

FEBS Advanced Lecture Course

Matrix Pathobiology, Signaling and Molecular Targets

Kos, September 26th- October 1st 2013

Selected Talks & Posters

The poster session represents a vital part of the FEBS-MPST 2013 meeting. All abstracts, whether or not selected for oral presentations (presented also as ST1-ST24 in the program), will be on display as posters during the entire course to provide ample time for informal discussions among students, participants and lecturers. Three poster sessions and poster discussion groups (Friday 27th, Saturday 28th, Monday 30th) as well as two speakers' corner session to meet and discuss with invited speakers (Sunday 29th and Monday 30th) have been planned (see scientific program).

Selected talks (ST1/P1 – ST24/P24)

ST1/P1: Syndecan-1 overexpression inhibits SULF1 and modulates heparan sulfate chain composition in malignant mesothelioma cells

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ST2/P2: Effect of Lumcorin, a lumican-derived peptide, on the melanoma cell growth and invasion

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ST3/P3: Syndecan-4 promotes myocardial stiffness by regulating myofibroblast differentiation and extracellular matrix structure in response to pressure overload

Kate M. Herum^{1,2}, Ida G. Lunde^{1,2}, Biljana Skrbic^{1,2,3}, Theis Tønnessen^{1,2,3}, William E. Louch^{1,2}, Almira Hasic^{1,2}, Ivar Sjaastad^{1,2}, Sigurd Boye⁴, Sverre-Henning Brorson⁵, Andreas Unger⁶, Wolfgang A. Linke⁶, Maria F. Gomez⁷, Geir Christensen^{1,2}

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ST4/P4: Syndecan-1 overexpression on mesothelioma cells affects angiogenesis-related factors

Heidari-Hamedani G, Szatmari T, Mundt F, Hjerpe A, Dobra K

Department of Laboratory Medicine, Division of Pathology, Karolinska Institutet, Stockholm, Sweden

ST5/P5: Stromal Syndecan-1, Matrix Alignment and Breast Cancer Invasion

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ST6/P6: Syndecan-1 as a soluble biomarker for human malignancies

Filip Mundt¹, Gustav Nilsson¹, Tünde Szatmari¹, Ghazal Heidari-Hamedani¹, Sertac Arslan², Muzaffer Metintas², Henrik Johansson³, Janne Lehtiö³, Anders Hjerpe¹ and Katalin Dobra¹

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ST7/P7: Hyaluronan affects CD44-iASPP cooperation in mammary epithelial cells

Kaustuv Basu*, Aino Ruusala*, Inna Kozlova, Oleksandr Voytyuk, Carl-Henrik Heldin and Paraskevi Heldin

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ST8/P8: The matrix component biglycan triggers the crosstalk between macrophages and podocytes during renal inflammation

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ST9/P9: Inhibition of TGF- β signaling in left ventricular pressure overload leads to eccentric remodeling and reduced signs of heart failure, possibly due to reduced collagen content and LOX activity.

Engebretsen KV^{1,2,3}, Skårdal K^{2,3}, Bjørnstad S⁴, Marstein H^{1,2,3}, Skrbic B^{1,2,3}, Sjaastad I^{2,3}, Christensen G^{2,3}, Bjørnstad JL^{1,2,3}, Tønnessen T^{1,2,3}.

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ST10/P10: A possible role for Collagen XVIII N-terminal domain in the control of myeloid leukemia cells growth

Inderjeet Kaur, Valerio Izzi, Mari Aikio, Ritva Heljasvaara and Taina Pihlajaniemi

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ST11/P11: Rab10 mediated early endocytosis of HAS3 regulates hyaluronan synthesis and cell adhesion

Ashik Ahamed J¹, Sanna Oikari¹, Kirsi Rilla¹, Genevieve Bart¹, Jukka Häyrynen¹, Riikka Kärnä¹, Raija Tammi¹, Katri Makkonen¹, Markku Tammi¹

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ST12/P12: Role of natural antisense HAS2-AS1 RNA in the regulation of hyaluronan synthesis

Davide Vigetti, Sara Deleonibus, Paola Moretto, Manuela Viola, Evgenia Karousou, Maria Luisa D'Angelo, Giancarlo De Luca, Alberto Passi

