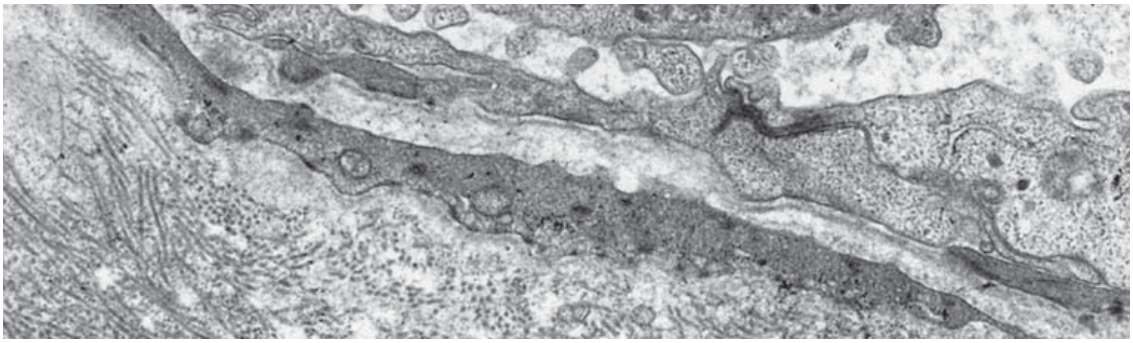


ISMB NEWSLETTER

January 2009

Dear Fellow Matrix Biologist,

I hope you had a great holiday season! I am honored to be your president for the next two years and feel that with focus and hard work we could see a significant increase in our membership base as well as support of other organizations. First, I would like to acknowledge Kathy Cheah in recognition for her contribution and dedication as the Immediate Past-President of the ISMB. Kathy brought to the table her experience as researcher and articulate writer, and represented the ISMB with profound professionalism. I will bring to the ISMB my past experience as President of the ASMB. I would like to touch on some important issues facing the society and set up some important goals for the future two years.

1. Our main function, as an international society, is to be inclusive, vibrant and interactive. One of the major goals is to establish a dialogue with the membership at large and improve ISMB visibility by networking and fostering matrix biology research around the world.

2. The problems that many organizations are currently facing include membership recruiting. As an international organization, we must be active in recruiting members. This will be a major goal of mine. This can be in part accomplished by better communication. I believe that this newsletter is the major conduit of information between the ISMB officers and the members. As you might have noticed, we have improved the design of the newsletter and plan to deliver ISMB newsletters on a more regular basis. We need your contribution and, please, send us pictures of ISMB members in action, abstracts of accepted papers or your own views by e mail to me (iozzo@mail.jci.tju.edu), to Jamie Fitzgerald (fitzgerj@ohsu.edu) or to Dieter Reinhardt (dieter.reinhardt@mcgill.ca).

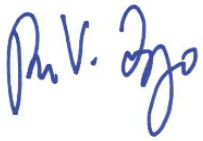
3. We need to expand our support and participation to other meetings focused on matrix biology. In the past year we have been actively present and have sponsored scientific sessions and awards in several meetings including the FECTS, ASMB, and the Pan Pacific Society (see below). We are discussing this possibility at the council level, but I encourage you to communicate directly with me for additional suggestions. A dialogue is always preferred.

4. We need to expand our relationship with Elsevier, the publisher of Matrix Biology. As you know, ISMB is affiliated with Matrix Biology, and the publisher provides us with free pages for publicity and other news. This is an important "bonus" for you as members. Please take advantage of the free advertisement for meeting, symposia, workshops and job listings.

5. Given the unfortunate termination of the Basement Membrane Gordon, there is now a sort of vacuum in this important field. We are discussing the possibility to sponsor future sessions in which basement membrane biology is the main topic of discussion. Again, I would like to have your opinion on this subject, since we need to move quite quickly insofar as many international meetings require advance planning.

The ASMB meeting was held in San Diego at the Manchester Grand Hyatt (at the end of the Newsletter are collages of pictures I made of various matrix biologists in action). The atmosphere was great and we were treated like royalty. There were many colleagues represented as well as students. I was pleased to see that the ISMB participation was recognized at the ASMB meeting. We sponsored a plenary session where Reinhard Fässler delivered the major talk as a recipient of the ISMB Distinguished Investigator Award. In addition (please see below), ISMB gave three travel awards for best abstract presentation and several travel awards for best poster presentation. We congratulate these remarkable researchers for their contribution to the ISMB-sponsored activities. I believe that 2009 will be a year of growth for ISMB and I am anxious to be part of this growth.

Warmest regards to all,



Renato Iozzo, President ISMB

From the ISMB Secretary

As you know, ISMB is governed by a Council and, within that body, an executive committee. According to our constitution, Council consists of up to 18 (currently 13) members who represent ISMB members from all geographical regions,i.e., Asia/Pacific region, Europe, and North America. The executive committee consists of a President, a Vice-president, and a Secretary / Treasurer. Kathy Cheah, Hong Kong, has been our president for the past 2 years and her successor is Renato Iozzo, Philadelphia, our previous Vice-President. This leaves open the position of the Vice-President who will succeed Renato in 2 years. The nomination of candidates for this position rests with Council who proposes David J.S. Hulmes, Lyon. You will receive an e-mail, soon, instructing you on how to vote in an electronic ballot by Doodle.

