

Scientific Program

20 MAY - MONDAY

- 13.00-14.00** **Registration**
- 14.00-14.10** **Welcome and Opening remarks**
- 14.10-15.30** **Structural biology**
Chair: Ivan Matic
- 14.10-14.30 O01
Improved methodology for the chemical synthesis of oligo-ADPr-chains
Qiang Liu¹, Gijsbert van der Mare¹, Dmitri V. Filippov¹
¹*Leiden University, Leiden Institute of Chemistry, Netherlands*
- 14.30-14.45 O02
Targeting the substrate binding domains of tankyrase to probe its functions in cell signalling and telomere maintenance
Katie Pollock^{1,2}, Manjuan Liu², Mariola Zaleska¹, Mirco Meniconi², Mark Pfuhl³, Ian Collins², Sebastian Guettler¹
¹*The Institute of Cancer Research (ICR), Divisions of Structural Biology & Cancer Biology, United Kingdom;* ²*The Institute of Cancer Research (ICR), Division of Cancer Therapeutics, United Kingdom;* ³*King's College London, School of Cardiovascular Medicine and Sciences & Randall Centre, United Kingdom*
- 14.45-15.00 O03
Analyzing the molecular interplay of the tumor suppressor protein p53 with DNA and poly(ADP-ribose) by ATR-FTIR spectroscopy
Annika Krüger¹, Anna Stier¹, Arthur Fischbach¹, Alexander Bürkle¹, Karin Hauser¹, Aswin Mangerich¹
¹*University of Konstanz, Germany*
- 15.00-15.15 O04
Engineered Af1521 macro domain exhibits enhanced affinity towards Serine-ADP-ribosylated proteins
Kathrin Nowak^{1,2}, Florian Rosenthal¹, Deena Leslie Pedrioli¹, Mareike Bütepage³, Birgit Dreier⁴, Jens Sobek⁵, Andreas Plückthun⁴, Herwig Schüler⁶, Bernhard Lüscher³, Michael Hottiger¹
¹*Department of Molecular Mechanisms of Disease, University of Zurich, Switzerland;* ²*Molecular Life Science PhD Program of the Life Science Zurich Graduate School, University of Zurich, Switzerland;* ³*Institute of Biochemistry and Molecular Biology, RWTH Aachen University, Germany;* ⁴*Department of Biochemistry, University of Zurich, Switzerland;* ⁵*Functional Genomics Center Zurich, ETH Zurich and University of Zurich, Switzerland;* ⁶*Department of Medical Biochemistry and Biophysics, Karolinska Institute, Sweden*
- 15.15-15.30 O05
Structural insights into non-canonical PARP domains from plants
Raffaella De Masi¹, Mark Banfield², Lennart Wirthmueller¹
¹*Free University of Berlin, Dahlem Centre of Plant Sciences, Germany;* ²*John Innes Centre, Dept. of Biochemistry, United Kingdom*

- 15.30-15.50 *Coffee break*
- 15.50-17.40** **Signal transduction**
Chair: Ivan Ahel
- 15.50-16.35 O06
EMBO Young Investigator Lecture: Serine ADP-ribosylation signaling
Ivan Matic¹
¹*Max Planck Institute for Biology of Ageing, Germany*
Introduction: Peter Bai
- 17.00-17.20 O07
PARP1 regulates genotoxic stress-induced nucleolar-nucleoplasmic shuttling of WRN and XRCC1 in a DNA-damage and protein-specific manner
Marina Engbrecht¹, Andrea Schink¹, Sebastian Veith¹, Matthias Mack¹, Lisa Rank¹, Pascal Rossatti¹, Mariam Hakobyan¹, Tanja Hefele¹, Marco French¹, Denise Goly¹, Arthur Fischbach¹, Alexander Bürkle¹, Aswin Mangerich¹
¹*University of Konstanz, Department of Biology, Germany*
- 17.20-17.40 O08
Poly(ADP-ribose) polymerases in energy balance and autophagy
Lilla Nagy¹, Boglárka Rauch¹, Jankó Laura¹, Gyula Ujlaki¹, Endre Kristof¹, Peter Bai¹
¹*University of Debrecen, Hungary*
- 19.00-21.00 Ship on the Danube

