoshi Nomizu, Laboratory of Clinical Biochemistry, Tokyo University of Pharmacy and Life Sciences, Hachioji; Toru Mizuguchi, Koichi Hirata, Sapporo Medical University School of Medicine, Sapporo; Toshihiro Mitaka, Research Institute for Frontier Medicine, Sapporo Medical University School of Medicine, Sapporo

B2 (abstra ct 4)

The C-Terminal Glu Residue of Laminin γ1 Chain That Is Essential for Integrin Binding Is Positioned at the Junctional Region of G1 and G2 Domains of Laminin-511

Yukimasa Taniguchi, Junko Toga, Emiko Yagi, Naoko Norioka, Laboratory of Extracellular Matrix Biochemistry, Institute for Protein Research, Osaka University; Kenji Iwasaki, Laboratory of Protein Synthesis and Expression, Institute for Protein Research, Osaka University; Kiyotoshi Sekiguchi, Laboratory of Extracellular Matrix Biochemistry, Institute for Protein Research, Osaka University

Concurrent B: Skin Biology and Wound Healing

B3 (abstract 6)

Intradermal Injection of LCB 03-0110, a Pan-Src/DDR Tyrosine Kinase Family Inhibitor Reduces a Formed Hypertrophic Scar in Rabbit with a Better Efficacy and Less Side-Effect Than Triamcinolone Acetonide, a Steroidal Agent

Xiaoyan Sun, Sun-Young Park, Trong Nhat Phan, Hae Jong Kim, Beom-Seok Yang; Korea Institute of Science and Technology, Seoul

B4 (abstract 8)

Fibrosis and Wound Healing: Mice Lacking The Hyaluronan Synthases Has1 And Has3 Show Increased Expression of TFG-β1 and Has2 and Increased Myofibroblast Activity in Skin Wounds

Judith A. Mack, Yan Wang, Sajina Shakya, Edward V. Maytin, Cleveland Clinic

Concurrent C: Cardiovascular Biology and Disease

B5 (abstract 10)

Combined Genetic-Pharmacologic Inactivation of Tightly Linked Metalloproteases (Adamts1 & Adamts5), Uncovers Novel Roles in Cardiac Rotation and Ventricular Septal Closure

Simon Foulcer, Courtney Nelson, Lerner Research Institute, Cleveland Clinic; Jonathon Larkin, Experimental Medicine Unit – Immunoinflammation Therapeutic Care, GlaxoSmithKline; Suneel Apte, Lerner Research Institute, Cleveland Clinic

B6 (abstract 12)

Preventive and Therapeutic Approaches to Reduce Severity of Hemorrhagic Stroke Caused by Col4a1 Mutation

Marion Jeanne, Jeff Jorgensen, Douglas B. Gould; University of California San Francisco

Concurrent D: Matrix Receptors, Adhesion and Migration

B7 (abstract 14)

Matrix Density Alters Zyxin Phosphorylation, Which Limits Peripheral Process Formation and Extension in Endothelial Cells Invading 3D Collagen Matrices

Kayla Bayless, Colette Abbey; Texas A&M Health Science Center

B8 (abstract 16)

Phosphoinositide 3-Kinase Gamma (PI3Kγ) Enhances Transient Receptor Potential Vanilloid 4 (TRPV4) Ion Channel Function and Myofibroblast Differentiation

Lisa Grove, Shaik Rahaman, Sailaja Paruchuri, Brian Southern, Rachel Scheraga, Susamma Abraham, Kathryn Niese, Sathyamangla Naga Prasad, Mitchell Olman; Cleveland Clinic

Concurrent E: ECM Biosynthesis, Assembly and Post-translational Modification

B9 (abstract 18)

A Disintegrin and Metalloproteinase with Thrombospondin Motifs (ADAMTS)-17 Is Broadly Expressed during Embryonic Development and Selectively Affects Fibrillin-2 Assembly

Dirk Hubmacher, Lauren C. Beene, Cleveland Clinic Lerner Research Institute; Dieter P. Reinhardt, McGill University; Suneel S. Apte, Cleveland Clinic Lerner Research Institute

B10 (abstract 20)

Transglutaminase 2 and Factor XIIIA Regulate Bone Remodeling: Double- Knockout Mice Have Increased Osteoclastogenesis, Defective Plasma FN Stabilization in Bone and Increased Bone Marrow Adiposity

Aisha Mousa, Cui Cui, Aimei Song, Vamsee D. Myneni, Faculty of Dentistry, McGill University, Montreal, QC, Canada; Ji Li, Monzur Murshed, Shriners Hospital for Children, Montreal, QC, Canada and Faculty of Dentistry, McGill University, Montreal, QC, Canada; Gerry Melino, University of Leicester, Leicester, UK; Gerhard Dickneite, CSL Behring Gmbh, Marburg, Germany; Mari T. Kaartinen, Faculty of Dentistry and Faculty of Medicine (Experimental Medicine), McGill University, Montreal, QC, Canada

Concurrent F: ECM and the Musculoskeletal System

B11 (abstract 22)

Muscle Composition Is Regulated by a Lysyl Oxidase-Transforming Growth Factor Beta Feedback Loop

Peleg Hasson, Liora Kutchuk, Technion – Israel Institute of Technology; Anu Laitala, University of Oulu; Sharon Soueid-Bomgarten, Pessia Shentzer, Technion – Israel Institute of Technology; Ann-Helen Rosendahl, University of Oulu; Shelly Eilot, Technion – Israel Institute of Technology; Moran Grossman, Irit Sagi, Weizmann Institute of Science; Raija Sormunen, Johanna Myllyharju, Joni Mäki, University of Oulu

B12 (abstract 24)

Drug Therapy Reduces Mutant COMP Intracellular Retention and Growth Plate Chondrocyte Death

Karen Posey, Francoise Coustry, Alka C. Veerisetty, Mohammad G. Hossain, Joseph L. Alcorn, Jacqueline T. Hecht, University of Texas Medical School at Houston and Shriners Hospital for Children

Concurrent G: ECM As a Mediator of Host-Pathogen Interactions and Immune Responses

B13 (abstract 26)

Whole Genome Sequncineg of a CHO Cell Mutant Identifies LAMA2 as a Host Factor for Bacterial Invasion

Xander van Wijk, Nathan Lewis, University of California, San Diego; Bjørn Voldborg, Björn Hallström, Bernhard Palsson, Novo Nordisk Foundation Center for Biosustainability, Technical University of Denmark, Hørsholm, Denmark; Victor Nizet, University of California, San Diego; Jeffrey Esko, University of California, San Diego

B14 (abstract 28)

Beta-Strand Addition: Common Mechanism for Engagement of Fibronectin by Bacterial Proteins that Has Different Consequences

Wenjiang Ma, Deane Mosher, University of Wisconsin-Madison

Concurrent H: Proteoglycans and Glycobiology

B15 (abstract 30)

Disruption of Hyaluronan Homeostasis Leads to Abnormal Bone Development and Hematopoiesis

Aaron Petrey, Dana Obery, Carol de la Motte, Cleveland Clinic

B16 (abstract 32)

A New Mechanistic Link between Decorin-Induced Peg3 and TFEB in Inducing Endothelial Cell Autophagy and Angiostasis

Thomas Neill, Catherine Sharp, Thomas Jefferson University; Rick Owens, LifeCell Corporation; Annabel Torres, Renato Iozzo, Thomas Jefferson University

Concurrent I: Tumor Microenvironment

B17 (abstract 34)

Regulation of Liver Tumorigenesis by Type XVIII Collagen

Michael Duncan, Priyanka Thakur, Medical College of Georgia, Georgia Regents University; Renumathy Dhanasekaran, Lewis Roberts, Mayo Clinic

B18 (abstract 36)

Decorin Evokes Autophagy in Endothelial Cells via Activation of AMPK and ULK1

Atul Goyal, Thomas Neill, Thomas Jefferson University; Liliana Schaefer, Goethe University, Frankfurt; Renato Iozzo, Thomas Jefferson University

Concurrent J: Cellular Regulation by ECM/Growth Factor Regulation

B19 (abstract 38)

The RGD Sequence of Fibrillin-1 Regulates Gene Expression by Inducing microRNAs

Karina Zeyer, Heena Kumra, Amani Hassan, Dieter P. Reinhardt, Faculty of Medicine and Faculty of Dentistry, McGill University

B20 (abstract 40)

Thrombospondin1 Control of TGF-beta in the Myeloma Bone Marrow Microenvironment

Joanne Murphy-Ullrich, Ailing Lu, Manuel Pallero, Yang Yang, University of Alabama at Birmingham; Mark Suto, Southern Research Institute
Concurrent K: Integrating ECM and Cell Biomechanics

B21 (abstract 42)

Generation of Polarized Pressure by a Nuclear Piston Governs 3D Cell Motility

Ryan Petrie, NIDCR/National Institutes of Health; Hyun Koo, University of Pennsylvania; Kenneth Yamada, NIDCR/National Institutes of Health

B22 (abstract 44)

Cellular Contribution to (Cyclic) Stretch-Induced Fibrous Tissue Morphogenesis and Adaptation

Jasper Foolen, ETH Zürich; Christhopher Chen, Boston University; Frank Baaijens, Eindhoven University of Technology, Netherlands; Viola Vogel, ETH Zürich