First, let me say a few words about the outgoing president. Kathy Cheah has strongly invigorated ISMB during her presidency. Many new programmes, such as the rather prestigious Rupert Timpl Award, were created upon her suggestions. A "Distinguished Matrix Biologists Award" has been created and Reinhard Fässler was the first laureate. ISMB also has supported travel to international conferences of young scientists to help the scientific exchange between the worlds regions and networking between matrix biologists. ISMB now contributes to meetings organised by regional societies in Asia and the Pacific region, in Europe, as well as in the USA. These activities have made ISMB much more visible. As the secretary / treasurer, I can say that it has been easier to make ISMB membership more attractive to young and established scientists. I am confident that many more newcomers, as well as some of the most important exponents of the field, will soon join the ranks. These are great prospects in times of financial worries.

Let me also say a few words about David Hulmes, the Vice-Presidential candidate nominated by Council. Most of us know David as an accomplished matrix biologist who has contributed seminal papers with a wide scope on the structure of the extracellular matrix and on the biosynthesis and processing of collagens. Lately, he has also become productive in the field of tissue engineering, in particular with investigations of the importance of the structure of extracellular matrices. David is of British origin and has previously lived and worked in several locations within the United Kingdom, France, and the USA. He currently is a research director at the Institut de Biologie et Chimie des Protéines in Lyon, France. He considers the following five publications as his most important scientific contributions: Analysis of the primary structure of collagen for the origins of molecular packing Hulmes, D.J.S., Miller, A., Parry, D.A.D., Piez, K.A. and Woodhead-Galloway, J. *J. Mol. Biol.* (1973) 79, 137-148, Quasi-hexagonal molecular packing in collagen fibrils Hulmes, D.J.S. and Miller, A. *Nature* (1979) 282, 878-880. Radial packing, order and disorder in collagen fibrils Hulmes, D.J.S., Wess, T.J., Prockop, D.J. and Fratzl P. *Biophys. J.* (1995) 68, 1661-1670. Substrate specific modulation of a multisubstrate proteinase Moali, C., Font, F., Ruggiero, F., Eichenberger, D., Rousselle, P., François, V.,Oldberg. A., Bruckner-Tuderman, L. and Hulmes, D.J.S. *J. Biol. Chem* (2005) 280, 24188-24194. Orthogonal scaffold of magnetically aligned collagen lamellae for corneal stroma reconstruction. Torbet, J., Malbouyres, M., Builles, N., Justin, V., Roulet, M., Damour, O., Oldberg, A., Ruggiero, F., and Hulmes, D.J.S. *Biomaterials* (2007) 28, 4268-4276.

We also will have to replace the three most senior Council members whom we all thank for their service on behalf of ISMB. These members are Monique Aumailley (Cologne), Leena Bruckner Tuderman (Freiburg) and Klaus von der Mark (Erlangen) - incidentally all from Germany. In this case, Council solicits nominations from the membership by February 15. Thereafter, a ballot by Doodle will be organised similar to the Vice-Presidential election after the agreement to serve has been obtained from all eligible candidates. Please, show your support of ISMB by making suggestions of suitable individuals. An emphasis on the region of Europe would be welcome considering that all outgoing members are European. However, this should not exclude good candidates from elsewhere.

Peter Bruckner, ISMB Secretary and Treasurer (for the ISMB Council)

ISMB Award winners

The ISMB was delighted to be associated with two major international Matrix Biology meetings in 2008, the Federation of European Connective Tissues Societies (FECTS) and American Society for Matrix Biology (ASMB). At each of the meetings a major prize was awarded; the Rupert Timpl Award (FECTS) and the Distinguished Investigator Award (ASMB). In addition, several travel prizes to junior researchers were awarded to help to offset the cost of attending these international meetings.

Awarded at the FECTS meeting held in Marseille, France, July 2008

Rupert Timpl Award winner 2008: Adam Engler (Univ. Calif., San Diego, USA). Plenary Talk entitled “Matrix elasticity directs stem cell lineage specification”

Travel awards winners: Richard Wilson, Murdoch Childrens Research Institute, Australia, "Proteomic profiling of cartilage degradation in vitro", Masayuki Shimoda, Keio University, Tokyo, Japan "Induction of ADAM28 in endothelial cells at inflammatory sites enhances leukocyte adhesion to endothelial cells", Christine Chuang, The University of New South Wales, Australia "The role of heparin sulfate on chondrocytes perlecan – to proliferate or not?"

Awarded at the ASMB meeting held in San Diego, USA, December 2008

Distinguished Investigator Award winner 2008: Reinhard Fassler (Max Planck Institute of Biochemistry, Martinsried, Germany). Plenary talk entitled "Genetic analysis of integrin signaling in mice".

ISMB Travel Award winners: Silvia Rossi (University of Parma, Italy) presented a talk entitled "The proteoglycan metastatic signature of a cancer cell" Jason Zoeller (Thomas Jefferson University, Philadelphia, PA) spoke about "A central role for decorin during vertebrate convergent extension" and Janice Vranka (Shriners Hospital for Children, Portland, OR) talked about "Prolyl 3-hydroxylase 1 null mice have abnormal bones and tendons".