21 MAY - TUESDAY

09.00-10.35

Mono-ADPR I

Chair: Mathias Ziegler

09.00-09.20

O09

PARP12-dependent mono-ADP-ribosylation as a central event in intracellular membrane traffic

Giovanna Grimaldi¹, Annunziata Corteggio¹, Laura Schembri¹, Daniela Spano¹, Matteo Lo Monte¹, Andrea Rosario Beccari^{1,2}, Carmen Valente¹ and Daniela Corda¹

¹*Institute of Protein Biochemistry, National Research Council, Naples, Italy;*

²*Dompé Farmaceutici SpA Research Center, L'Aquila, Italy*

09.40-10.00

O10

Uncovering Cellular ADP-Ribosylation Signaling and Function

Ann-Katrin Hopp¹, Lavinia Bisceglie¹, Kathrin Nowak¹, Deena M. Leslie Pedrioli¹, Anna Howald¹, Jeannette Abplanalp¹, Mario Leutert¹, Michael O. Hottiger¹

¹*University of Zurich, Department of Molecular Mechanisms of Disease, Switzerland*

10.00-10.20

O11

The ADP-ribosyl-hydrolase MacroD1 regulates mitochondrial DNA replication

Flavia Söllner¹, Aurelio Pio Nardoza¹, Christiane Kotthoff¹, Fabian Hosp², Francesca Sacco², Kai Hell¹, Fabiana Perocchi³, Matthias Mann², Andreas Ladurner¹

¹*Ludwig-Maximilians-University of Munich, Biomedical Center, Germany;* ²*Max Planck Institute of Biochemistry, Germany;* ³*LMU GeneCenter, Germany*

10.20-10.35

O12

Enabling Drug Discovery for the PARP Protein Family through the Detection of Mono-ADP-Ribosylation

Alvin Z Lu¹, Ryan Abo¹, Yue Ren², Bin Giu¹, Jason Mo¹, Danielle Blackwell², Tim Wigle², Heike Keilhack¹, Mario Niepel¹

¹*Ribon Therapeutics, Biological Sciences, United States;* ²*Ribon Therapeutics, Molecular Discovery, United States*

10.35-10.55

Coffee break

10.55-12.10

Mono-ADPR II

Chair: Daniela Corda

10.55-11.15

O13

Function and regulation of cellular and viral macrodomain mono-ADP-ribosylhydrolases

Bernhard Lüscher¹, Mareike Bütepage¹, Laura Ecke¹, Karla Feijs¹, Sarah Krieg¹, Patricia Verheugd¹, Maud Verheirstraeten¹, Roko Zaja¹

¹*Uniklinik RWTH Aachen, Institut of Biochemistry and Molecular Biology, Germany*

- 11.15-11.35 O14
PARP12-catalysed ADP-ribosylation in the control of exocytosis
Giovanna Grimaldi¹, Laura Schembri¹, Daniela Spano¹, Matteo Lo Monte¹, Andrea Rosario Beccari², Carmen Valente¹, Daniela Corda¹
¹National Research Council, Institute of Protein Biochemistry, Italy; ²Dompe' Farmaceutici SpA, Italy
- 11.35-11.55 O15
Truncated PARP1 activates RNA Polymerase III during apoptosis
Xiaochun Yu¹, Qian Chen¹
¹City Of Hope, United States
- 11.55-12.10 O16
Role of NAD⁺ and AcylCoA in the fission of Golgi membrane mediated by the protein "brefeldin-A ADP-ribosylated substrate" (BARS)
Carmen Valente¹, Stefano De Tito¹, Angela Filograna¹, Mikhail A. Zhukovsky¹, Alberto Luini¹, Daniela Corda¹
¹Institute of Protein Biochemistry, CNR, Italy
- 12.10-13.30 Lunch
- 13.30-14.30 **Flash session**
Chair: Peter Bai
- P01
Human alcohol dehydrogenase 1 is an acceptor protein for polyADP-ribosylation
Masanao Miwa
- P02
TIPARP via its mono-ADP-ribosylation activity negatively regulates AHR activity and protects against persistent environmental pollutant toxicity
Giulia Grimaldi
- P03
Inhibitory activity on the BCR-NFAT pathway by PARG inhibitor MO2455
Takae Onodera
- P04
The roles of PARP-1 in UV-B-induced inflammasome activation and skin damage
Wan-Wan Lin
- P05
Overlapping regulation of gene expression by PARP1 and p63 in cutaneous squamous cell carcinoma
Marco Ferniani
- P06
System-wide investigation of crosstalk between ADP-ribosylation and SUMOylation by mass spectrometry
Ivo A Hendriks