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ST13/P13: Matrix Metalloprotease-9/Chondroitin Sulphate Proteoglycan Complexes
R. Dawadi¹, N. Malla¹, E. Berg¹, G. Svineng¹, A.D. Theocharis², L. Uhlin-Hansen¹ and J.-O. Winberg¹

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ST14/P14: Heparanase 2 expression is decreased in human cancer and attenuates lymphangiogenesis

Miriam Gross-Cohen, Sari Feld, Neta Ilan and Israel Vlodavsky

Cancer and Vascular Biology Research Center, Bruce Rappaport Faculty of Medicine, Technion, Haifa, Israel

ST15/P15: Dynamic interplay between normal endothelium and breast cancer cells via altered expression of matrix molecules

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ST16/P16: NG2/CSPG4 control of cellular interactions under flow mimicking extravasation conditions

Lombardi E.¹, Dallatomasina A.³, Nicolosi P.A.², Zanocco D.², Mangeri D.^{3,4}, Alias C.³, Marastoni S.², Coluccia A.M.L.^{5,6}, Perris R.³

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⁵ University of Salento

⁶ National Research Council of Lecce

ST17/P17: Decellularizing colorectal tumours: dissecting the role of macrophages and extracellular matrix for tumour progression

ML Pinto^{1,2}, E Rios^{3,7}, A Silva¹, AT Pinto^{1,4}, AP Cardoso^{1,4}, D Nascimento¹, P Pinto do Ó^{1,4}, F Carneiro^{3,5,7}, MB Barbosa^{1,2}, MJ Oliveira^{1,3,6}

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ST18/P18: Novel COMP neopeptides identified from patients with joint diseases by immune-affinity chromatography and mass spectrometry

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ST19/P19: Molecular consequences of defective SERPINH1 in Osteogenesis Imperfecta

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ST20/P20: Hepatocarcinogenesis in matrilin-2 knock out mice

Alexandra Fullár, Kornélia Baghy, Ilona Kovalszky

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ST21/P21: Oxidized LDL affects hyaluronan synthesis in human aortic smooth muscle cells

Manuela Viola, Barbara Bartolini, Davide Vigetti, Evgenia Karousou, Paola Moretto, Sara Deleonibus, Giancarlo De Luca and Alberto Passi

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ST22/P22: Differential role for HS3ST2 in modulating breast cancer cell invasiveness: A molecular mechanism mediated by protease expression via MAP kinase and WNT pathways

Archana Vijaya Kumar¹, Ezeddin Salem Gassar¹, Dorothe Spillmann³, Christian Stock², Ludwig Kiesel¹, George W. Yip⁴, Martin Götte¹

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ST23/P23: Decorin interferes with platelet-derived growth factor receptor signaling in experimental hepatocarcinogenesis

Kornélia Baghy¹, Zsolt Horváth¹, Eszter Regős¹, Katalin Kiss¹, Zsuzsa Schaff², Renato V. Iozzo³, Ilona Kovalszky¹

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ST24/P24: EphB2 receptor modulates gene expression signature involved in migration and invasion of cutaneous squamous cell carcinoma

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Posters (P25-P69)

P25: Cross-talk of ERs with growth factors receptors affects the expression and distribution of breast cancer-associated heparan sulfate proteoglycans

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P26: Serglycin expressed by aggressive testicular germ cell tumors regulates the expression of matrix remodeling enzymes

Argyrios Noulas¹, Vassilios Krikelis¹, Alexandros Antoniou¹, Spyros S. Skandalis², Vassiliki T. Labropoulou³, Angeliki Lampropoulou², Kristian Prydz⁴, Nikos K. Karamanos², Achilleas D. Theocharis²

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³Division of Hematology, Department of Internal Medicine, University Hospital of Patras, Greece

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P27: Regulation of complement system by serglycin secreted in malignancies

Vassiliki T. Labropoulou¹, Angeliki Korpetinou², Angeliki Lampropoulou², Anargyros Moulas³, Kolokithopoulou Foteini³, Argyrios Noulas³, Nikos K. Karamanos², Achilleas D. Theocharis²

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P28: Syndecan-4 shedding in the hypertrophic heart is likely mediated by the MMP9 and ADAMTS4 enzymes, a process involved in cardiac inflammation and failure progression

Mari E. Strand^{1,2}, Kate M. Herum^{1,2}, Biljana Skrbic^{1,2,3}, Heidi Kvaløy^{1,2}, Ivar Sjaastad^{1,2,3}, Theis Tønnessen^{2,4}, Geir Christensen^{1,2}, Ida G. Lunde^{1,2,5}

