J-domain proteins: from molecular mechanisms to diseases

Third International Workshop of Cell Stress Society International (CSSI)

Wednesday, April 2nd	
18:30	Reception at the Novotel Gdańsk Marina Hotel

Thursday, April 3rd	
08:30 – 9:30	**Session I: Keynote lecture – chair Jaroslaw Marszalek**
08:30	Welcome speech by the Rector of the University of Gdansk
08:45	Elizabeth Craig (University of Wisconsin – Madison, USA) - *~ 50 years of Hsp70s and J-domain proteins*
09:30 – 10:30	**Session II: JDPs in transcriptional regulation – chair Harm Kampinga**
09:30	Sebastien Dementin (CNRS-BIP Aix-Marseille University, France) - *Towards a novel DnaK-dependent mechanism for the regulation of bacterial gene expression?*
10:00	Axel Mogk (Heidelberg University, Germany) - *An array of J-domain proteins provide synergistic control of yeast Hsf1 at distinct phases of the heat shock response*
10:30 – 11:00	Group photo & Coffee break
11:00 – 13:00	**Session III: JDPs in Translation- chair Harm Kampinga**
11:00	Sabine Rospert (University of Freiburg, Germany) - *Interplay between the components of the yeast ribosome-bound chaperone triad*
11:30	David Balchin (The Francis Crick Institute, London, UK) - *Chaperone coordination at the translating ribosome*
12:00	Bernd Bukau, Koji Ishikawa, Paraskevi Kritsiligkou, Tobias P. Dick, Guenter Kramer (Heidelberg University, Germany) - *Profiling of the nascent chain interactome of the ribosome-associated complex RAC reveals role in redox regulation of yeast cells*
12:30	Claes Andreasson (Stockholm University, Sweden) - *Dedicated chaperone for eEF1A at the ribosome unburdens the Hsp70 system*
13:00 – 14:00	Lunch
14:00 – 15:30	**Session IV: JDPs in the ER & Mitochondria – 1- chair Pierre Genevaux**
14:00	Jeffrey Brodsky (University of Pittsburgh, USA) - *The intersection of Hsp40 and protein ubiquitination on decision-making process in the endoplasmic reticulum*
14:30	Douglas Cyr (University of North Carolina, USA) - *Triage of dominantly toxic membrane proteins by DNAJB12*
15:00	Ryo Ushioda and Kasai Ayano (Kyoto Sangyo University, Japan) - *ERdj8 orchestrates autophagy by regulating isolation membrane elongation*
15:30 - 16:00	Coffee break
16:00 – 17:30	**Session V: JDPs in the ER & Mitochondria – 2 – chair Pierre Genevaux**
16:00	David Ron (University of Cambridge, UK) - *Regulating BiP's responsiveness to JDP stimulation by its reversible AMPylation/deAMPylation – an update*
16:30	Dejana Mokranjac (LMU Munich, Germany) - *The mitochondrial protein import motor*
17:00	Christian Munch (University of Frankfurt, Germany) - *DNAJA1 as a guardian of mitochondrial proteostasis*

17:30 – 19:00	**Dinner at the Hotel**
19:00 – 20:30	**Session VI: JDPs in the ER & Mitochondria – 3- Pierre Genevaux**
19:00	Thomas Becker (University of Bonn, Germany) - *The function of J-domain proteins in mitochondrial protein biogenesis*
19:30	Fabian den Brave (University of Bonn, Germany) - *Role of a J-domain protein in the quality control of mitochondrial protein biogenesis*
20:00	Jaroslaw Marszalek (University of Gdansk, Poland) - *Molecular bases of a shift in client binding specificity revealed by phylogeny based ancestral sequence reconstruction of an Hsp70 specialized in FeS biogenesis*
20:30 – 21:00	**Topic Discussion -1**: JDP classification and domain organization chairs: Rina Rosenzweig/Jaroslaw Marszalek