P07

Reciprocal Crosstalk between RNF168 and PARP1 to Regulate Genomic Stability
Soyeon Kim

P08

PARP12-dependent mono-ADP-ribosylation of Rab14: implications in the control of intracellular membrane trafficking
Annunziata Corteggio

P09

Poly(ADP-ribose) structural diversity influences gene expression in response to genotoxic stress
Julia M Reber

P10

Silencing of PARP2 induces autophagy
Laura Jankó

P11

Analogies between plant and animal immune systems, and hijacking of ADP-ribosylation by effectors
Palmiro Poltronieri

P12

Vascular Dysfunction And Polycystic Ovary Syndrome: the Integrated Effects of Steroid Hormones on Nitrate Stress and Poly(ADP-ribosylation)
Rita Benkó

P13

Discovery of compounds inhibiting the ADP-ribosyltransferase activity of pertussis toxin
Arto T Pulliainen

P14

Strategies to investigate the interplay between histone Ser-ADPr and other marks
Juan Jose Bonfiglio

P15

Comparison of enrichment strategies for the in-depth proteomics analysis of ADP-ribosylation sites
Alexandra Stripp

P16

Unravelling the physiological functions of the mono(ADP-ribosyl)hydrolases MacroD1, MacroD2 and TARG1
Karla Feijs

P17

RNA – a novel substrate of bacterial ADP-ribosyltransferases
Petra Mikolcovic

P18

A novel assay for PARP-DNA trapping provides insights into the mechanism of action (MoA) of clinical PARP inhibitors (PARPi)

Giuditta Illuzzi

P19

Insight into DNA substrate specificity of PARP1 catalyzed DNA poly(ADP-ribosylation)

Elie Matta

P20

Dysfunction of DUSP22 induces synthetic lethal effects under the knockdown condition of poly(ADP-ribose) glycohydrolase (PARG) in lung cancer cell lines

Yuka Sasaki

P21

Role of PARP3 and its interaction with the chromatin complex G9a/Wiz/GLP1 in glioblastoma

Leonel Nguekeu Zebaze

P22

Development Of Small Molecule Inhibitors Against Potential Cancer Drug Targets - Human Mono-ADP-Ribosyltransferases

Sudarshan Narasimha Murthy

P23

Oligomeric state dependence of Tankyrase activity

Albert Galera Prat

P24

Inhibition of PARP provides greater cardioprotection in mice with heart failure

Manami Katoh

P25

An advanced strategy for comprehensive profiling of ADP-ribosylation sites using mass spectrometry-based proteomics

Sara C. Larsen

P26

Base excision repair through ADP-ribosylation of DNA by PARP3 protein

Ekaterina Belousova

P27

Biochemical characterization of plant PARP proteins and their role in stress responses

Sebastian Hosch

P28

Macrodomain protein from Streptomyces coelicolor - SCO6735 reverses T-linked DNA ADP-ribosylation

Andrea Hloušek-Kasun

P29

PARP inhibitor sensitization by deregulated PARP1 turnover

Marco Gatti

P30

Multiple tumour types show defective homologous recombination DNA repair (HRR) function in chemo-naïve and chemo-resistant settings

Lucy Gentles

P31

Processing of trapped PARP1 lesions in Xenopus egg extracts

Ulrike Kühbacher

P32

Cancelled registration

P33

Functional characterization of non-canonical PARP proteins from plants

Raffaella De Masi

P34

Defective homologous recombination DNA repair in endometrial cancer confers sensitivity to Niraparib

Dominic Adam Blake

P35

PARP inhibition increases replication stress in models of high risk neuroblastoma and synergises with inhibition of ATR