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P29: Defective proteoglycan synthesis in Desbuquois dysplasia is caused by mutations in CANT1 gene

M. Luca¹, F. De Leonardis¹, R. Tenni¹, A. Forlino¹, C. Huber², M. Bertoli², M. Fradin², M. Le Merrer², C. Le Goff², V. Cormier-Daire² and A. Rossi¹

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P30: Role of syndecan on cancer epithelial-to-mesenchymal transition and metastasis via integrin activation by divalent cations

Mariana P. Stelling¹, Mariana A. Soares¹, Aline M. dos Santos², Felipe C.O.B. Teixeira¹, Nathalia P. Cid¹, Simone C. Cardoso², Mauro S.G. Pavão¹

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P31: Differential expression of serglycin proteoglycan in cancer cell lines and malignant tissues

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P32: Specificity of interaction of FGFs and HS

Yong Li, David Fernig, Mark Wilkinson

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P33: Hyaluronan/RHAMM receptor signaling in fibrosarcoma cell proliferation

Kouvidi K., Berdiaki A., Nikitovic D., Tzanakakis G. N.

University of Crete, Medical School, Department of Anatomy-Histology-Embryology, Heraklion, Greece

P34: Unexpected sulfation of chondroitin in *C. elegans*

T. Dierker, A. Hinas, L. Kjellén

Department of Medical Biochemistry and Microbiology, Uppsala University, Uppsala, Sweden

P35: p53/iASPP growth-promoting function is affected by CD44 expression

Inna Kozlova^{1*}, Aino Ruusala^{1*}, Kaustuv Basu¹, Spyridon Skandalis^{1,2}, Carl-Henrik Heldin¹ and Paraskevi Heldin¹

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P36: Effects of radioiodine therapy on protease-antiprotease balance and serum levels of soluble tumor necrosis factor receptors in papillary thyroid carcinomas with/without autoimmune thyroid diseases

Adina Elena Stanciu, Anca Sasareanu, Anca Hurduc

Institute of Oncology "Prof.Dr.Al.Trestioreanu" Bucharest, Romania

P37: Complete deficiency for *CREB3L1*, encoding the ER-stress transducer OASIS, causes severe autosomal recessive Osteogenesis Imperfecta in humans

Sofie Symoens¹, Fransiska Malfait¹, Sanne D'hondt¹, Bert Callewaert¹, Annelies Dheedene¹, Wouter Steyaert¹, Hans Peter Bächinger^{2, 3}, Hulya Kayserili⁴, Anne De Paepe¹, Paul J Coucke¹

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P38: Effects of interleukin-6 and its soluble receptor on the expression of matrix metalloproteinases and their inhibitors in nasal polyps fibroblasts

Ioanna Smirlaki¹, Maria Christopoulou¹, Sotirios D. Athanasiou¹, Theodoros Stathas², Stephanos Naxakis², Eleftheria Giannopoulou³, Alexios J. Aletras¹

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P39: Trypanosoma cruzi infection disorganizes TGF- β receptor type II costameric distribution in cardiomyocytes and affects host cell TGF- β response

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P40: The collagen binding protein fibromodulin contributes to atherosclerotic plaque inflammation and cerebrovascular events

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P41 : Elastin content of carotid plaques predicts risk for future stroke

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P42: Gelatinases and Hyaluronidases in serum of colorectal cancer patients

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P43: Nodules origin in Hyaline Fibromatosis Syndrome

J. Burgi, J. Deuquet, S. Salvi, G. van der Goot

Ecole Polytechnique Fédérale de Lausanne, Global Health Institute, Lausanne, Switzerland.

P44: Anticoagulant Heparan Sulfate in the human endometrium : role in permissiveness to invasion and angiogenesis

A. De Agostini, N. Bouchet, A. Filipe, J.-C Tille

Department of Clinical Pathology and Department of OB/GYN, Geneva University Hospitals, Geneva – Switzerland

P45: Identification of the “Uncharacterized protein C10orf118” in breast cancer cells and its role on the hyaluronan metabolism

M.L. D’Angelo¹, E. Karousou¹, M. Viola¹, D.Vigetti¹, S. Deleonibus¹, K. Kouvidi², P. Moretto¹, G. De Luca¹, A. Passi¹

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P46: Heparanase as a new player in renal fibrosis: analysis of its contribution in the epithelial to mesenchymal transition process and its validation as pharmacological target.