ISMB Poster prizes winners: Daniel McCulloch (Cleveland Clinic, Cleveland, OH) for “ADAMTS proteases regulate BMP-mediated cell death”, Li Qiaoli (Jefferson Medical College, Philadelphia, PA) for “GGCX and ABCC6 gene mutations in a family with PXE-like phenotype” and Seung-Yoon Park (Dongguk University, South Korea) for “Cell corpse removal by stabilin-2, a phosphatidylserine receptor”.

Meeting Announcements

Gordon Research Conference Fibronectin, Integrins & Related Molecules
Ventura, California, USA
February 1-6, 2009
Chair: Fiona M. Watt
Vice Chair: David A. Calderwood
http://www.grc.org/programs.aspx?year=2009&program=fibronec

55th Annual Meeting of the Orthopaedic Research Society
Las Vegas, Nevada, USA
February 22-25, 2009
http://www.ors.org/web/meetings/55thAnnualMeeting/AnnualMeeting.asp

Workshop: Vascular Matrix Biology and Bioengineering II
Whistler, British Columbia, Canada
March 16-19, 2009
Chairs: Cecilia Giachelli and Michelle Bendeck
michelle.bendeck@utoronto.ca
http://www.navbo.org/resource/resmgr/docs/about.htm

2009 Annual ASBMB Conference
New Orleans, Louisiana, USA
April 18-22, 2009
http://www.asbmb.org/page.aspx?id=146

ICRS 2009 - 8th World Congress of the International Cartilage Repair Society
Miami, Florida, USA
May 23-26, 2009
http://www.cartilage.org/

Joint Meeting of the German and French Connective Tissue Societies
Reims, France
June 4-6, 2009

8th Pan Pacific Connective Tissue Societies Symposium in association with the ISMB
Yokosuka, Japan
June 4-7, 2009
http://www.kokuhoken.or.jp/ysf2009/invitation.html
This conference incorporates the 41st Annual Meeting of the Japanese Society for Connective Tissue Research, the 56th Annual Meeting of the Japan Matrix Club, and The Yokosuka International Conference on Cancer Microenvironments and runs under the logo “Yokosuka Science Festa 2009”

Gordon Research Conference Cartilage Biology & Pathology
Les Diablerets, Switzerland
June 7-12, 2009
Chair: Bjorn R. Olsen & Dick K. Heinegard
Vice Chair Karen M. Lyons & Kathryn S. Cheah
http://www.grc.org/programs.aspx?year=2009&program=cartilage

Joint Meeting of the Bone Research Society & British Society for Matrix Biology
London, United Kingdom
June 14-16, 2009
http://www.bsmb.ac.uk/brs/index.html

Gordon Research Conference Tissue Repair & Regeneration
New London, New Hampshire, USA
June 14-19, 2009
Chair: Luisa A. DiPietro
Vice Chair: Michael Galko
http://www.grc.org/programs.aspx?year=2009&program=tissuerep

ECM X: Stem Cells for Musculoskeletal Regeneration
Davos, Switzerland
June 29-July 2, 2009
http://www.ecmjournal.org/ecm_meetings/ecm_10/index.shtml

Gordon Research Conference Bones & Teeth
Biddeford, Maine, USA
July 12-17, 2009
Chair: Brendan F. Boyce
Vice Chair: Bjorn R. Olsen
http://www.grc.org/programs.aspx?year=2009&program=bones

Gordon Research Conference Collagen
New London, New Hampshire, USA
July 19-24, 2009
Chair: Leena Bruckner-Tuderman
Vice Chair: Billy Hudson
http://www.grc.org/programs.aspx?year=2009&program=collagen
The Collagen Gordon Research Conference has convened biennially for the last 38 years and will continue to present cutting-edge research on a wide range of topics on structure, biology and pathology of collagens and their ligands in development, tissue homeostasis and pathology. The meeting program reflects the complexity of the collagen genome, the diversity of the collagen proteome and its functions, variations that result from physiological alterations, and consequences of collagen mutations. The conference will continue to recognize the central roles of collagens in their macromolecular context in a wide variety of matrices in all organs and their instructive roles that govern cell functions, including stem cells. Special focus will be on recent developments on molecular and cell-based therapies of collagen diseases. The primary objective is to provide a forum for the presentation and discussion of recent contributions at the leading edge of the field.

Gordon Research Conference Elastin & Elastin Fibers
Biddeford, Maine, USA
July 26-31, 2009
Chair: Anthony S. Weiss
Vice Chair: Richard A. Pierce
http://www.grc.org/programs.aspx?year=2009&program=elastin

Gordon Research Conference Matrix Metalloproteinases
Les Diablerets, Switzerland
August 30 - September 4, 2009
Chair: Carl P. Blobel
Vice Chair: Rafael A. Fridman
http://www.grc.org/programs.aspx?year=2009&program=matrixmet

25. Ernst Klenk Symposium in Molecular Medicine Extracellular Matrix in Health and Disease
04. - 06. October 2009 in Cologne
Further information: : http://www.zmmk.uni-koeln.de/content/index_eng.html>www.zmmk.uni-koeln. See poster at end of Newsletter,

International Bone-Tissue-Engineering Congress
Hannover, Germany
October 8 -11, 2009
http://www.bone-tec.com

Advanced Lecture Course

FEBS-MPST 2009 info

The 2nd FEBS Advanced Lecture Course (FEBS-MPST 2009) entitled Matrix Pathobiology, Signaling and Molecular Targets will be held in Patras, Greece, July 11-16, 2009.
The most important goal of this course is to bring together scientists from biochemistry, life sciences and molecular cell biology on an important and rapidly developing scientific field. General Lectures/Tutorials and Plenary Symposia (Functional ECM Molecules in Health and Diseases/ ECM Pathobiology / Metabolic Regulation of ECM molecules / Glycobiology, Disease Monitoring and Targeting / Signaling and Molecular Targeting) will be introduced and moderated by leading scientists acting as discussion leaders.