Concurrent L: Proteinases and Their Inhibitors

B23 (abstract 46)

Modulatory Effects of Sulfated Glycosaminoglycans on Cathepsin S: Influence on Basement-Membrane Collagen IV Degradation

Juliette Sage, INSERM U1100; Fabien Barbarin-Costes, Biochemistry; Robin Kurfurst, Sylvianne Schnebert, Carine Nizard, LVMH; Gilles Lalmanach, Fabien Lecaille, INSERM U1100

B24 (abstract 48)

Molecular and Cellular Differentiation Deficits in Bmp1 and Tll1 Knockdown Mice

Alison Muir, Daniel Greenspan, University of Wisconsin-Madison

Concurrent M: Neural and Ocular ECM: The Next Frontier

B25 (abstract 50)
Repeated Cocaine Exposure Increases Perineuronal Net Staining in the Rat Medial Prefrontal Cortex
Megan Slaker, Jordan Blacktop, Priya Kudva, Silas Aho, Ellie Ficco, Ryan Todd, Barbara Sorg, Washington State University Vancouver

B26 (abstract 52)
Adamts9 Regulates Ocular Extracellular Matrix during Development and Is Implicated in Anterior Segment Dysgenesis
Johanne Dubail, Cleveland Clinic Lerner Research Institute; Micheal Jenkins, Case Western Reserve University; Robert Haltiwanger, Deepika Vasudevan, Stony Brook University; Suneel Apte, Cleveland Clinic Lerner Research Institute

Concurrent N: Stem Cell Biology and Regenerative Medicine

B27 (abstract 54)
Recombinant Laminin Fragments Endowed with Collagen-Binding Activity: A Tool for Conferring Laminin-Like Cell-Adhesive Activity to Collagen Matrices
Ryoko Sato-Nishiuchi, Shaoliang Li, Kiyotoshi Sekiguchi, Institute for Protein Research, Osaka University

B28 (abstract 56)
Dissecting the Contribution of Fibroblasts to Skin Regeneration Using a Mouse Model of Embryonic Healing
Traci Wilgus, Brian Wulff, The Ohio State University

Concurrent O: Fibrosis and Chronic Disorders

B29 (abstract 58)
The Matricellular Protein CCN1 Is Critical for Cutannous Wound Healing by Inducing Macrophage Clearance of Neutrophils
Joonil Jun, Ki-Hyun Kim, Lester Lau, University of Illinois at Chicago

B30 (abstract 60)
A Thy-1/Fyn/αvβ3 Integrin Mechanosignaling Axis Modulates ECM Rigidity Sensing in Lung Fibrosis
Vincent Fiore, Georgia Institute of Technology and Emory University

Posters Only

New Developments in ECM Structure and Function

B31 (abstract 62)
Matrisome 2.0: Development of a Novel Searchable Database
Alexandra Naba, Huiming Ding, Charles A. Whittaker, Richard O. Hynes, Massachusetts Institute of Technology - Koch Institute

B32 (abstract 64)
Structure and Function of Zebrafish Elastins
Michelle Zorrilla, Zsolt Urban, University of Pittsburgh Graduate School of Public Health

B33 (abstract 66)
The NH2 Propeptide of Type IIB Collagen Protects Cartilage from Vascular Invasion In Vitro and In Vivo via RGD
Linda Sandell, Jennifer Mueller, Zhepeng Wang, Washington University in St. Louis

B34 (abstract 68)
Modification of Collagen Ultrastructure by DDR1 Impacts Matrix Mineralization
Jeff Tonniges, Ben Albert, The Ohio State University; Yuping Li, Conrado Aparicio, University of Minnesota; Gunjan Agarwal, The Ohio State University

B35 (abstract 70)
Investigating Strain-Induced Structural Changes in Fibronectin Nanofibers by AFM and STORM Imaging
John Szymanski, Adam W Feinberg, Carnegie Mellon University

Novel Insights on Cell-Matrix Interactions

B36 (abstract 72)
CD47 Regulation of the Keap1/NRF2 Pathway for Radioprotection
Anthony Schwartz, National Cancer Institute/National Institutes of Health

B37 (abstract 74)
Development of Protein Patterning-on-Topography to Study the Interplay between Microtopographical and ECM Cues on Cell Behavior
John Szymanski, Adam W Feinberg, Carnegie Mellon University

Morphogenesis

B38 (abstract 76)
Perinatal Lethality in ADAMTS1 Deficient Mouse
Satoshi Hirohata, Omer F Hatipoglu, Eriko Kusunoki, Takashi Ohtsuki, Junko Inagaki, Keiichi Asano, Yuri Shoji, Teruyuki Kawadi, Aya Hirata, Mehmet Z Cilek, Yoshifumi Ninomiya, Okayama University

Genetic Disorders of ECM, ECM Receptors and the ECM-Cell Continuum

B39 (abstract 78)
LTBP4 Regulates TGFβ by Stabilizing TGFβ Receptors
Chi-Ting Su, Elizabeth C. Lawrence, University of Pittsburgh Graduate School of Public Health; Branka Dabovic, NYU Langone School of Medicine; Zsolt Urban, University of Pittsburgh Graduate School of Public Health

B40 (abstract 80)
A Bacterial System to Investigate the Biological Consequences of Glycine Mutations in the Fibronectin Binding Sequence of Type II Collagen Panharith
Chhum, Bo An, Barbara Brodsky, Tufts University

B41 (abstract 82)

TGFβ² Signaling in Patients with ELN-Related Cutis

laxa Sevinc Alkan, Zsolt Urban, University of Pittsburgh

Translating the Basics to Patient Care

B42 (abstract 84)

Transcript Expression Changes over Time-from-Injury in Anterior Cruciate Ligament Tears: Implications for Reconstruction and Repair

Farooq Rai, Linda J Sandell, Robert Brophy, Washington Univ., St. Louis

Skin Biology and Wound Healing

B43 (abstract 86)

Migration and Extracellular Matrix Remodeling in Fetal, Neonatal and Adult Skin Fibroblasts: Effects of TGFβ

Masum M. Mia, Miriam Boersema, Ruud A. Bank, University Medical Center Groningen

B44 (abstract 88)

(E)-4-(3,4-Dimethoxyphenyl)but-3-en-1-ol Enhances Melanogenesis in a Microphthalmia-Associated Transcription Factor-Independent Fashion

Heesung Chung, Jisu Park, Ewha Womans University; Seung Hyun Bang, University of Ulsan College of Medicine, Asan Medical Center; Ah-Reum Han, Eun-Kyoung Seo, Ewha Womans University; Sung Eun Chang, University of Ulsan College of Medicine, Asan Medical Center; Eok-Soo Oh, Ewha Womans University

B45 (abstract 90)

The Blood Clot Translates Alterations in Surface Chemistry to Early Stages of Extracellular Matrix Remodeling

Melanie A. Burkhardt, Laboratory of Applied Mechanobiology, ETH Zurich, Switzerland; Jasmin Waser, Thommen Medical AG, Grenchen, Switzerland; Vincent Milleret, Laboratory of Cell and Tissue Engineering, University Hospital Zurich, Switzerland; Isabel Gerber, Laboratory of Applied Mechanobiology, ETH Zurich, Switzerland; Maximilian Y. Emmert, Swiss Center for Regenerative Medicine, Zurich, Switzerland; Jasper Foolen, Laboratory of Applied Mechanobiology, ETH Zurich, Switzerland; Simon P. Hoerstrup, Swiss Center for Regenerative Medicine, Zurich, Switzerland; Falko Schlottig, Thommen Medical AG, Grenchen, Switzerland; Viola Vogel, Laboratory of Applied Mechanobiology, ETH Zurich, Switzerland

Cardiovascular Biology and Disease

B46 (abstract 92)

Transforming Growth Factor β-Induced Protein Promotes Severe Vascular Inflammatory Responses

Jong-Sup Bae, Wonhwa Lee, Hye-Nam Son, Ju-Ock Nam, Jung-Eun Kim, Shin-Woo Kim, Kyungpook National University; In-San Kim, Korea Institute of Science and Technology

B47 (abstract 94)

Valve Thickening and Atrial Enlargement in Hyaluronidase 2 Knockout Mice Lead to Progressive Diastolic Dysfunction

Biswajit Chowdhury, Bo Xiang, Richard Hemming, Vernon Dolinsky, Barbara Triggs-Raine, University of Manitoba

B48 (abstract 96)

Cardiac Malformations in Elastin Microfibril Interface Located Proteins, EMILIN2 and EMILIN1 Deficient Mice

Anuradha Guggilam, Jessica Grondolsky, Stanley L Hazen, Jane Hoover-Plow, Cleveland Clinic Lerner Research Institute

B49 (abstract 98)

Emilin1 Deficient Model of Aortic Valve Disease: Role of Elastases and p-Erk1/2

Charu Munjal, Amy Opoka, Anil G Jegga, Cincinnati Children's Hospital Medical Center; Russel A Norris, Medicine University of South Carolina; Craig J Thomas, National Center for Advanced Translational Science; Giorgio M. Bressan, University of Padua; Robert B. Hinton.