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P47: Control of Transport of FGFs in Cell-Cell Communication

Changye Sun, Edwin A. Yates, Raphaël Lévy, David G. Fernig

Department of Structural and Chemical Biology, Institute of Integrative Biology, University of Liverpool

P48: Effects and interplay of legumain and cystatin E/M on migration and invasion of macrophages

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P49: The Role Of Hyperglycaemia In Pancreatic Fibrosis

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P50: Interactions between extracellular matrix, cell surfaces and the novel growth factor tartrate resistant acid phosphatase 5a

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P51: Heparanase internalization and processing is mediated by syndecan 1 cytoplasmic domain and involves syntenin and α actinin

Anna Shteingauz, Neta Ilan and Israel Vlodavsky

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P52: Heparanase co-operate with RAS to drive breast and skin tumorigenesis

Ilanit Boyango, Neta Ilan and Israel Vlodavsky

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P53 :The role of extracellular galectin-3 in canonical Wnt signaling pathway activation in human breast cancer cell lines

Anneliese Costa-Fortuna¹, Araci Rondon¹, Camila Longo-Machado², Renato S. Carvalho³, Marcelo A. Carvalho³, Martin Bonamino⁴, Roger Chammas², Maria Isabel Rossi⁵ and Mauro Pavão¹.

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P54: Overexpression of soluble biglycan aggravates renal damage via the MyD88 and TRIF signaling pathways

Helena Frey¹, Jinyang Zeng-Brouwers¹, Janet Beckmann¹, Madalina V. Nastase¹, Kristin Moreth¹, Marian F. Young² and Liliana Schaefer¹

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P55: The effect of human recombinant decorin on liver cancer cell line Hep3B

Zs. Horvath , K. Baghy , I. Kovalszky

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P56: Effect of prostate cancer cells and normal fibroblasts co-culture on proteoglycan expression in these cells

Anastasia V. Suhovskih, Elvira V. Grigorieva

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P57: Unraveling extracellular matrix regulation by tumor- associated macrophages in colorectal tumors

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P58: Phosphorylation of bacterial effector CagA may be required for the induction of molecules involved in extracellular matrix remodeling in *Helicobacter pylori* experimental *in vitro* infection of gastric epithelial cells.

Sougleri I., Papadakos K., Mentis A., Sgouras D.

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P59: Cardiac ECM-analysis for engineering heart muscle models

Noortje A.M. Bax¹, A.C.C. van Spreeuwel¹, B.J. van Nierop², C.V.C. Bouten¹

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P60: The role of heparin and nano-heparin derivatives in cell functions and proteasome activity regulation in breast cancer.

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P61: Toxicological assessment of pristine multiwall-carbon nanotubes in terms of extracellular matrix expression pattern and functional properties in normal lung fibroblasts

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P62: Evaluation of the intracellular cross-talk of estrogen receptors with growth factor receptors on both extracellular proteolytic events by MMPs and intracellular proteolysis by the proteasome in breast cancer cells

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P63: Regulation of expression and activity of the catalytic proteasomal subunits by EGFR and HER2 receptors in colon cancer cells

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P64: EGFR and HER2 signaling in regulation of functional properties and matrix macromolecules expression in Caco-2 colon cancer cells

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P65: Fulvestrant and tamoxifen modify breast cancer cells' migration differently
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P66: Impaired Endo180 function during photoaging correlates with accumulation of extracellular collagen fragments

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P67: Green tea and glycine improve the repair of the extracellular matrix of Achilles tendon with tendinitis

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P68: Paracrine anti-fibrotic activities of neonatal cells and living cell constructs on human skin fibroblasts persist at senescence

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P69: Tartrate resistant acid phosphatase (TRAP/ACP5) as a regulator of cancer cell proliferation and invasion

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P70: Renal fibronectin accumulation is associated with altered lysosomal cysteine proteinase activity in streptozotocin treated rats.

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P71: Inflammatory stimuli up-regulate all four members of the syndecan family of transmembrane proteoglycans during hypertrophic remodeling of the heart

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P72: Functional interplay of Syndecan-1 and heparanase in colon cancer pathogenesis.

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P73: The role of extracellular galectin-3 in canonical Wnt signaling pathway activation in human breast cancer cell lines

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