Talks will be selected from the submitted abstract. Young scientific awards for the best 5 posters are also available upon application. A number of FEBS Youth Travel Funds (YTF) for PhD students and young researchers will be available covering registration fees and travel.

Please note the deadlines given below for YTF fellowships and abstracts submissions:
- February 20, 2009: Deadline for FEBS Youth Travel Fellowship applications.
- April 10, 2009: Deadline for application/registration and abstract submission.

For further course info, invited speakers/tutors, preliminary program, submission of abstracts and application/registration please go to the website: http://www.febs-mpst2009.upatras.gr/

Matrix Research Update

Papers in press

Direct visualization of protease activity on cells migrating in three-dimensions

Beverly Z. Packard, Vira V. Artym, Akira Komoriya, and Kenneth M. Yamada

Determining the specific role(s) of proteases in cell migration and invasion will require high-resolution imaging of sites of protease activity during live-cell migration through extracellular matrices. We have designed a novel fluorescent biosensor to detect localized extracellular sites of protease activity and to test requirements for matrix metalloprotease (MMP) function as cells migrate and invade three-dimensional collagen matrices. This probe fluoresces after cleavage of a peptide site present in interstitial collagen by a variety of proteases including MMP-2, -9, and -14 (MT1-MMP) without requiring transfection or modification of the cells being characterized. Using matrices derivatized with this biosensor, we show that protease activity is localized at the polarized leading edge of migrating tumor cells rather than further back on the cell body. This protease activity is essential for cell migration in native cross-linked but not pepsin-treated collagen matrices. The new type of high-resolution probe described in this study provides site-specific reporting of protease activity and insights into mechanisms by which cells migrate through extracellular matrices; it also helps to clarify discrepancies between previous studies regarding the contributions of proteases to metastasis.

Fibrillin assembly requires fibronectin

Laetitia Sabatier, Daliang Chen, Christine Fagotto-Kaufmann, Dirk Hubmacher, Marc D. McKee, Doug S Annis, Deane F. Mosher, Dieter P. Reinhardt
Molecular Biology of the Cell

Fibrillins constitute the major backbone of multi-functional microfibrils in elastic and nonelastic extracellular matrices. Proper assembly mechanisms are central to the formation and function of these microfibrils, and their properties are often compromised in pathological circumstances such as in Marfan syndrome and in other fibrillinopathies. Here, we have used human dermal fibroblasts to analyze the assembly of fibrillin-1 in dependence of other matrix forming proteins. siRNA knockdown experiments demonstrated that the assembly of fibrillin-1 is strictly dependent on the presence of extracellular fibronectin fibrils. Immunolabeling performed at the light and electron microscopic level showed colocalization of fibrillin-1 with fibronectin fibrils at the early stages of the assembly process. Protein-binding assays demonstrated interactions of fibronectin with a C-terminal region of fibrillin-1, -2 and -3, and with an N-terminal region of fibrillin-1. The C-terminal half of fibrillin-2 and -3 had propensities to multimerize, as has been previously shown for fibrillin-1. The C-terminal of all three fibrillins interacted strongly with fibronectin as multimers, but not as monomers. Mapping studies revealed that the major binding interaction between fibrillins and fibronectin involves the collagen/gelatin binding region between domains FNI6-FNI9.

Recently in print

A robust method for proteomic characterization of mouse cartilage using solubility-based fractionation and two-dimensional electrophoresis.

Wilson R and Bateman JF.
Matrix Biol. 2008 Oct;27(8):709-12

Identification of protein expression differences using two-dimensional electrophoresis (2-DE) and multidimensional liquid chromatography (MDLC)-based proteomics depends critically on reproducibility throughout sample preparation and analysis. This applies particularly where sample fractionation is used to remove high abundance or interfering components to facilitate deeper mining of the proteome. Here we present a procedure for solubility-based cartilage fractionation using sequential extraction with 1M sodium chloride followed by 4M guanidinium hydrochloride. We characterized the extracts by 1-D electrophoresis and immunoblotting for individual cellular and matrix proteins and globally by 2-DE. In general, NaCl extracts were highly enriched for cellular proteins and GuHCl extracts were predominantly matrix components, with some interesting exceptions. Importantly, we observed high inter-sample reproducibility and strong correlation between targeted and global analysis, indicating that our method can be applied to differential proteomic analysis of normal and pathological cartilage sub-proteomes.

ISMB Membership news

Sergio Jimenez Honored as an American College of Rheumatology Master **(excerpt from ASBMB Today, Nov. 2008 issue)**.

