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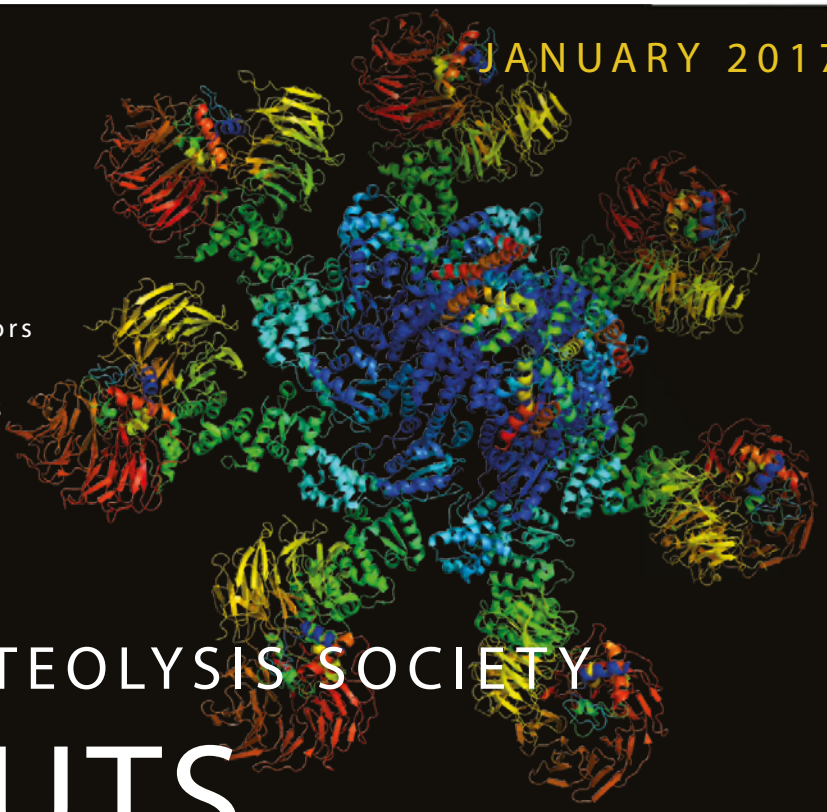
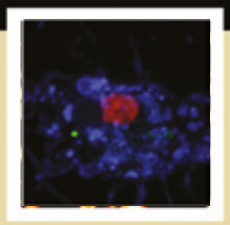


INTERNATIONAL PROTEOLYSIS SOCIETY

QUICKCUTS

Editors:
Sheena McGowan (Monash University)
Margarete Heck (University of Edinburgh)



THE PREMIER RESOURCE
FOR ALL YOUR IMPORTANT PROTEASE QUESTIONS

A Message From the President:

Protease research and other subjects of biochemistry are increasingly seeing competition by areas of the life sciences that are just growing bigger and hotter (some people would say more "sexy") every year. But still – regulated proteolysis is a fundamental principle of normal homeostasis ad deregulated proteolysis is a hallmark of many disease conditions.

Certainly our readers would support this statement – but how to convince junior scientists to stay in the field after completing their Ph.D. or postdoc? IPS has a long-standing commitment on encouragement, training, and support of early carrier scientists at the biannual general meetings of the society. Recently we extended our outreach by the IPS council decision to support also other protease-related meetings by rather small amounts of money. In this regard, the first action was to sponsor the meeting "Metalloproteinases and their inhibitors: beginning, past & future" held at Keble College Oxford in August 2016. At this meeting, organized by Linda Troeberg (Oxford), Jelena Gavrilovic (UEA), and Yoshifumi Itoh (Oxford), IPS sponsored an oral presentation award to Simone D. Scilabra (TU Munich) and two poster prizes to Pernille Søgaard (University of Oxford) and Kim Lemmens (KU Leuven) Congratulations! If you plan to organize a protease meeting and still need some support – just contact us at ipssecretary@gmail.com.

In this issue of Quick Cuts we advertise our 10th General Meeting of the Society held in beautiful Banff, Canada, from Oct. 28th- Nov. 2nd, 2017. I am sure - Joanne Lemieux, Jean-Bernard Denault and Christopher Overall are preparing an outstanding meeting at the frontiers of proteolysis. IPS will help the meeting by providing support for travel awards and training workshops. Our support of 'members in training' relies on your support of the society. Please renew your IPS membership!! For the majority of IPS members the renewal will be due in January 2017.