B50 (abstract 100)

Antagonistic Regulation of Transforming Growth Factor-Beta by Fibulin-4a and Fibulin-4b Is Required for Cardiovascular and Musculoskeletal Development in Zebrafish

Sandeep Khatri, Zsolt Urban, Andrew Maxfield, University of Pittsburgh

Matrix Receptors, Adhesion and Migration

B51 (abstract 102)

Biophysical and Functional Characterization of the ILK/Kindlin I

Koichi Fukuda, Kamila Bledzka, Jun Yang, Dhanuja Perera, Edward Plow, Jun Qin, Cleveland Clinic

B52 (abstract 104)

Urokinase Receptor (uPAR) Ligation Induces a Raft-Localized Integrin Signaling Switch that Mediates the Hypermotile Phenotype of Fibrotic Fibroblasts

Lisa Grove, Brian Southern, Cleveland Clinic; Tong Jin, Kimberly White, University of Alabama at Birmingham; Sailaja Paruchuri, Cleveland Clinic; Efrat Harel, Ying Wei, University of California San Francisco; Shaik Rahaman, Candece Gladson, Cleveland Clinic; Qiang Ding, Charles Craik, University of Alabama at Birmingham; Harold Chapman, University of California San Francisco; Mitchell Olman, Cleveland Clinic

ECM Biosynthesis, Assembly and Post-translational Modification

B53 (abstract 106)

Serotonin Interferes with Transglutaminase-Mediated Stabilization of Plasma Fibronectin into Extracellular Matrix in Osteoblast Cultures Which Inhibits Matrix Production and Mineralization

Cui Cui, Mari T. Kaartinen, Faculty of Dentistry and Faculty of Medicine, McGill University

B54 (abstract 108)

Illuminating the Protein Homeostasis Network of Collagen-I

Andrew DiChiara, Rebecca Taylor, Madeline Wong, Matthew Shoulders, Massachusetts Institute of Technology

ECM and the Musculoskeletal System

B55 (abstract 110)
Limb-Specific Deletion of Adamtsl2 in Mice Leads to Brachydactyly Resembling Geleophysic Dysplasia, a Human Acromelic Dysplasia
Dirk Hubmacher, Suneel S. Apte, Cleveland Clinic, Lerner Research Institute

B56 (abstract 112)
Role of Glucocorticoid Receptor in Regulation of Substance P Synthesis in Tendon Cells
Rouhollah Mousavizadeh, University of British Columbia; Ludvig Backman, Umea University, Sweden; Robert G. McCormack, Alex Scott, University of British Columbia

B57 (abstract 114)
A Tendon-Specific Collagen V-Null Mouse Model Demonstrates a Joint Phenotype Characteristic of Classic Ehlers-Danlos Syndrome
Mei Sun, University of South Florida; Brianne K. Connizzo, University of Pennsylvania; Sheila M. Adams, University of South Florida; Benjamin R. Freedman, Ronen Schweitzer, Louis J. Soslowsky, University of Pennsylvania; David E. Birk, University of South Florida

B58 (abstract 116)
Recovery of Detergent-Soluble Type I Collagen Multimers from Cortical Bone Depends on Thrombospondin-2 Status
Andrea Alford, Anita Reddy, University of Michigan

B59 (abstract 118)
Matrix Composition and Stiffness Combine to Control Tendon Cell Behavior In Vitro
Anusorn Mudla, Nicholas Braun, Purdue University; Alex Waters, Wabash College Sarah Calve, Purdue University

B60 (abstract 120)
Reduced Expression of Collagen XXIV Has an Adverse Impact on Bone Mineralization
Marion K. Gordon, Jae Yoon Jeon, Peihong Zhou, Rita A. Hahn, Rutgers University; Manuel Koch, University of Cologne; Kathy K. H. Svoboda, Texas A&M, Baylor College of Dentistry; Donald R. Gerecke, Rutgers University; Friedrich Laub, Choate, Hall and Stewart LLP; Francesco Ramirez, Icahn School of Medicine at Mount Sinai.

ECM As a Mediator of Host-Pathogen Interactions and Immune Responses

B61 (abstract 122)
High Molecular Weight Hyaluronan Promotes Immune Tolerance to Airway Allergens
John Gebe, Benaroya Research Institute; Payton Marshall, Stanford University; Neil Fanger, Paul Hill, Vertici, Inc; William Altmeier, University of Washington; Paul Bollyky, Stanford University

Proteoglycans and Glycobiology

B62 (abstract 124)
Heparan Sulfate/Fibronectin Axis Regulates Exosome Docking
Anurag Purushothaman, Ralph. D. Sanderson, University of Alabama at Birmingham

B63 (abstract 126)
Pro- and Mature Forms of Biglycan and Decorin in Human Costal Cartilage
Michael Stacey, Anthony Asmar, Old Dominion University; Alice Werner, Robert Kelly, Jr., Children's Hospital of The King's Daughters

B64 (abstract 128)
TRPV4 Activation in Airway Smooth Muscle Cells Alters Hyaluronan Deposition
Alana Majors, Lisa Ruple, Mitch Olman, Mark Aronica, Cleveland Clinic

Tumor Microenvironment

B65 (abstract 130)
ECM Signatures of Human Colorectal Cancers and Derived Metastases Identify Novel Candidate Biomarkers
Alexandra Naba, Karl R. Clauser, Steven A. Carr, Richard O. Hynes, Massachusetts Institute of Technology - Koch Institute; Broad Institute of Massachusetts Institute of Technology and Harvard

B66 (abstract 132)
Targeting Angiogenesis without Increasing the Stromal Cell Response or Invasion Using ABT-898, a Thrombospondin Type 1 Repeat Peptide
Eunnyung Bae, Lerner Research Institute, Cleveland Clinic; Luke Smith, The Ohio State University; Gaelle Muller-Greven, Lerner Research Institute, Cleveland Clinic; Ryosuke Yamada, Kaushal Joshi, Mariko Nakano-Okuno, The Ohio State University; Xi Feng, Dolores Hambardzumyan, Lerner Research Institute, Cleveland Clinic; Ichiro Nakano, The Ohio State University; Candece L Gladson, Lerner Research Institute, Cleveland Clinic

B67 (abstract 134)
The Role of Type III Collagen in the Breast Cancer Microenvironment and Metastasis
Becky Brisson, Laurie Vogel, Elizabeth Mauldin, Susan Volk, University of Pennsylvania School of Veterinary Medicine

B68 (abstract 136)
Fibulin-5 as a Novel Regulator of Integrin-Induced Reactive Oxygen Species in Pancreatic Cancer
Mary Topalovski, Miao Wang, Zachary Moore, Rolf Brekken, University of Texas Southwestern Medical Center

Cellular Regulation by ECM/Growth Factor Regulation

B69 (abstract 138)
Passaged Chondrocyte Phenotype is Regulated by Actin Polymerization through MRTF
Justin Parreno, Lunenfeld-Tanenbaum Research Institute, Toronto

Integrating ECM and Cell Biomechanics

B70 (abstract 140)
Macrophage Response to Bacterial Endotoxin Depends on Mechanotransduction through Transient Receptor Potential Vanniloid 4 Ion Channel
Rachel Scheraga, Susamma Abraham, Ohid Rahaman, Lisa Grove, Brian Southern, Kathryn Niese, Mitchell Olman, Cleveland Clinic

Proteinases and Their Inhibitors

B71 (abstract 142)

Decreased Sox9 mRNA Expression by Cytokine Stimulation Was Ameliorated by Hyaluronan in Chondrosarcoma Cells

Takashi Ohtsuki, Satoshi Hirohata, Yuri Shoji, Keiichi Asano, Aya Hirata, Teruyuki Kawadi, Junko Inagaki, Kanae Kumagishi, Keiichiro Nishida, Toshitaka Oohashi, Aiji Ohtsuka, Graduate School of Medicine, Dentistry and Pharmaceut. Science, Okayama University

B72 (abstract 144)

Using the Zebrafish Model System to Visualize and Quantify the Regulation of MMP Activity and Its Biologically Relevant Consequences

Bryan Crawford, University of New Brunswick

Neural and Ocular ECM: The Next Frontier

B73 (abstract 146)

Distribution of Fibrillin-1, -2, and -3 in Human Eye Development

Dirk Hubmacher, Cleveland Clinic, Lerner Research Institute; Katja Schenke-Layland, Fraunhofer IGB Stuttgart, University Women's Hospital; Dieter Reinhardt P., McGill University; Suneel S. Apte, Cleveland Clinic, Lerner Research Institute

Fibrosis and Chronic Disorders

B74 (abstract 148)

Lung Matrix Signals Differentially Drive Fibrosis through Myosin II Activation

Brian Southern, Mitchell Olman, Cleveland Clinic Lerner Research Institute

Late-Breaking

LB1 (abstract 150)

Decellularized Brain ECM in Silk-Hyaluronan Composite Gels for Neuroconductive Biomaterials

Disha Sood, Min Tang-Schomer, Kelly Sullivan, Whitney Stoppel, Karolina Chwalek, Lauren Black, David Kaplan, Tufts University

LB2 (abstract 152)

The Expression of Procollagen N-Proteinases in Chondrosarcoma Cells: How Does Insulin Affect the Enzyme mRNA Levels?