Sergio A. Jimenez, Professor of Biochemistry and Molecular Biology at Thomas Jefferson University, was honored as an ACR Master at the American College of Rheumatology Annual Scientific Meeting in San Francisco this past October for his distinguished career as a researcher and clinician in the molecular biology of rheumatological diseases. Jimenez is currently Director of the Scleroderma Center, Co-Director of the Jefferson Institute of Molecular Medicine, and Director of the Division of Connective Tissue Diseases at Thomas Jefferson University. His research activities have focused on the application of biochemical, molecular biological, and genetic approaches to the study of scleroderma, fibrotic disorders, and osteoarthritis. His major contributions include identifying the mechanisms of cytokine regulation of collagen gene expression and of the interactions between inflammatory cells and fibroblasts. Other contributions by Jimenez include the study of the role of transforming growth factor in tissue fibrosis, and the identification of cartilage gene mutations in osteoarthritis. Finally, his demonstration of microchimeric fetal cells in affected tissues from scleroderma patients, supporting the hypothesis that fetal cell transfer across the placenta during pregnancy may cause the disease, shows Jimenez's formidable researching ability.

Membership dues - NOW IS THE TIME TO RENEW!
Are you by any chance among those many who still have not yet renewed their memberships for 2008? Better late than never. Please take out your VISA- or Master/Euro-Card and go to http://www.ismb.org. You will find directions under "Membership" on how to proceed. It is simple. If you are the proud owner of a credit card and also have access to the internet there is simply no excuse for you. It is as safe as any other SSL-encoded transaction that you may conduct over the internet. To best serve the matrix biology community it is important to keep our membership details up-to-date. Please let us know if you change email address or regular mailing address. Please email Jamie Fitzgerald (fitzgerj@ohsu.edu) and Peter Bruckner (peter.bruckner@uni-muenster.de) with any address changes so we can update our records.

Job Advertisements

MASSACHUSETTS GENERAL HOSPITAL

HARVARD MEDICAL SCHOOL

POSTDOCTORAL FELLOW POSITION

Cutaneous Biology Research Center, Department of Dermatology, Massachusetts General Hospital/Harvard Medical School, Boston

Position start date: 7/1/2009
Postdoctoral fellow position available in the laboratory of Dr. Alexander G. Marneros.

The main focus of research is on tissue-specific functions of VEGF and its receptors. We are using mouse genetics to determine the in vivo functions of VEGF signaling in the skin and the eye during development and in pathological angiogenesis. In vivo and in vitro assays will be used to dissect tissue-specific functions of VEGF and its receptors.

For more information see: http://www2.massgeneral.org/cbrc/pages/cbrc_AlexMarneros.htm

Required profile:
- Ph.D. with strong background in molecular biology
- Experience with in vivo models/mouse work preferred
- Ability to work independently within a dynamic team

Interested candidates should send the CV and the reference of the doctoral supervisor to Alexander G. Marneros, M.D., Ph.D., email: alexander_marneros@yahoo.com

The MGH/Harvard Cutaneous Biology Research Center is a committed Equal Opportunity/Affirmative Action Employer. Minorities, women, handicapped and veterans are encouraged to apply.

Jefferson™

THOMAS JEFFERSON UNIVERSITY
PHILADELPHIA, PA

POSTDOCTORAL POSITIONS IN PROTEOGLYCAN RESEARCH, CANCER AND ANGIOGENESIS

Two postdoctoral positions are available to investigate the biology of perlecan and decorin in cancer and angiogenesis. The candidates will join a multi-disciplinary team of researchers involved in investigating the molecular mechanisms through which these two proteoglycans affect tumor biology, EGFR and Met receptor signaling, growth and angiogenesis, both *in vitro* and *in vivo* (*J. Cell Biol.* **166**:97-109, 2004; *J. Biol. Chem.* **280**:32468-32479, 2005; *Nature Rev. Mol. Cell. Biol.* **6**:646-656, 2005; *J. Natl. Cancer Inst.* **15**: 1634-1646, 2006; *Blood* **109**: 3745-3749, 2007; *J. Biol.Chem.* **283**:2335-2344, 2008; *J. Cell Biol.* **181**:381-394, 2008.; *Biochemistry* **47**:11174-11183, 2008; *Am. J. Pathol*. **173**:844-855. 2008).

Requirements include a Ph.D. or an M.D./Ph.D. in biochemistry or cell biology. A molecular biology background is highly desirable. Send resume and three letters of reference to:

Renato V. Iozzo, M.D.
Department of Pathology, Anatomy & Cell Biology
Thomas Jefferson University
1020 Locust Street, Room 249 JAH
Philadelphia, PA 19107-6799, U.S.A.
Fax (215) 923-7969
Email: lozzo@mail.jci.tju.edu

Conference Report

Matrix Biology Society of Australia and New Zealand
2008 meeting, Ettalong Beach, Australia