Harriet E D Southgate

Poster session with wine and cheese

22 MAY - WEDNESDAY

- 09.00-09.45** O17 - Keynote talk
Unconventional Phosphoribosyl-dependent Serine Ubiquitination
Ivan Dikic¹
¹Goethe University, Frankfurt, Germany
Introduction: Ivan Matic
- 09.45 – 11.00** PAR metabolism
Chair: José Yelamos
- 09.45-10.10 O18 – Invited talk
Turnover and functional compartmentation of cellular NAD pools
Mathias Ziegler¹
¹University of Bergen, Department of Biomedicine, Norway
- 10.10-10.30 O19
ELTA: Enzymatic Labeling of Terminal ADP-ribose
Anthony K. L. Leung¹
¹Johns Hopkins University, United States
- 10.30-10.45 O20
Mitochondrial ADP-ribosylation regulates subcellular NAD⁺ levels
Ann-Katrin Hopp¹, Federico Teloni¹, Deena Leslie Pedrioli¹, Matthias Altmeyer¹,
Michael O. Hottiger¹
¹University of Zuerich, DMMD, Switzerland
- 10.45-11.00 O21
Mapping the ADP-ribosylome using quantitative mass spectrometry
Michael L Nielsen¹, Sara C. Larsen¹, Ivo A. Hendriks¹
¹University of Copenhagen, Proteomics Program, Denmark
- 11.00-11.20 *Coffee break*
- 11.20 – 12.50** DNA repair
Chair: Nicola Curtin
- 11.20-11.50 O22 – Invited talk
Specificity of ADP-ribosylation reactions
Ivan Ahel¹
¹University of Oxford, United Kingdom
- 11.50-12.05 O23
The role of PARP1 in coordinating transcription and repair at DNA damage sites
Samah Awwad¹, Enas Abu-Zhayia¹, Bella Ben-Oz¹, Noga Guttmann-Raviv¹, Nabieh Ayoub¹
¹Technion -Israel Institute of Technology, Israel
- 12.05-12.20 O24
Poly(ADP-ribose)-dependent chromatin unfolding facilitates the association of weak DNA-binding motifs with DNA at sites of damage
Rebecca Smith¹, Szilvia Juhász², Gyula Timinszky², Sébastien Huet¹
¹University of Rennes 1, Institut de Génétique et Développement de Rennes, France; ²Biological Research Center of the Hungarian Academy of Sciences, Institute of Genetics, Hungary

- 12.20-12.35 O25
A single-molecule atomic force microscopy studies of the recognition DNA intermediates generated during base excision repair by PARP1 and PARP2
Maria V. Sukhanova¹, Loic Hamon², Vandana Joshi², Mikhail M. Kutuzov¹, Svetlana N. Khodyreva¹, David Pastre², Olga I. Lavrik¹
¹*Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of the Russian Academy of Sciences (ICBFM SB RAS), Laboratory of Bioorganic Chemistry of Enzymes, Russia;* ²*Université Evry, SABNP, NSERM U1204, France*
- 12.35-12.50 O26
Evaluating PARP inhibitor cytotoxicity beyond mutations in BRCA1/2
 Michelena Jone¹, Marco Gatti¹, Ralph Imhof¹, Matthias Altmeyer¹
¹*University of Zurich, Switzerland*
- 12.50-14.15 *Lunch*
- 14.15 – 16.35 **Pathophysiology**
Chair: Ivan Dikic
- 14.15-14.45 O27 – Invited talk
Poly(ADP)polymerase 1 drives alcoholic and nonalcoholic steatohepatitis and fibrosis
Pal Pacher
NIH, NIAAA, Bethesda, United States
- 14.45-15.15 O28
PARPs, NAD⁺, ADP-ribose, and the Control of Transcription and Translation
W. Lee Kraus¹, Dan Huang¹, Sridevi Challa¹, Aarin James¹, Keun Woo Ryu¹
¹*UT Southwestern Medical Center, Green Center for Reproductive Biology Sciences, United States*
- 15.15-15.35 O29
PARP-1/PARP-2 double deficiency in mouse B cells results in impair homeostasis and faulty immune responses
Jose Yelamos¹, Miguel A Galindo-Campos¹, Marie Bedora-Faure², Chloé Lescale², Lucia Moreno-Lama¹, Juan Martin-Caballero¹, Coral Ampurdanés¹, Françoise Dantzer³, Andrea Cerutti¹, Ludovic Deriano²
¹*Fundació Institut Mar d'Investigacions Mèdiques, Spain;* ²*Institu Pasteur, Genome Integrity, Immunity and Cancer, France;* ³*Centre National de la Recherche Scientifique, Biotechnology and Cell Signalling, France*
- 15.35-15.50 O30
Recent advances on neuroprotective effect of PARP inhibition in retinal degeneration
Ayse Sahaboglu¹, Lorena Vidal-Gil², Maria Miranda³, Javier Sancho-Pelluz², Eberhart Zrenner¹
¹*Tubingen University, Institute for Ophthalmic Research, Germany;* ²*Catholic University, School of Medicine, Spain;* ³*Universidad CEU Cardenal Herrera, Spain*