Sumeyya Akyol, Ismail Comertoglu, Turgut Ozal University Medical School; Ridvan Firat, Golbasi Hospital, Ministry of Health; Ozlem Cakmak, Faculty of Education, Gazi University; Yunus Yukselten, Ankara University Medical Faculty; Gonul Erden, Hacettepe University Medical Faculty; Veli Ugurcu, Private Bilecik Orhangazi Dialysis Center, Bilecik; Kadir Demircan, Turgut Ozal University Medical School

LB3 (abstract 154)

The Investigation of Gene Expression and Protein Profiles of ADAMTS, TIMP and Signal Pathways in OUMS-27 Cell Lines Induced by Insulin

Sumeyya Akyol, Turgut Ozal University Medical Faculty; Ali Akbas, Ilknur Butun, Ismail Benli, Gaziosmanpasa University Medical Faculty; Kadir Demircan, M. Ramazan Yigitoglu, Turgut Ozal University Medical Faculty; Omer Akyol, Hacettepe University Medical Faculty, Turkey; Semsettin Sahin, Huseyin Ozyurt, Gaziosmanpasa University Medical Faculty

LB4 (abstract 156)

Altered Dermal Fibroblast Behavior in a Collagen V Haploinsufficient Model of Classic Ehlers Danlos Syndrome

John DeNigris, Qingmei Yao, David E Birk, University of South Florida Morsani College of Medicine

LB5 (abstract 158)

ECM Control of Cell Physiology and Angiogenesis

Arpita Malik, Peter DeFord, Allan Albig, Boise State University

LB6 (abstract 160)

Resveratrol Affects Integrin Behavior and Notch Signaling

Bryce LaFoya, Allan Albig, Boise State University

LB7 (abstract 162)

Dysregulation of Hyaluronan Homeostasis and Metabolism Is Mediated by Exogenous TGFβ and Its Inhibitors in Aortic Valve Interstitial Cells

Varun Krishnamurthy, Andrew Stout, K. Jane Grande-Allen, Rice Univ.

LB8 (abstract 164)

Hyaluronan Synthesis Provides a Mechanism for Asymmetric Gut Morphogenesis

Aravind Sivakumar, Aparna Mahadevan, Athina Angel, Samah Hoque, Cornell University; Mark Lauer, Vincent Hascall, Cleveland Clinic Lerner Research Institute, Natasza Kurpios, Cornell University

LB9 (abstract 166)

Live Imaging of Collagen Assembly Dynamics in Osteoblasts

Michael Grillo, Erica Johnsrud, University of Missouri; Yongbo Lu, Baylor College of Dentistry; Charlotte Phillips, Sarah Dallas, University of Missouri

LB10 (abstract 168)

Regional Differences in Adipose Mesenchymal Stem Cell Invasion in Ischemic Limbs

Luke Brewster, Emory University/Atlanta VA Medical Center; Ajay Harish, Emory University; Mason Griffin, University of Georgia; Ajai Rajabalan, Harlem Medical Center; Haiyan Li, Emory University; Scott Robinson, University of Michigan, Ian Copland, Emory University

LB11 (abstract 170)

Regenerating Transparency of Cloudy Corneas Caused by Acquired and Congenital Diseases with Umbilical Mesenchymal Stem Cells Transplantation

Mindy Call, University of Cincinnati; Nanki Hura, University of Cincinnati and The Ohio State University; Winston Kao, University of Cincinnati

LB12 (abstract 172)

Shh and Wnt Signaling Pathways Maintain Postnatal Intervertebral Disc by Regulating Its Matrix Production

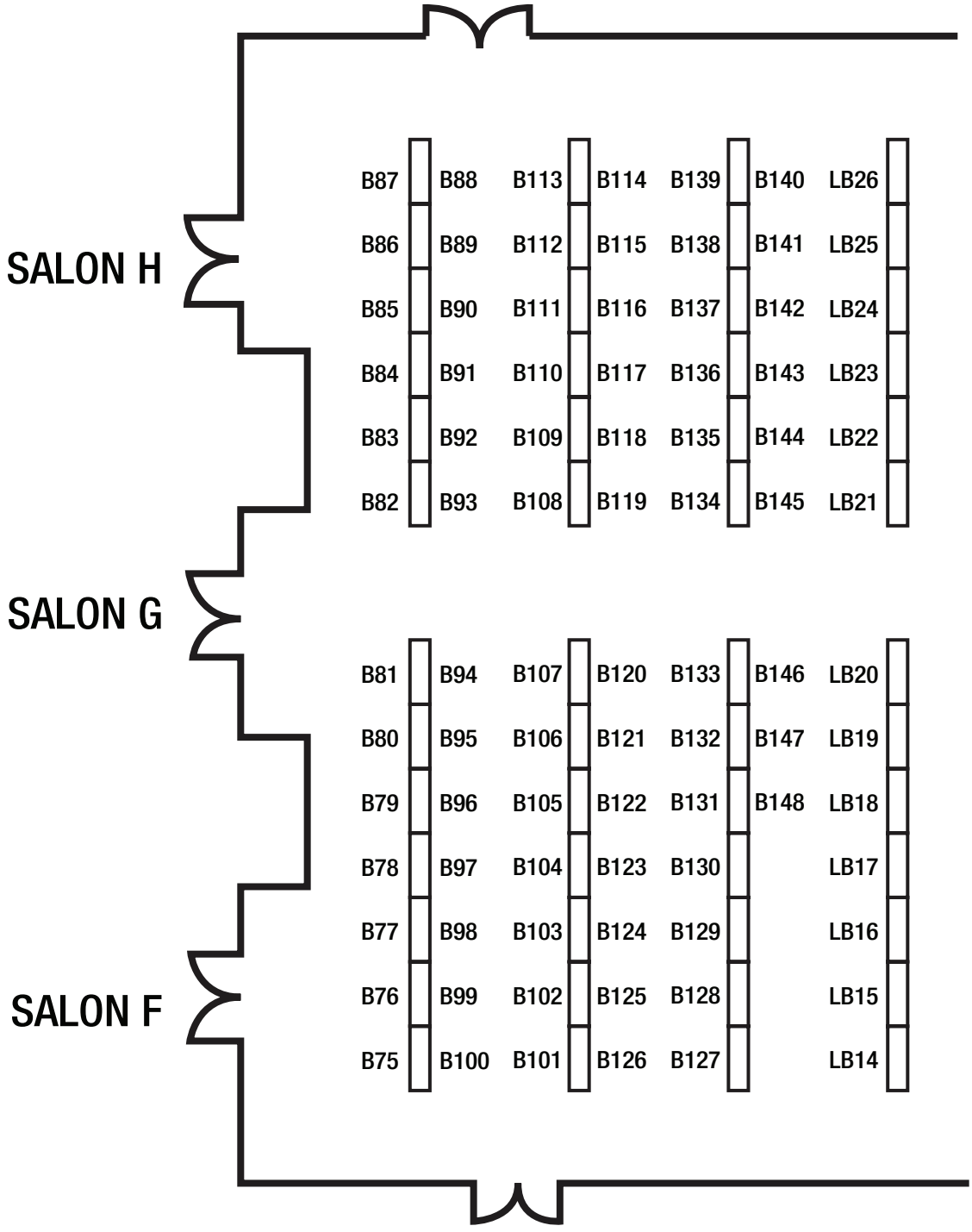
Sarah Loh, Hospital for Special Surgery; Eric Mahoney, Chris Wylie, Cincinnati Children's Hospital; Chitra Dahia, Hospital for Special Surgery

LB13 (abstract 174)

Parathyroid Hormone Related Protein Regulates the Expression of Collagens V and XI

Neda Shefa, Julia Oxford, Boise State University

Poster Session II Floor Plan



ASMB 2014

Poster Session II Tuesday, October 14, 12:00 – 2:00 pm

Selected Talk Posters

Concurrent A: Basement Membrane: Assembly, Function and Disorders

B75 (abstract 3)

Mechanistic Heterogeneity in Multi-System Disorders Caused by COL4A1 and COL4A2 Mutations

Marion Jeanne, Cassandre Labelle-Dumais, Debbie Kuo, Mao Mao, Jeff Jorgensen, Berkeley Kauffman, Douglas Gould; UCSF School of Medicine

B76 (abstract 5)

Lysyl Oxidase Like-2 Catalyzes the Formation of Covalent Crosslinks in the 7S Domain of Basement Membrane Collagen IV

Carolina Añazco, Lorenzo Vega-Montoto, Billy G. Hudson, Roberto Vanacore; Vanderbilt University.