The Annual Scientific meeting of Matrix Biology Society of Australia and New Zealand was held between the 13th and 16th October at the Mantra Resort at Ettalong Beach, which is approximately 1 hour drive north of Sydney. The society would like to acknowledge the support of the principal sponsor LifeCell, the major sponsor Bioactive Pharmaceuticals Australia and a host of research reagent supply companies. The meeting was fortunate to host Prof Martin Humphries from the Wellcome Trust Centre for Cell and Matrix Research at the University of Manchester who spoke about proteomic analysis and integrin receptor signaling, Dr Carl Flannery from Wyeth who spoke about therapeutic indications for improving cartilage and joint function in osteoarthritis, Prof Bruce Caterson from Cardiff University who reminded us about the importance of chondroitin sulfate as biomarkers for progenitor cells and their "niches" in relationship to musculoskeletal tissues, Prof Jerry Turnbull from the University of Liverpool who provided some balance by talking about the importance of heparan sulfates in biology. Other invited speakers for the conference included Drs Nikolas Haass and Chris Jackson from the University of Sydney, Dr Sally Dunwoodie from the University of New South Wales. The meeting opened with the Barry Preston Award lecture being delivered by Prof John Bateman from the Murdoch Children's Research Institute and Unversity of Melbourne. This session was partly sponsored by the ARC/NH&MRC Research Network for Genes and Environment in Development. John is one of the most distinguished and eminent matrix biologists in Australia and New Zealand with over 150 publications, many of which are in high ranking journals. He has been a past president of the Australian and New Zealand Society and more recently the International Society for Matrix Biology.

Figure 1. Beach Party attendees at the recent Australian and New Zealand Matrix Biology Meeting Back Row (L – R); Carl Flannery, John Whitelock, Martin Humphries, John Bateman. Front Row (L – R); Bruce Caterson, Shireen Lamande, Sally Dunwoodie. Does the MBSANZ president really have her hand on Prof Caterson's knee?

Figure 2: Barry Preston Awardee, John Bateman shows us all how to dance when you are an eminent Professor. Note some other well know Australian Matrix Biologists in the shot!

A major highlight of the intense social calendar was the beach themed conference dinner where all delegates came dressed for a day on the beach in the hot Australian sun (see Figure 1) and, after consuming a few local cold beverages, were seen to be jumping around on the dance floor obviously discussing the details of some very complex experiments (see Figure 2).

A great time was had at the meeting both scientifically and socially by all and I know that many of the society's members are looking forward to the 2009 meeting which will be held in the best wine producing area in the world in regional South Australia. We are looking forward to seeing as many of our International colleagues as possible at the meeting.

Figure 3: Emily Fuller and Miriam Jackson from Chris Little's lab ready for the next phase of their projects with lifejackets at the ready!

Matrix Biology 27 (2008) 651–652

Contents lists available at ScienceDirect

Matrix Biology

journal homepage: www.elsevier.com/locate/matbio

From the Editor's Desk

Midnight footprints in the watermelon patch

The extracellular matrix polymer hyaluronan (HA), as well as its associated enzymes of synthesis and degradation do not give up their secrets easily. The article in the present volume of Matrix Biology from a Canadian laboratory, that of Barbara Triggs-Raine (Atmuri et al., 2008), strengthens that statement. The paper reports that mice with the deletion of the hyaluronidase-like *HYAL3* gene have a near normal phenotype. No accumulation of HA is observed in any tissue. The only difference noted, compared to wild-type control mice, is a not-so-subtle change in pulmonary histology.

The hyaluronidase-like gene family is coded for by six paralogous sequences in the Human Genome (Csoka et al., 1999), three on chromosome 3p21.3, (*HYAL2-HYAL1-HYAL3*) and another three on 7q31.3 (*SPAM1-HYAL4-HYALP1*). In somatic tissues, HA appears to be catabolyzed by the coordinated effects of HYAL1 and HYAL2. PH-20, also known as SPAM-1, (SPerm Adhesion Molecule-1) is the hyaluronidase associated with the acrosome of sperm, though it is also detected at much lower levels in other tissues of the genito-urinary tract in both males and females (Zhang and Martin-DeLeon, 2003; Zhang et al., 2004a,b). *HYALP1* codes for a pseudogene, transcribed but not translated in the human.

These β-endoglycosidase enzymes initiate the breakdown of HA, a ubiquitous matrix glycosaminoglycan that occurs in particular abundance in vertebrate tissues undergoing development, rapid growth and repair, as well as in association with malignancies. Completion of HA degradation to individual sugars is assisted by the lysosomal exoglycosidases, β-glucuronidase and β-*N*-acetyl-glucosaminidase.

The hyaluronidases with known activity have a number of vexing characteristics that distinguish them from conventional enzymes. They must catalyze a substrate of enormous volume, much of it consisting of solvent water. These enzyme glycoproteins can be compared to flies sitting on a watermelon as they try to digest it. It is a marvel that it is attempted at all.

However, this may not be a meaningful analogy. The fact that the HA molecule occupies a large volume of solvent water may actually open it up for enzyme access. It would be very easy to envision their making just a few cuts (HYAL2) and then diving in (HYAL1). The remarkable size proportions between enzyme and substrate do stand however.

Another problem that ultimately must be resolved is why very low or no apparent enzymatic activities, using conventional assays, can be detected for HYAL3, as pointed out in the current article (Atmuri et al., 2008), or for HYAL4. Increases and decreases in levels of *HYAL3* and *HYAL4* transcription and translation have been reported in response to changing tissue culture conditions or to cytokines (Flannery et al., 1998; Nicoll et al., 2002) suggesting that they do have some as yet unknown, but probably important biological functions. Very low levels of an acid-active HYAL3 have been detected, however, but only in the tissue culture situation (Lokeshwar et al., 2002).