We are also inviting nominations for honorary Lifetime Members of the IPS to be presented at the Banff meeting. Candidates should have a track record of accomplishments in the protease world and be friends of IPS. Please send names and a short case for support to Ulrich auf dem Keller (ipssecretary@gmail.com). A list of our Lifetime Members can be found at http://protease.org/LifetimeMembers.html.

Finally thanks to Sheena McGowan and Margarete Heck for preparing this issue of Quick Cuts. Enjoy reading!
Thomas Reinheckel, IPS President

COUNCIL OF THE INTERNATIONAL PROTEOLYSIS SOCIETY

Email addresses can be found in QuickCuts and at www.protease.org

MEETING REPORT

Metalloproteinases and their inhibitors: *beginning, past and future.*

4-5 August 2016, Keble College Oxford UK

This conference was held at Keble College, Oxford to the contribution of two leading figures in field, Professors Hideaki Nagase (University of Oxford) and Professor Gillian Murphy (University of Cambridge) upon their retirements and 70th birthdays. The meeting was co-organised by Yoshifumi Itoh (University of Oxford), Linda Troeberg (University of Oxford) and Jelena Gavrilovic (University of East Anglia), who have worked closely with Hideaki and Gill for many years. 100 delegates attended the meeting, including 14 invited speakers, 33 principal investigators and more than 40 graduate students and post-doctoral researchers. The meeting was international as invited speakers were from Canada, USA, Japan, Germany, Israel, Italy, and UK, and delegates were from USA, Brazil, Japan, Israel, Denmark, Finland, Belgium, Germany, Italy and UK.

Metalloproteinases are a large group of proteolytic enzymes that modify the microenvironment of cells and play crucial roles in tissue remodeling. Talks and posters covered a broad range of topics, reflecting the important role metalloproteinases playing in physiological processes such as development and immunity and also in pathophysiological settings such as cancer and arthritis. Evaluation of the enzymes as potential therapeutic targets or tools for diagnosis were highlighted by several speakers. Keynote presentations by Professors Nagase and Murphy stressed that understanding the fundamental biochemistry of metalloproteinases is a prerequisite for reaching their translational potential. An emerging theme was the role of metalloproteinases in subtle modulation of protein function. For example, Christopher Overall (University of British Columbia) and William C. Parks (Cedars-Sinai Medical Center) discussed how metalloproteinases regulate immune responses by processing cytokines, chemokines and matrix proteins.

Young scientists were well represented at the meeting, with 8 speakers selected from submitted abstracts. Simone D. Scilabra (Technische Universität München, Germany) won the oral presentation prize for his talk on development of a 'trap' to increase levels of the protective metalloproteinase inhibitor TIMP-3 in tissue. Pernille Søgaard (University of Oxford) and Kim Lemmens (KU Leuven) won the poster presentation prizes, for their work on the collagen receptor DDR1 and on axonal regeneration in zebrafish, respectively.

Feedbacks from delegates have been overwhelmingly positive, with attendees enjoying the opportunity to come together and celebrate Professors Nagase and Murphy's contribution to our field. Students were particularly benefited from the strong line-up of world-leading international speakers. The meeting provided the community with a valuable opportunity to reflect on the history of this field and to identify future research priorities.

Linda Troeberg
Yoshifumi Itoh
University of Oxford

IMPORTANT PROTEASE PAPERS I

Research Publications

AGONIST & INHIBITORS

Drinkwater, N., Vinh, VB., Mistry, SN., Bamert, RS., Ruggeri, C., Holleran, JP., Loganathan, S., Paiardini, A. Charman, SA., Powell, AK., Avery, VM., McGowan, S. & Scammells, PJ.

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A Golgi rhomboid protease Rbd2 recruits Cdc48 to cleave yeast SREBP.

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pp 30237-3.

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pp 30238-5.

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Inactive rhomboid proteins: new mechanisms with implications in health and disease.

pp 30184-7.

Dogga SK, and Soldati-Favre D.

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pp 30258-0.

Bondar AN.

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pp 30290-7.