15.50-16.05

O31

Chromatin ADP-ribosylation is induced during fibroblast to myoblast trans-differentiation and regulates a subset of MyoD-dependent gene expression

Lavinia Bisceglie¹, Ann-Katrin Hopp¹, Kapila Gunasekera¹, Pier Lorenzo Puri², Roni Wright³, Miguel Beato del Rosal³, Michael O. Hottiger¹

¹University of Zurich, DMMD, Switzerland; ²Sanford Burnham Prebys Medical Discovery Institute, United States; ³Centre for Genomic Regulation (CRG), Spain

16.05-16.35

O32 – Invited talk

A novel PARPi PET imaging tracer

Lilie Lin

University of Texas, MD Anderson Cancer Center

23 MAY – THURSDAY

- 09.00-09.45** O33 - Clinical keynote talk
The Evolution of PARP inhibitors: From Bench to Bedside and Back Again...
Yvette C Drew¹
¹*Northern Centre for Cancer Care, Newcastle-upon-Tyne NHS Foundation Trust, Northern Institute for Cancer Research, Newcastle University, UK, Medical Oncology, United Kingdom*
Introduction: Nicola Curtin
- 09:45 – 10:40** Translation I.
Chair: Pal Pacher
- 09.45-10.05 O34
Preclinical and translational studies leading to the development of rucaparib (Rubraca™)
Nicola Curtin
Newcastle University
- 10.05-10.25 O35
Correlation of homologous recombination deficiency induced mutational signatures with sensitivity to PARP inhibitors and cytotoxic agents
Dávid Szüts¹
¹*MTA TTK Institute of Enzymology, Hungary*
- 10.25-10.40 O36
Implementing high-content screening techniques in stratifying patient for Rucaparib treatment
Nadav Dekel¹
¹*university of Debrecen, Faculty of Medicine, Hungary*
- 10.40-10.55 *Coffee break*
- 10:55 – 12:10** Translation II.
Chair: Yvette Drew
- 10.55-11.15 O37
Lead optimization of a catalytic tankyrase inhibitor and high throughput screening assays for the discovery of tankyrase scaffolding inhibitors
Sven Sowa¹, Jo Waaler², Nieczypor Piotr³, Carlos Vela Rodriguez¹, Albert Galera Prat¹, Alexander Ignatev¹, Upendra Rao Anumala⁴, Anita Wegert³, Ruben Leenders³, Marc Nazaré⁴, Stefan Krauss², Lari Lehtiö¹
¹*University of Oulu, Faculty of Biochemistry and Molecular Medicine, Finland;*
²*University of Oslo and Oslo University Hospital, Hybrid Technology Hub - Centre of Excellence, Norway;* ³*Mercachem bv, Netherlands;* ⁴*Leibniz-Forschungsinstitut für Molekulare Pharmakologie, Germany*
- 11.15-11.35 O38
Exploring the synergy between PARP and CHK1 inhibition in human ovarian and cervical cancer cells
Hannah L Smith¹, Nicola Curtin¹
¹*Northern Institute for Cancer Research, United Kingdom*

11.35-11.50

O39

A vital role for PARP-1 in the cellular response to high-LET protons

Rachel Carter¹, Catherine Nickson¹, Andrzej Kacperek², Mark Hill³, Jason Luke Parsons¹

¹University of Liverpool, United Kingdom; ²Clatterbridge Cancer Centre NHS Foundation Trust, United Kingdom; ³University of Oxford, United Kingdom

11.50-12.10

Closing remarks

11.10-13.30

Lunch