Reports from the laboratory of B. Deschrevel, in Rouen, France, which appeared in Matrix Biology, describe experiments that attempt to resolve some of these issues (Astériou et al., 2006; Deschrevel et al., 2008; Deschrevel et al., in press). They document that electrostatic interactions between the hyaluronidase protein and the polycationic HA polymer substrate have profound effect on enzymatic activity. Adding simple proteins such as BSA, which compete with such interactions, changing ionic strength, or modifying the size or concentration of the HA, uncovers activities that are not otherwise detectable.

HYAL3 and HYAL4 may have low levels of hyaluronidase activity, too low to be detected in conventional assays. Alternatively, they may have activities that can be uncovered only in the presence of added polyanions, by adding proteins such as BSA to the assay mixtures, as described by the reports from the Deschrevel laboratory.

All of these observations may be variations on protein modeling known as the allosteric effector mechanism, first described by Jacob et al. (1963). In that model, enzymes change their conformation and affinity for substrate in response to substrate concentration, binding molecules, co-factors, and to the presence of other proteins. The properties of the Nobel Prize-winning Jacob-Monod model, describing the control of β-galactosidase synthesis by the presence of the lac repressor protein in E. coli may have parallels in protein cross-talk for the control of expression and apparent activity of vertebrate enzymes. It also reflects the dynamic reciprocal interactions that occur between enzyme and substrate, endowing each enzyme with "its own personality" as Arthur Kornberg pointed out (1989).

In addition, it must be considered that absence of activities in k/o mice does not correspond to a lack of importance. As has been documented in innumerable situations, nature has cleverly provided back-up mechanisms for proteins essential for viability, including e.g. the HA receptor, CD44. Another HA receptor, RHAMM, is up-regulated in the mouse to accommodate for the loss by genetic deletion of CD44 (Nedvetzki et al., 2004). The recent report of a *HYAL1* k/o mouse with very little change in phenotype except for mild osteoarthritis (Martin et al., in press) further supports such a formulation.

It would also be of intrinsic interest to speculate why levels of HYAL1 were reduced by 60% in the HYAL3−/− mice, as shown in this report (Atmuri et al., 2008). Are the genes possibly polycistronic, or is their co-transcription (Shuttleworth et al., 2002)? Additionally, increasing expression of HYAL3 also induces an increase in HYAL1 activity, an observation made by this same laboratory (Hemming et al., 2008). Anomalously, in the *HYAL1* k/o mouse described recently, also by Barbara Triggs-Raine and her laboratory (Martin et al., in press), elimination of HYAL1 resulted in up-regulation of HYAL3. This is an unexpected result. Another clue, this one from outer space, is the

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observation that cell surface HYAL2 is a receptor for certain animal retroviruses (Miller, 2003).

There are strange goings on in this gene cluster. Examination of double knock outs, using all possible combinations of HYAL1, HYAL2, and HYAL3, while technically far more difficult, might provide meaningful insights into subtleties of HA degradation in somatic tissues. Added to these conundrums is the phenomenon of alternative exon and intron splicing of these enzymes that affect activity, as already shown for HYAL1 (Frost et al., 2000; Lokeshwar et al., 2002) and HYAL3 (Lokeshwar et al., 2002).

Just because we have named them enzymes, this does not indicate that they are enzymes only. They may have other activities, and some that are perhaps even more important. These enzymes and products of enzyme-like sequences may function e.g. as receptors, as already pointed out (Miller, 2003), or as adhesion or even as anti-adhesion molecules.

The time has come perhaps, to pull some of these disparate observations together, to test whether further secrets of the HA stealth molecule (Lee and Spicer, 2000) and its enzymatic accomplices can be dragged into the light of day.

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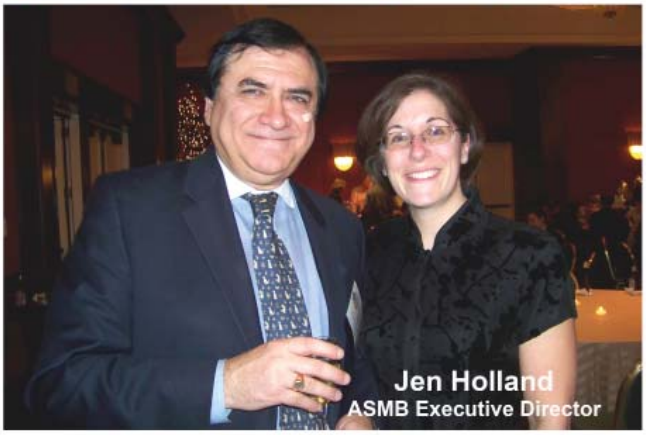
ISMB members in action at the ASMB meeting in San Diego, December 2008


Tom Wight
Zoltan Urban


Roland and Liliana Schaefer


Jen Holland
ASMB Executive Director

25. Ernst Klenk Symposium in Molecular Medicine
Extracellular Matrix in Health and Disease
04. – 06. October 2009

Dear friends and colleagues

We would like to invite you to the 25. Ernst Klenk Symposium in Molecular Medicine on "Extracellular Matrix in Health and Disease" which will be held from 04. to 06. October 2009 at the Main Lecture Hall of the Medical Faculty of the University of Cologne.