Concurrent B: Skin Biology and Wound Healing

B77 (abstract 7)

Thrombospondin 3 and 4 Have Opposing Functions in Wound Healing

Tobias G. Schips, Jeffery D. Molkentin;Cincinnati Children's Hospital

B78 (abstract 9)

Type VI Collagen: A Novel Regulator of ECM Assembly and Wound Repair

Georgios Theocharidis, John Connelly;Barts and The London School of Medicine and Dentistry, Queen Mary University

Concurrent C: Cardiovascular Biology and Disease

B79 (abstract 11)

Loss of Fibulin-4 Disrupts Collagen Synthesis and Maturation

Christina Papke, University of Texas Southwestern Medical Center; Lea-Jeanne Ringuette, McGill University; Yoshito Yamashiro, Jun Tsunezumi, University of Texas Southwestern Medical Center; Mitsuo Yamauchi, University of North Carolina at Chapel Hill; Elaine Davis, McGill University; Hiromi Yanagisawa, University of Texas Southwestern Medical Center

B80 (abstract 13)

Cardiovascular Manifestations of Aberrant Elastic Fiber Formation in Mice with Mutant Fibulin-4

Carmen Halabi, Washington University School of Medicine; Mon-Li Chu, Thomas Jefferson University; Robert Mecham, Washington University School of Medicine

Concurrent D: Matrix Receptors, Adhesion and Migration

B81 (abstract 15)

Talin Regulates Kidney Development through Integrin Dependent and Independent Mechanisms

Sijo Mathew, Riya Palamuttam, Glenda Mernaugh, Vanderbilt University Medical Center; David Critchley, University of Leicester; Reinhard Fässler, Max Planck Institute of Bioche., Martinsried; Ambra Pozzi, Roy Zent,Vanderbilt University Medical Center

B82 (abstract 17)

Collagen Integrins Recognize Monomolecular Cartilage Collagens, but Not Their Fibrils

Uwe Hansen, Christian Woltersdorf, Melanie Bonk, Rita Dreier, Johannes A. Eble, University Hospital of Muenster; Jyrki Heino, Jarmo Käpylä, University of Turku, Finland; Birgit Leitinger, Imperial College London; Peter Bruckner, University Hospital of Muenster

Concurrent E: ECM Biosynthesis, Assembly and Post-translational Modification

B83 (abstract 19)

SEC23A Is Required for the Secretion of Multiple Collagen Species

Bin Zhang, Cleveland Clinic Lerner Research Institute

B84 (abstract 21)

Super-Resolution Imaging of Fibronectin Extracellular Matrix

Susanna Früh, Ingmar Schoen, ETH Zürich; Jonas Ries, EMBL Heidelberg; Viola Vogel, ETH Zürich

Concurrent F: ECM and the Musculoskeletal System

B85 (abstract 23)

Heterotopic Ossification of Adamts7 and Adamts12 Deficient Ligaments, Menisci and Tendons

Timothy J. Mead, Yaoyao Du, Jason C. Ho, Joseph P. Iannotti, Suneel S. Apte, Cleveland Clinic

B86 (abstract 25)

Structural Analysis of the Adaptation of PDL to Mechanical Loads

Gili Naveh, Bjorn Olsen, Harvard University

Concurrent G: ECM as a Mediator of Host-Pathogen Interactions and Immune Responses

B87 (abstract 27)

A New Pathogenic Role for Syndecan-1 in Streptococcus pneumoniae Corneal Infection

Akiko Ohno-Jinno, Children's Hospital, Harvard Medical School; Susan K. Hollingshead, University of Alabama at Birmingham; Pyong Woo Park, Children's Hospital, Harvard Medical School

B88 (abstract 29)

Treatment with Hyaluronan Fragments Induces the Anti-bacterial Protein Galectin-8 Expression in Intestinal Epithelium That May Protect from Salmonella Infection

Yeojung Kim, Aaron C. Petrey, Sean P. Kessler, David R. Hill, Carol A. de la Motte, Lerner Research Institute, Cleveland Clinic

Concurrent H: Proteoglycans and Glycobiology

B89 (abstract 31)

Endocytosis-Driven Dissociation of β1 Integrin Triggers Syndecan-1 Shedding and Enhances Staphylococcus aureus Virulence

Kazutaka Hayashida, Children's Hospital, Harvard Medical School; Philip D. Stahl, Washington University School of Medicine; Timothy J. Foster, Trinity College Dublin; Gerald B. Pier, Brigham and Women's Hosp; Kenneth M. Yamada, NIDCR/National Institutes of Health; Pyong Woo Park, Children's Hospital, Harvard Medical School

B90 (abstract 33)

Defective Initiation of Glycosaminoglycan Synthesis Due to B3GALT6 Mutations Causes a Pleiotropic Ehlers-Danlos Syndrome-Like Connective Tissue Disorder

Tim Van Damme, Ghent University; Ariana Kariminejad, Kariminejad-Najmabadi Pathoogy & Genetic Center, Tehran; Carolin Gauche, CNRS-University de Lorraine; Delfien Syx, Ghent University; Faten Merhi-Soussi, Sandrine Gulberti, CNRS-University de Lorraine; Sofie Symoens, Suzanne Vanhauwaert, Andy Willaert, Ghent University; Sylvie Fournel-Gigleux, CNRS-University de Lorraine; Anne De Paepe, Fransiska Malfait, Ghent University

Concurrent I: Tumor Microenvironment

B91 (abstract 35)

Stiffness of the Micro-environment Modulates Tumor Dormancy and Chemotherapy Resistance in a Hepatic All-Human Microphysiologic Model of Metastasis

Sarah Wheeler, Amanda Clark, University of Pittsburgh; Jaclyn Shepard Neiman, Massachusetts Institute of Technology; Venkateswaran Pillai, Raman Venkataramanan, University of Pittsburgh Carissa Young, Douglas Lauffenburger, Linda Griffith, Massachusetts Institute of Technology; Donna Stolz, Alan Wells, University of Pittsburgh

B92 (abstract 37)

Collagen Degradation under Normal and Malignant Conditions Is Mediated by M2-Like Macrophages

Daniel Madsen, Kenn Holmbeck, Roberto Weigert, Thomas Bugge, NIDCR/National Institutes of Health

Concurrent J: Cellular Regulation by ECM/Growth Factor Regulation

B93 (abstract 39)

CD47 Inhibits Breast Cancer Stem Cell Growth by Targeting EGF-EGFR Signaling

Sukhbir Kaur, Abdel G. Elkahloun, Satya P. Singh, David D. Roberts, NCI, NHGRI and NIAID/National Institutes of Health

B94 (abstract 41)

Micropatterned Cell-Derived ECM to Stimulate Neurite Alignment

Greg M. Harris, Stephen Bandini, Jeffrey Schwartz, Jean Schwarzbauer, Princeton University

Concurrent K: Integrating ECM and Cell Biomechanics

B95 (abstract 43)

TRPV4 Ion Channel Mediates Mechanosensing, Myofibroblast Differentiation and Pulmonary Fibrosis in Mice

Mitchell Olman, S. Ohid Rahaman, Lisa Grove, Brian Southern, Rachel Scheraga, Cleveland Clinic Lerner Research Institute

B96 (abstract 45)

The Combined Effects of Substrate Stiffness and ECM Protein Composition on Cardiac Myofibroblast Gene Expression

Albert Gao, Lauren Black III, Tufts University

Concurrent L: Proteinases and Their Inhibitors

B97 (abstract 47)

Sonic Hedgehog-Mediated Patterning in Zebrafish Is Dependent Upon the Expression of the Metzincin ADAMTS5

Carolyn Dancevic, Adam Smith, Fiona Fraser, Nicole Stupka, Alister Ward, Yann Gibert, Daniel McCulloch, School of Medicine and Molecular and Medical SRC, Deakin University, Australia

B98 (abstract 49)

Type II N- Procollagen Fibrils in Chondrocyte Cultures: Studies on Assembly and Lateral Growth

Geoffrey Traeger, University of Washington; Uwe Hansen, University of Meunster; Thomas Schmid, Rush University; David Eyre, Russell Fernandes, University of Washington

Concurrent M: Neural and Ocular ECM: The Next Frontier

B99 (abstract 51)

Posttranslationally Abnormal Collagens of P3h2-Null Mice Offer a Pathobiological Understanding of High Myopia Linked to Human LEPREL1 Mutations

David Hudson, Rachel Werther, MaryAnn Weis, University of Washington; Kyu Sang Joeng, Brendan Lee, Baylor College of Medicine; David Eyre, University of Washington

B100 (abstract 53)

Systemic Inflammation Induces Changes in Hyaluronan-Associated Brain ECM, Partial Reversal with Indomethacin

May J Reed, Mamatha Damodarasamy, University of Washington; Christina K Chan, Robert B Vernon, Thomas N Wight, Benaroya Research Institute at Virginia Mason; William A Banks, University of Washington

Concurrent N: Stem Cell Biology and Regenerative Medicine

B101 (abstract 55)
Enhancing Cell Motility and Angiogenesis in Dense Fibrin-Based Extracellular Matrices
Alison Douglas, Thomas Barker, Georgia Institute of Technology

B102 (abstract 57)
Defective Fibrinolytic Potential of Adipose-Derived Stem Cells from Diabetic Donors
Justin Weinbaum, Jeffrey Krawiec, Dominic Pezzone, J. Peter Rubin, David Vorp, University of Pittsburgh

Concurrent O: Fibrosis and Chronic Disorders

B103 (abstract 59)
Regulation of Scleraxis-Mediated Cardiac Fibrotic Gene Expression by Serine Phosphorylation
Rushita Bagchi, Ryan Wang, Michael Czubryt, Institute of Cardiovascular Science and University of Manitoba

B104 (abstract 61)
Stimulatory Effects of Advanced Glycation Endproduct-Modified Fibronectin on Extracellular Matrix Assembly
Alexandra Pastino, Rommel Mathias, Todd Greco, Ileana Cristea, Jean Schwarzbauer, Princeton University

Posters Only

New Developments in ECM Structure and Function

B105 (abstract 63)
Structural Basis of Chain Staggering in Collagen
Sergei Boudko, Hans Peter Bächinger, Shiners Hospitals for Children