Friday, April 4th	
08:30 – 10:30	**Session VII: JDP-JDP interactions, disaggregation and entropic pulling – 1- chair Jaroslaw Marszalek**
08:30	Matthias Mayer and Veronika Lashkul (Heidelberg University, Germany) - *Functional significance of the dimeric state of J-domain proteins*
09:00	Chandan Sahi (Indian Institute of Science Education and Research Bhopal, India) - *Dosage compensation of Caj1-induced cytotoxicity by Sis1 and Ydj1.*
09:30	Pierre Goloubinoff (University of Lausanne, Switzerland) - *Hsp110 is boosting HSP70-JDP's disaggregation activity by super-entropic pulling strokes*
10:00	Paolo De Los Rios (Ecole Polytechnique Federale de Lausanne, Switzerland)- *Single molecule demonstration of Entropic Pulling*
10:30 – 11:00	Coffee break
11:00 – 13:00	**Session VIII: JDP-JDP interactions, disaggregation and entropic pulling – 2 - chair Jaroslaw Marszalek**
11:00	Krzysztof Liberek (University of Gdansk, Poland) - *J-domain proteins and Hsp110 NEF in protein refolding from aggregates*
11:30	Anne Wentink (Leiden University, The Netherlands) - *Disaggregation of α-synuclein amyloid fibres by the human HSP70 chaperone*
12:00	Kate Hyun Lee (University of Toronto, Canada) - *ATP-driven remodeling of biomolecular condensates by human molecular chaperones*
12:30	Harm Kampinga (University Medical Center Groningen, The Netherlands) - *DNAJ involvement in disposal of aggregates*
13:00 – 14:00	Lunch
14:00 – 16:00	**Session IX: JDP-networks – chair Janine Kirstein**
14:00	Gregory Blatch (Notre Dame University, Australia) - *The chaperone partnerships of Plasmodium knowlesi, a zoonotic malaria parasite of humans*
14:30	Jason Gestwicki (University of California San Francisco, USA) - *Protein-protein interactions with J-domain proteins*
15:00	Reut Shalgi (Technion, Israel) - *Probing the chaperone network complexity*
15:30	Kausik Si (Stowers Institute for Medical Research, USA) - J-*domain proteins as a transducer of sensory experiences*
16:00 – 16:30	Coffee break
16:30 – 18:00	**Session X: Specialized JDP systems - chair Janine Kirstein**
16:30	Colin Hammond (University of Liverpool, UK) - *DNAJC9 integrates heat shock molecular chaperones into the histone chaperone network*
17:00	Janice Braun (University Calgary, Canada) - *Cellular Export of DnaJC5.*
17:30	Johannes Buchner (Technical University Munich, Germany) - *Evolution of JDP dependence in the Hsp90 chaperone system*
18:00	**Free time – dinner on your own**

Saturday, April 5th	
08:30 – 10:30	**Session XI: JDPs in protein aggregation disseases – 1 – chair Paolo De Los Rios**

08:30	Sara Linse (University of Lund, Sweden) - *Towards a thermodynamic understanding of solubility enhancement*
09:00	Pierre Genevaux (CNRS, Toulouse University, France) - *Directed evolution of DNAJ towards aggregation-prone peptides*
09:30	Bartlomiej Tomiczek (University of Gdansk, Poland) - *Phylogeny and ancestral sequence reconstruction support multiple origins of class B JDPs, including those involved in amyloid disaggregation*
10:00	Lukasz Joachimiak (University of Texas Southwestern Medical Center, Dallas, USA) - *JDP-based regulation of amyloid assembly in neurodegenerative diseases*
10:30 – 11:00	Coffee break
11:00 – 13:00	**Session XII: JDPs in protein aggregation disseases – 2 - chair Paolo De Los Rios**
11:00	Janine Kirstein (Fritz Lipmann Institute, Jena, Germany) - *Regulation of the HTT folding landscape by Hsc70, DNAJB1 and Apg*
11:30	Michael Cheetham (University Collage London, UK) - *DNAJ proteins in ALS/FTD*
12:00	Martin Duennwald (University of Western Ontario, London, Canada) - *DnaJC7 chaperones ALS-associated protein misfolding and oxidative stress*
12:30	Anita Manogaran (Marquette University, USA) - *Exploring the role of J domain protein chaperones on the aggregation of Transthyretin using a yeast model.*
13:00 – 14:00	Lunch
14:00 – 15:30	**Session XIII: JDP mutants and disease – chair Jaroslaw Marszalek**
14:00	Conrad Weihl (Washington University, USA). - *Pathogenic mechanisms of DNAJB proteins in myopathy and muscular dystrophy*
14:30	Rina Rosenzweig (Weizmann Institute of Science, Israel) - *Molecular mechanisms of DNAJC12: from structure to disease*
15:00	Paul Chapple (Queen Mary University of London, UK) - *DNAJ proteins in cerebellar ataxias*
15:30 – 16:00	Coffee break
16:00 – 17:00	**Session XIV: Conformational landscapes of JDPs - chair Jaroslaw Marszalek**
16:00	Alessandro Barducci (CNRS, Montpellier University, France) - *Unraveling JDP conformational landscapes: insights from molecular simulations*
16:30	Yajun Jiang (Nanjing University, China) - *Conformational landscape of G/F-rich region of Hsp40s*
17:00 – 18:00	**Topic discussion-2**: JDPs as druggable targets – targeting JDP-Hsp70 and/or JDP-client interactions – chair Harm Kampinga/Paolo De Los Rios
18:30 – 20:30	**Gala Dinner**

Sunday, April 6th	
08:30	Departure