We are very pleased to announce that Prof. Bjorn R. Olsen (Department of Developmental Biology, Harvard School of Dental Medicine, Boston, USA) was substantially involved in the scientific coordination of the program. Prof. Olsen will also present the Ernst Klenk Lecture entitled "Translational Cell and Matrix Biology of Vascular Disease" on Monday, 05. Oct. 2009 at 6 p.m.

The list of speakers includes internationally leading researchers who will speak on a variety of pertinent subjects including extracellular matrix proteins, their processing, their cellular receptors and their role in development and in disease.

The Klenk Symposium - organized by the Center for Molecular Medicine of the University of Cologne (CMMC) - is intended to provide a forum for discussion of state-of-the-art research in these fields for interested scientists and students from academia and industry.

The symposium will start on Sunday, 04. Oct. 2009 at c. 1.30 p.m. and will end on Tuesday, 06. Oct. 2009 at around 2.00 p.m. Please note that the participation is free of charge; for free registration please click here.

We expect lively and fruitful discussions and look forward to welcoming you at the 25. Ernst Klenk Symposium in Cologne.

Yours faithfully,

Thomas Krieg
Chairman
Center for Molecular Medicine Cologne

Mats Paulsson
Executive Board Member
Center for Molecular Medicine Cologne

25. Ernst Klenk Symposium
in Molecular Medicine
04. - 06. October 2009

Extracellular Matrix in Health and Disease

Invited Speakers

Suneel Apte - Cleveland, USA
Leena Bruckner-Tuderman - Freiburg, DE
Peter Carmeliet - Leuven, BE
Kathryn S. E. Cheah - Hong Kong, HK
David A. Cheresh - San Diego, USA
Benoit de Crombrugghe - Houston, USA
Harry Dietz - Baltimore, USA
Reinhard Fässler - Martinsried, DE
Dick Heinegård - Lund, SE
Renato V. Iozzo - Philadelphia, USA
Gerard Karsenty - New York, USA
Birgit Leitinger - London, UK
Robert Mecham - St.Louis, USA
Stefan Mundlos - Berlin, DE
Raili Myllylä - Oulu, FI
Bjorn R. Olsen - Boston, USA
Leena Peltonen - Cambridge, UK
Vicki Rosen - Boston, USA
Samuel I. Stupp - Evanston, USA
Kenneth M. Yamada - Bethseda, USA

Ernst Klenk Lecture - Bjorn R. Olsen - Boston, USA

Venue
Main Lecture Hall of the
Centers for Biochemistry and Physiology
Building 44b, Joseph-Stelzmann-Str. 52
Medical Faculty, University of Cologne, DE

Scientific Organizer
Bjorn R. Olsen - Boston, USA

Organizers
Thomas Krieg - Cologne, DE
Mats Paulsson - Cologne, DE

Program and further information:
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- Participation is free of charge; free registration at: klenk-symposium@uni-koeln.de -

Organization
Center for Molecular Medicine, University of Cologne (CMMC/ZMMK)

XXVIII SISC MEETING, PAVIA, ITALY

XXVIII Italian Society for the Study of Connective Tissues (SISC) Meeting, Pavia, Italy, 6–7 November 2008

www.unipv.it/sisc

WELCOME ADDRESS FROM THE SISC PRESIDENT

It is a great honour for me to open this XXVIII Meeting of the Italian Society for Study of Connective Tissue held in this prestigious historical residence of Collegio Cairoli. It is a particular pleasure to be able to welcome the Academic authorities of the University of Pavia, the Organizing Committee and all Participants and Members of the Society. This Meeting is dedicated to the Memory of two outstanding personalities of the Scientific Community, Prof. Alessandro Castellani and Prof. Lorenzo Gotte, who had in common, not only scientific interests, but also the fate of a premature decease. This year is the XX anniversary of the death of Prof. Alessandro Castellani (1929-1988). He was among the internationally recognized pioneers of the modern concepts of extracellular matrix, with particular interest to the biochemistry of glycosaminoglycans, collagen and genetic diseases of extracellular matrix. He was founder and first President of our Connective Tissue Society, founder of the Department of Biochemistry in Pavia, which in 1994 was dedicated to its name, and he was also a great “Magnifico Rettore” of Pavia University.

We want also to remind in this Meeting, the other excellent scientist Lorenzo Gotte (1926-1991). Prof. Lorenzo Gotte was one of the most esteemed directors of the Institute of Histology and Embryology of the Faculty of Medicine in Padova University. He was among the world-wide specialist in the field of elastin, studied from all points of view, structural, ultra structural, biochemical. He was the Vice-President of the SISC and the second President after the Castellani death. His guidance, enthusiasm, and support to the Society allowed the affirmation of our Society inside the international context and within the European Federation.

But there is another aspect adjoining Castellani and Gotte: they were men to never be forgotten, both for human and scientific qualities. Both of them left a great school, in each of their context, and here today in this meeting we have the pleasure to see many of the first and second generation of Castellani and Gotte university pupils, prosecuting their scientific mission.

Finally, I wish to formulate my best welcome all participants, and particularly to the yang researchers, expecting that we all will enjoy the meeting, both as a scientific event and an occasion of renewal and consolidation of bonds of friendship.

Ida Pucci-Minafra