B106 (abstract 65)
A Recombinant Collagen-Like Protein Study Differentiates Binding and Activation of the Discoidin Domain Receptors
Bo An, Tufts University; Huifang Xu, Imperial College; Vittorio Abbonante, University of Pavia; Ayumi Yoshizumi, Toho University School of Medicine; David Kaplan, Tufts University; Alessandra Balduini, University of Pavia; Birgit Leitinger, Imperial College; Barbara Brodsky, Tufts University

B107 (abstract 67)
Uncovering Novel Roles for Col5a2 in Embryo and Adult Tissues
Arick Park, University of Wisconsin, Madison; Ferris Pfeiffer, University of Missouri; Charlotte Phillips, University of Missouri; David Birk, University of South Florida; Daniel Greenspan, University of Wisconsin, Madison

B108 (abstract 69)
Elastin in Three Dimensions, A New Paradigm for Elastin Assembly
Tom Broekelmann, Robyn Roth, Yidong Tu, Robert Mecham, Washington University in Saint Louis

Novel Insights on Cell-Matrix Interactions

B109 (abstract 71)
Determining the Role of EDA-Cellular Fibronectin in Liver Angiogenesis
Bridget Sackey, Abby Olsen, Rebecca Wells, University of Pennsylvania

B110 (abstract 73)
Hyaluronan Is Crucial for Autoimmune Diabetes Development and Progression
Nadine Nagy, Gernot Kaber, Pamela Johnson, Daniel Campbell, John Gebe, Benaroya Research Institute, Seattle; Anthony Day, University of Manchester; Thomas Wight, Benaroya Research Institute; Paul Bollyky, Stanford University Medical Center

Morphogenesis

B111 (abstract 75)
Compliance and TGFβ Regulate Extracellular Matrix Assembly in Developing Salivary Gland
Sarah Peters, Deirdre Nelson, Melinda Larsen, University at Albany, SUNY

B112 (abstract 77)
ADAMTS9- Mediated Versican Remodeling Is Crucial for ECM Homeostasis and Vascular Development during Morphogenesis of the Mammalian Feto-Maternal Axis
Sumeda Nandadasa, Courtney M. Nelson, Elliot Philipson, Suneel S. Apte, Cleveland Clinic Lerner Research Institute

Genetic Disorders of ECM, ECM Receptors and the ECM-Cell Continuum

B113 (abstract 79)
Type III Collagen Is Important for Type I Collagen Fibrillogenesis and for Dermal and Cardiovascular Development
Sanne D'hondt, Brecht Guillemyn, Sofie Symoens, Wendy Toussaint, Leen Vanhoutte, Riet De Rycke, Paul Coucke, Patrick Segers, Bart Lambrecht, Anne De Paepe, Sophie Janssens, Mathieu Bertrand, Fransiska Malfait, Ghent University Hosp; Ghent University, Belgium

B114 (abstract 81)
Osteoblast Malfunction in the G610C Model of Osteogenesis Imperfecta
Lynn Mirigian, Elena Makareeva, Edward Mertz, Sergey Leikin, NICHD/National Institutes of Health

Translating the Basics to Patient Care

B115 (abstract 83)
Multi-system Phenotyping in Cutis Laxa
Zsolt Urban, University of Pittsburgh Graduate School of Public Health; Beth Kozel, Washington University School of Medicine; Chi-Ting Su, University of Pittsburgh Graduate School of Public Health; Frank Sciurba, University of Pittsburgh School of Medicine; Seth Weinberg, University of Pittsburgh School of Dental Medicine; Suneeta Madan-Khetarpal, University of Pittsburgh School of Medicine; Christa Lorenchick, Elizabeth Lawrence, Kara Levine, University of Pittsburgh Graduate School of Public Health

B116 (abstract 85)
Inhibition of Hyperglycemia-Induced Angiogenesis and Cancer Growth by Systemic Injections of miR-467 Antagonist
Irene Krukovets, Olga Stenina-Adognravi, Cleveland Clinic

Skin Biology and Wound Healing

B117 (abstract 87)
An Acute Oral Wound Rat Model Validated That the Mesenchymal Stem Cell Protein, TSG-6, Significantly Decreased Inflammatory Markers
Kathy K. H. Svoboda, Stacy R. Beltran, Prashan Shanthakumar, Jordan Payne, Ryan Schmidgall, Texas A&M University Baylor College of Dentistry; Darwin Prockop, Texas A&M College of Medicine

B118 (abstract 89)
Hyaluronan Synthase 2 Protects Mouse Skin Fibroblasts against Apoptosis
Yan Wang, Mark Lauer, Judith Mack, Edward Maytin, Cleveland Clinic Lerner Research Institute

Cardiovascular Biology and Disease

B119 (abstract 91)
Pro-angiogenic Remodeling of Extracellular Matrix by TGF-Beta
Santoshi Muppala, Ella Frolova, Irene Krukovets, Edward F Plow, Olga Stenina-Adognravi, Lerner Research Institute,Cleveland Clinic Foundation

B120 (abstract 93)
The Role of Fibronectin in Postnatal Aorta and Lungs
Heena Kumra, Laetitia Sabatier, Marian Chen, Amani Hassan, McGill University; Takao Sakai, Lerner Research Institute; Pierre Chambon, Institut de Genetique et de Biologie Moleculaire et Cellulaire; Dieter Reinhardt, McGill University

B122 (abstract 97)
3D Diabetic Matrix Mediates Fibroblast Phenotypic and Functional Differentiation through AGE/RAGE and PKC-Zeta Signaling
Christopher Cerovsky, Zehra Syed, Santanu Kundu, James Stewart, Mississippi State University

B123 (abstract 99)
Engineered Glycosaminoglycan Toolkit for Heart Valve Applications
Fergus Wong, Michelle Ho, Momona Yamagami, Junghae Suh, K. Jane Grande-Allen, Rice University

Matrix Receptors, Adhesion and Migration

B124 (abstract 101)
Integrin-Integrin Crosstalk Promotes and/or Suppresses Fibroblasts Adhesion Depending on the Integrin Subtypes
Kentaro Hozumi, Chikara Fujimori, Fumihiko Katagiri, Yamato Kikkawa, Motoyoshi Nomizu, Tokyo University of Pharmacy and Life Sciences

B125 (abstract 103)
An Engineered Chondrosarcoma Cell Line Enabling Defined Genome-Wide Mutations: Validation Study of Aggrecan Ablation
Maozhou Yang, Liang Zhang, Henry Ford Hospital; Jeff Stevens, University of Iowa; Gary Gibson, Henry Ford Hospital

B126 (abstract 105)
Complex Mechanisms in Collagen Binding and Endocytosis by Members of the Mannose Receptor Family
Henrik Jessen Jörgensen, Kristina Johansson, Rigshospitalet/ Biotech Research and Innovation Center, Copenhagen; Daniel Madsen, NIDCR/National Institutes of Health; Maria Melander, Christoffer Nielsen, Rigshospitalet/Biotech Research and Innovation Center, Copenhagen; Thomas Bugge, NIDCR/National Institutes of Health;Niels Behrendt, Lars Engelholm, Rigshospitalet/Biotech Research and Innovation Center, Copenhagen

ECM Biosynthesis, Assembly and Post-translational Modification

B127 (abstract 107)
The Effect of Varying Hydroxyproline Levels on Bacterial Collagen Structure and Incorporated Biological Activities
Sezin Yigit, Bo An, David Kaplan, Tufts University; Theirry Hennet, University of Zurich; Barbara Brodsky, Tufts University

B128 (abstract 109)
A Substrate Preference for the Rough Endoplasmic Reticulum Resident Protein FKBP22 during Collagen Biosynthesis
Yoshihiro Ishikawa, Hans Peter Bächinger, Shriners Hospital for Children Portland

ECM and the Musculoskeletal System

B129 (abstract 111)
Heparin Biomaterials for Modulation of Endochondral Differentiation
Torri Rinker, Johnna Temenoff, Georgia Institute of Technology, Emory University

B130 (abstract 113)
Autophagy Promotes Articular Cartilage Vesicle Release from Primary Chondrocytes
Claudia Gohr, Elizabeth Mitton-Fitzgerald, Ann Rosenthal, Medical College of Wisconsin

B131 (abstract 115)
Generation of a Chondrocyte Cell Line with Targeted Deletion of miR-140 Using the CRISPR/Cas9 System
Maozhou Yang, Liang Zhang, Gary Gibson, Henry Ford Hospital

B132 (abstract 117)
Statins Protect Joint Cartilage Destruction in Osteoarthritis Patients: A Retrospective Study
Carolyn Dancevic, Tamsyn Crowley, Deakin University; Gemma Strickland, Nigel Wood, Hedley Griffiths, Barwon Rheumatology Service; Daniel McCulloch, Deakin University

B133 (abstract 119)
Optical Clearing of ECM-Rich Osteochondral Tissues
Corey Neu, Tyler Novak, Kateri Fites, Peter Marshall, Sarah Calve, Purdue University

B134 (abstract 121)
CreCMV Adamtsl2-/-Mouse Model Offers Novel Insights into the Short Stature Associated with Geleophysic Dysplasia
C. Mahaut, K. Piquand, V. Cormier-Daire, C. Le Goff, University Paris Descartes-Sorbonne

ECM as a Mediator of Host-Pathogen Interactions and Immune Responses

B135 (abstract 123)