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Special Issue: Proteolytic networks across cellular boundaries (IPS 2015 Special Issue)

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POSTDOCTORAL POSITION

IN PROTEASE BIOCHEMISTRY AND INHIBITION

HARVARD MEDICAL SCHOOL

NIH-funded project on the biochemistry and pharmacological modulation of γ-secretase, a membrane-embedded protease complex central to Alzheimer's disease, cancer biology, and developmental biology. Applicants must have a strong record of achievement in protein chemistry, enzymology and pharmacology. Experience in molecular and cell biology is also required. Candidates must be highly experienced in these specific areas, as demonstrated by journal publications. Send CV and contact information for 2 references to: **Michael Wolfe** or **Dennis Selkoe, Center for Neurologic Diseases, Brigham and Women's Hospital and Harvard Medical School, 4 Blackfan Street, Boston, MA 02115** or e-mail to: **mswolfe@partners.org** or **dselkoe@partners.org.**

What is on the cover?

A near atomic structure of the active human apoptosome (5JUY.PDB)
Tat Cheung Cheng, Chuan Hong, Ildiko V Akey, Shujun Yuan, Christopher W Akey.
eLife 2016; 5:e17755

In response to cell death signals, an active apoptosome is assembled from Apaf-1 and procaspase-9. The structure of the active human apoptosome was determined by cryo-EM.

THE OVERALL LAB
www.clip.ubc.ca

Post-Doctoral Position available in EXTRACELLULAR MATRIX and MOONLIGHTING PROTEASE DEGRADOMICS: IDENTIFICATION AND CHARACTERISATION OF NOVEL PROTEASE SUBSTRATES

OVERALL LAB, University of British Columbia, Vancouver BC, Canada.

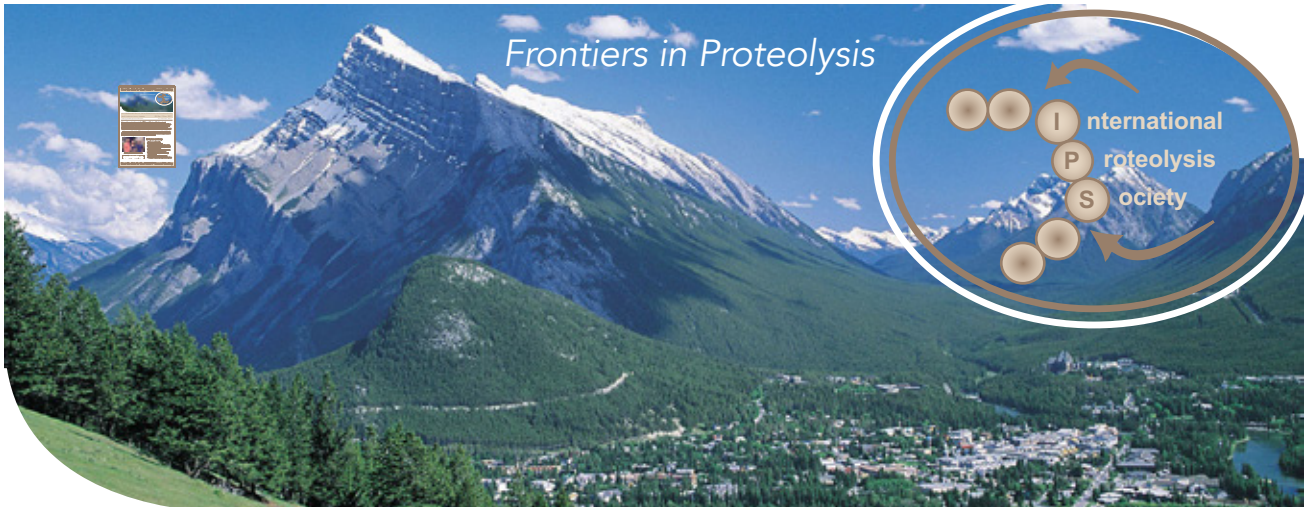
A postdoctoral position is available for a candidate to study novel substrates of proteases, in particular matrix metalloproteinases (MMPs). The OVERALL LAB has pioneered a number of cutting edge proteomics methods (degradomics: including **TAILS** (Nature Biotechnology, Nature Protocols), **C-TAILS** (Nature Methods, Nature Protocols), **PICS** (Nature Biotechnology), **TopFIND** database (Nature Methods)) for the analysis of protein termini and identification of protease substrates in healthy and diseased tissue (e.g. arthritis (Cell Reports), skin inflammation (Science Signaling), innate and acquired immunity (Nature Communications), and viral infection (Nature Medicine)). Moonlighting proteins that have canonical roles inside the cell that are secreted by non-conventional means are a priority. The candidate will elucidate the roles of these novel and unexpected substrates in cell regulation before and after proteolytic processing. Thus we will decipher how tissue pathologies, particularly inflammatory diseases, autoimmunity and immunodeficiencies, and cancer, are driven by proteases (*e.g.* MMPs, ADAMs, ADAMTS, cathepsins, viral proteases) and bioactive substrates that modulate signaling feedback loops with emphasis on connective tissues, the extracellular matrix and immune cells.

The candidate should have a practical background in protease biology, extracellular matrix biology, inflammation, and immunobiology. Experience in a variety of biological systems is an asset as the candidate will use biochemical methods, mammalian cell tissue culture and murine models to elucidate the roles of moonlighting proteins and the effects of proteolytic processing as well as determining whether cleavage creates new functions. Biological assays will include angiogenesis, chemotaxis, cell migration and invasion assays, proinflammatory cytokine production. Further characterization of the significance of proteolytic processing *in vivo* will be determined by developing selected reaction monitoring (SRM) assays and neoepitope antibodies to establish the prevalence of proteolytic processing in healthy and inflamed/diseased tissues using mass spectrometry, immunohistochemistry and by developing ELISA-type assays. It is anticipated that some of the identified proteoforms will be useful as biomarkers for disease diagnosis. A significant portion of the lab is dedicated to degradomics, utilizing and developing liquid chromatography tandem mass spectrometry techniques (LC-MS/MS). Thus there is the opportunity for the candidate to use proteomics to address the roles of moonlighting substrates and the applicant will be trained in this.

The lab is situated in the Centre for Blood Research (http://cbr.ubc.ca/) in the Life Sciences Centre (http://lsi.ubc.ca/) at the University of British Columbia in Vancouver.

Apply to chris.overall@ubc.ca, www.clip.ubc.ca

Save the date for the IPS 2017 General Meeting



10th GENERAL MEETING OF THE INTERNATIONAL PROTEOLYSIS SOCIETY

Banff Conference Centre, CANADA — 28 Oct.-1 Nov. 2017

Training workshops and seminars — 27-28 Oct. 2017

It is our pleasure to invite you to the 10th General Meeting of the International Proteolysis Society from 28 October to 1 November 2017, and early training workshops on the 27-28 October. The meeting will be held at the Kinnear Centre in Banff, in the middle of the Canadian Rockies. It is a splendid venue to be inspired, discuss with colleagues, forge new collaborations and see the best science from the proteolysis field.

Of course we will mark the 10th anniversary of our meeting in a special way! We look forward to seeing you in Banff, Alberta. Cowgirl or cowboy boots, belt buckle and bolo tie optional but highly recommended! We'll provide the hat!

Joanne, Jean-Bernard and Chris

www.IPS2017.org

Meeting topics (preliminary)

- Proteases in Immunity
- Protease Systems Biology
- Biologicals for Therapeutic Intervention
- Proprotein convertases and Metabolism
- Cancer and Metastasis
- Proteasome and ubiquitination systems
- Intracellular Proteolytic Systems
- Proteases in Developmental Biology
- Viral Proteases
- Membrane-Associated Proteolysis
- Proteases in bacteria, fungi and elsewhere

Save the date for the IPS 2017 General Meeting

ISK 2017

7 TH INTERNATIONAL SYMPOSIUM ON KALLIKREINS AND KALLIKREIN-RELATED PEPTIDASES

26 September – 29 September 2017
TOURS, FRANCE

Venue: Université F. Rabelais, 60 rue du Plat d'étain, Tours.

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SAVE THE DATE

Symposium on

Proteases and the Tumori Microenvironment

This will be the highlight of the year for the Proteases and Tumori Microenvironment aficionados! Save the date now!

24 - 26 July 2017
Monash University Prato Centre, Prato, Italy

Organisers:
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www.ProteasesinTiME.org

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