Hyaluronan Synthase 3 Promotes Inflammatory Bowel Disease

Maria Grandoch, Nina Heinisch, Anette von Glinski, Jens W. Fischer, Heinrich Heine University Düsseldorf

Proteoglycans and Glycobiology

B136 (abstract 125)

O-GlcNAcylation Induces Hyaluronan Synthase 2 Transcription Modulating Promoter Chromatin Structure via Long Non-coding RNA

Davide Vigetti, Manuela Viola, Evgenia Karousou, Maria Luisa D'Angelo, Giancarlo De Luca, Alberto Passi, University Insubria Varese, Italy

B137 (abstract 127)

Down-Regulation of Fibromodulin Is a Critical Regulatory Step in Corneal Stromal Matrix Assembly

Shoujun Chen, University of South Florida, Morsani College of Medicine; Ake Oldberg, Lund University, Sweden; Shukti Chakravarti, Johns Hopkins University School of Medicine; David Birk, University of South Florida, Morsani College of Medicine

B138 (abstract 129)

Perlecan Competes with Serglycin for the Binding of PF4 to Inhibit the Activation of Platelets and Control the Inflammatory Response

Megan Lord, Bill Cheng, Marie Labeye, The University of New South Wales; Guy Lyons, The University of Sydney; Simon McCarthy, Hemcon Medical Technologies; John Whitelock, The University of New South Wales

Tumor Microenvironment

B139 (abstract 131)

ADAMTS Cleaved Versican in Tumor Angiogenic Area

Keiichi Asano, Junko Inagaki, Okayama University; Matthias Hofmann, Goethe University; Teruyuki Kawadi, Aya Hirata, Yuri Shoji, Takashi Ohtsuki, Yosifumi Ninomiya, Satoshi Hirohata, Okayama University

B140 (abstract 133)

Elucidating the Contribution of ADAMTS1 for Tumor Progression and Metastasis in a Mouse Model

Juan Carlos Rodríguez-Manzaneque, Rubén Fernández-Rodríguez, Francisco Javier Rodríguez-Baena, María del Carmen Plaza-Calonge, GENYO, Pfizer/University de Granada

B141 (abstract 135)

Chain Regulates Breast Tumor Growth via Glypican-1-Mediated Cell Cycle Regulation

Guorui Huang, Gaoxiang Ge, John F. Kernien, Daniel S. Greenspan, University of Wisconsin-Madison

B142 (abstract 137)

SPARC as a Regulator of Collagen Signaling in Pancreatic Cancer

Kristina Y. Aguilera, Courtney D. Goldstein, Lee B. Rivera, University of Texas Southwestern Medical Center; Amy D. Bradshaw, Gazes Cardiac Research Institute; Ke Ding, Guangzhou Institute of Biomedicine and Health, China; Rolf A. Brekken, University of Texas Southwestern Medical Center

Cellular Regulation by ECM/Growth Factor Regulation

B143 (abstract 139)

α3(V) Collagen Chains Modulate Exercise Endurance and Energy Homeostasis via Regulation of Glucagon Secretion

Guorui Huang, Daniel Greenspan,University of Wisconsin-Madison

Integrating ECM and Cell Biomechanics

B144 (abstract 141)

Regulation of Macro and Micro Mechanics of Collagen Type 1 Gels by DDRs

David Yeung, Tyler Heisler-Taylor, David Gutschick, Peter Anderson, Heather Powell, Greg Lafyatis, Gunjan Agarwal, The Ohio State University

Proteinases and Their Inhibitors

B145 (abstract 143)

Understanding the Mechanisms of Action of the Mammalian Tolloids

Chris Bayley, Hilda Diana Ruiz-Nivia, Richard F Collins, Clair Baldock, University of Manchester

B146 (abstract 145)

N-Terminomics Analysis of the Substrate Repertoire of the Aminoprocollagen N-Proteinases: ADAMTS-2, -3 and -14

Mourad Bekhouche, Laura Dupont, University of Liège, Belgium; Catherine Moali, IBCP, Lyon, France; Leduc Cédric, Lauriane Janssen, Alain Colige, University of Liège, Belgium

Stem Cell Biology and Regenerative Medicine

B147 (abstract 147)

Glioma Stem Cell Contact with Endothelial Cells Mediated through L1CAM and Integrin αvβ3 Induces Bidirectional Signaling

Monica Elizabeth Burgett, Justin Lathia, Cleveland Clinic Lerner Research Institute; Patrick Roth, University Hospital Zurich; Ping Huang, Cleveland Clinic Lerner Research Institute; Amit Vasanji, Image IQ Inc., Cleveland; Meizhang Li, Shideng Bao, Amy Nowacki, Jeremy Rich, Cleveland Clinic Lerner Research Institute; Michael Weller, University Hospital Zurich; Candece Gladson, Cleveland Clinic Lerner Research Institute

Fibrosis and Chronic Disorders

B148 (abstract 149)

Cthrc1 Reduces Collagen Formation Associated with Pulmonary Fibrosis and Limits the Decline in Lung Function

Andrew Binks, University of South Carolina; Megyn Beyer, University of New England; Ryan Miller, Renee LeClair, University of South Carolina

Late-Breaking

LB14 (abstract 151)

Unraveling the Function of ADAMTS9, TIMP-1, and TIMP-2 in OUMS-27 Chondrosarcoma Cells Treated by Insulin: A Preliminary Study

Veli Ugurcu, Private Bilecik Orhangazi Dialysis Center, Bilecik, Turkey; Sumeyya Akyol, Turgut Ozal University Medical School, Ankara, Turkey; Aynur Altuntas, Ankara Regional Office of Council of Forensic Sciences, Ankara, Turkey; Ozlem Cakmak, Gazi University, Ankara, Turkey; Gonul Erden, Hacettepe University Medical Faculty, Ankara, Turkey; Yudum Yaral, Turgut Ozal University, Ankara, Turkey; S. Fatih Kursunlu, Adnan Menderes University, Aydın, Turkey; Kadir Demircan, Turgut Ozal University Medical School, Ankara, Turkey

LB15 (abstract 153)

Evidence for the Ruling of Aggrecanases by Insulin and Glucose in Alzheimer Disease: A Cell Culture Study

Sumeyya Akyol, Turgut Özal University, Ankara, Turkey; Veli Ugurcu, Dumlupinar University Medical Faculty, Kutahya, Turkey; Ozlem Cakmak, Gazi University, Ankara, Turkey; Aynur Altuntas, Ankara Regional Office of Council of Forensic Medicine, Ankara, Turkey; Yunus Yukselten, Ankara University Medical Faculty, Ankara, Turkey; Omer Akyol, Hacettepe University Medical School, Ankara, Turkey; Asuman Sunguroglu, Ankara University Medical Faculty, Ankara, Turkey; Kadir Demircan, Turgut Özal University, Ankara, Turkey

LB16 (abstract 155)

Endothelial Cell Migration in Three-Dimensional Hydrogels Focusing on Angiogenesis

Kerstin Pflieger, Stefan Zahler, Ludwig Maximilians University Munich

LB17 (abstract 157)

Measuring Protease Activity in 3D Microenvironments

Jennifer Leight, The Ohio State University; Emi Tokuda, Kristi Anseth, University of Colorado Boulder; HHMI, Boulder

LB18 (abstract 159)

MMP-10 Regulates the Collagenolytic Activity of Alternatively Activated Resident Macrophages

Maryam G. Rohani, Cedars-Sinai Medical Center; Ryan S. McMaham, Maria V. Razumova, Angie L. Hertz, Maryelise Cieslewicz, Suzie H. Pun, Michael Regnier, University of Washington; Ying Wang, Cedars-Sinai Medical Center; Timothy P. Birkland, William C. Parks, University of Washington

LB19 (abstract 161)

Co-localization of Microfibril-Associated Glycoprotein 2 (MAGP2) to Extracellular Fibrillin-2 Microfibrils Is Promoted by Proprotein Convertase Cleavage

Alison Miyamoto, Lauren Donovan, Edgar Perez, Breanna Connett, Richard Cervantes, Khang Lai, Gordon Withers, Gregory Hogrebe, California State University Fullerton

LB20 (abstract 163)

The Transcriptional Co-regulator Jab1 Is Essential for Skeletogenesis

Lindsay Bashur, Zhijun Chen, Shunichi Murakami, Guang Zhou, Case Western Reserve University

LB21 (abstract 165)

GFP-Collagen Transgenic Mice as a Novel Model for Monitoring Collagen Replacement in a Transplant Model of OI Treatment

Molly Hulbert, Hong Zhao, University of Missouri; Donna Pacicca, University of Missouri and Children's Mercy Hospital; Richard Campos, Anita Xie, University of Missouri; Charlotte Phillips, University of Missouri,-Columbia; Sarah Dallas, University of Missouri

LB22 (abstract 167)

Disruptions in Helix Structure and Folding Caused by Leu and Cys Substitutions for Arg780 in the α1(I) Chain of Type I Collagen from Patients with Osteogenesis Imperfecta

Elena Makareeva, NICHD, NIH; Guoli Sun, University of Washington; Juan C. Vera, Nydea Aviles, NICHD, NIH; Kathleen Yang, Diana Chen, University of Washington; Teri Klein, Stanford University; Sergey Leikin, NICHD, NIH; Peter H. Byers, University of Washington

LB23 (abstract 169)

Chondroitin Sulfate and N-Unsubstituted Glucosamine-Enriched Heparan Sulfate in Neurite Outgrowth-Permissive Extracellular Matrix of Rat Cortical Astrocyte Cultures

Thomas Hering, Case Western Reserve University and University of Kentucky, Justin Beller, Christopher Calulot, Adrian Centers, Diane Snow, University of Kentucky

LB24 (abstract 171)

Roles of Lumikine on the Healing of Corneal Epithelium Debridement in Vivo

Chia-Yang Liu, Jianhua Zhang, Vivien Coulson-Thomas, Mindy Call, Yong Yuan, Winston Kao, University of Cincinnati

LB25 (abstract 173)

Liver Injury and Pro-fibrotic Markers, but Not Frank Fibrosis, Are Enhanced in Has3-/- Mice after Carbon Tetrachloride Exposure: Potential Role MMP13

Jennifer McCracken, Krutika Deshpande, Michele Pritchard, University of Kansas Medical Center

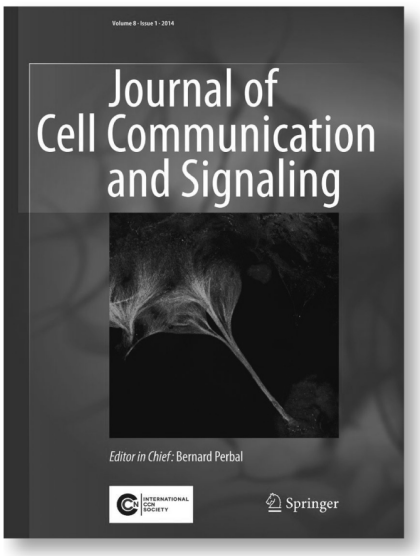
LB26 (abstract 175)

An Aggrecan 32mer Fragment Provides a Link between Joint Tissue Damage and Pain through Activation of Sensory Neurons

Rachel E. Miller, Rush University Medical Center; Richard J. Miller, Abdelhak Belmadani, Northwestern University; Suzanne B. Golub, Amanda J. Fosang, Anne-Marie Malfait,University of Melbourne and Murdoch Childrens Research Institute

Springer

springer.com



Journal of Cell Communication and Signaling

Editor-in-Chief: B. Perbal

- Addresses all aspects of cell-cell, cell-matrix communication, and intracellular signaling
- Covers receptors, ligands, and other biomolecules participating in cellular signaling pathways

The Journal of Cell Communication and Signaling provides a forum for **fundamental and translational research**. In particular, it publishes papers discussing **intercellular and intracellular signaling pathways** that are particularly important to understand how cells interact with each other and with the surrounding environment, and how cellular behavior contributes to pathological states. JCCS encourages the submission of research manuscripts, timely reviews and short commentaries discussing recent publications, key developments and controversies.

Research manuscripts can be published under two different sections:

In the **Pathology and Translational Research Section** (Section Editor Andrew Leask) , manuscripts report original research dealing with celllular aspects of normal and pathological signaling and communication, with a particular interest in translational research.

In the **Molecular Signaling Section** (Section Editor Satoshi Kubota) manuscripts report original signaling research performed at molecular levels with a particular interest in the functions of intracellular and membrane components involved in cell signaling.

The **Review Section** (Section Editor David Brigstock) is a venue for publication of review articles that summarize recent advances and discoveries, identify gaps and debates, and outline future directions in all aspects of cell signaling and communication. The Journal is particularly interested in focused and authoratative mini-reviews that will allow the reader to gain a rapid understanding of the material presented. Mini-reviews should not exceed 5000 words, excluding the abstract and bibliography. No more than 80 references should be cited. Inclusion of figures to help summarize the major concepts is encouraged. Authors are requested to contact the Section Editor with a proposed outline of their article before submission so that its suitability for publication in the journal can be assessed.

An original research manuscript reporting findings of wide interest to the scientific community may be submitted as a **Letter to the Editor**.

On the homepage of **Journal of Cell Communication and Signaling** at **springer.com** you can

- Read selected articles for free
- Sign up for our Table of Contents Alerts
- Get to know the complete Editorial Board
- Find submission information

4 issues/year

Electronic access

- springerlink.com

Subscription information

- springer.com/librarians

CELEBRATING THE LIFE & MEMORY OF OUR MATRIX BIOLOGY COLLEAGUES

Paul Bornstein
1934-2013
University of Washington
ASMB President 2003-2004

Jerome Gross
1917-2013
Harvard University and
Massachusetts General
Hospital

Dick Heinegard
1942-2013
University of Lund, Lund,
Sweden

Nicholas A. Kefalides
1927-2013
University of
Pennsylvania

Scott Argraves
1956-2014
Medical University
of South Carolina
ASMB Council Member

Yoshifumi Ninomiya
1949-2014
Okayama University
Medical School

AGENDA AT A GLANCE

Sunday, October 12th

1:00-3:00 pm
Guest Symposium I: Engineering Cell-Matrix Interactions for Musculoskeletal Tissue Engineering
Presented by: TERMIS
Location: Salon D

SIG 1: The New Biology of the Small Leucine Rich Proteoglycans
Sponsored by: LifeCell
Location: Salon E

SIG 2: Biological Mechanisms and Impact of Matrix Cross-linking on Cellular Systems and Tissue Function Discussion
Sponsored by: Faculty of Dentistry, McGill University and Zedira
Location: Salon A-C

3:00-3:30 pm
Coffee Break
Location: North and East Foyers

3:30-5:30 pm
Guest Symposium II: Pathobiology of Hyaluronan
Presented by: ISHAS
Location: Salon A-C

SIG 3: ECM Turnover and Tissue Remodeling During Embryogenesis
Location: Salon D

SIG 4: The Physics and Chemistry of Fibronectin
Location: Salon E

6:00-7:00 pm
Opening Reception
Location: North and East Foyers

7:00-8:00 pm
President's Welcome and Keynote Lecture
Location: Salon D-E

Monday, October 13th

7:30-8:30 am
Breakfast
Location: North and East Foyers

7:30-8:30 am
Career Mentoring Breakfast
(RSVP Required, space limited)
Location: Erie and Superior

8:30-10:00 am
Plenary I: New Developments in ECM Structure and Function
Location: Salon D-E

10:00-10:30 am
Coffee Break
Location: North and East Foyers

10:30-12:00 pm
Plenary II: Novel Insights on Cell-Matrix Interactions
Location: Salon D-E

12:00-12:30 pm
ASMB Business Meeting
Location: Salon D-E

12:30-2:30 pm
Poster Session I Lunch
Location: Salon F-H

2:30-4:00 pm
Concurrent Sessions A-C

Concurrent A: Basement Membrane: Assembly, Function and Disorders
Location: Salon A-C

Concurrent B: Skin Biology and Wound Healing
Location: Salon D

Concurrent C: Cardiovascular Biology and Disease
Location: Salon E

4:00-4:30 pm
Coffee Break
Location: North and East Foyers

4:30-6:00 pm
Concurrent Sessions D-F

Concurrent D: Matrix Receptors, Adhesion and Migration
Location: Salon A-C

Concurrent E: ECM Biosynthesis, Assembly and Post-translational Modification
Location: Salon D

Concurrent F: ECM and the Musculoskeletal System
Location: Salon E

Tuesday, October 14th

7:30-8:30 am
Breakfast
Location: North and East Foyers

7:30-8:30 am
Women Mentoring Women Breakfast
(RSVP Required, space limited)
Location: Erie and Superior

8:30-10:00 am
Plenary III: Morphogenesis
Location: Salon D-E

10:00-10:30 am
Coffee Break
Location: North and East Foyers

10:30-12:00 pm
Plenary IV: Genetic Disorders of ECM, ECM Receptors and the ECM-cell Continuum
Location: Salon D-E

12:00-2:00 pm
Poster Session II and Lunch
Location: Salon F-H

2:00-3:30 pm
Concurrent Sessions G-I

Concurrent G: ECM As a Mediator of Host-Pathogen Interactions and Immune Responses
Location: Salon A-C

Concurrent H: Proteoglycans and Glycobiology
Location: Salon D

Concurrent I: Tumor Microenvironment
Location: Salon E

3:30-4:00 pm
Coffee Break
Location: North and East Foyers

4:00-5:30 pm
Concurrent Sessions J-L

Concurrent J: Cellular Regulation by ECM/Growth Factor Regulation
Location: Salon A-C

Concurrent K: Integrating ECM and Cell Biomechanics
Location: Salon D

Concurrent L: Proteinases and Their Inhibitors
Location: Salon E

7:00-10:00 pm
Banquet – Rock N Roll Hall of Fame
(Advanced ticket purchase required. Banquet includes admission to the museum exclusively for ASMB.)

Wednesday, October 15th

9:30-11:00 am
Plenary V: Translating the Basics to Patient Care
Location: Salon D-E

11:00-11:30 am
Coffee Break
Location: North and East Foyers

11:30am -1:00 pm
Concurrent Sessions M-O

Concurrent M: Neural and Ocular ECM: The Next Frontier
Location: Salon A-C

Concurrent N: Stem Cell Biology and Regenerative Medicine
Location: Salon D

Concurrent O: Fibrosis and Chronic Disorders
Location: Salon E