



EMBO Workshop

**PATHOGEN
IMMUNITY AND
SIGNALING**

**San Servolo Island, Venice
April 8-12, 2024**

ORGANISERS

- Matteo Iannaccone** *San Raffaele Scientific Institute, Italy*
Mads Gyrd-Hansen *University of Copenhagen, DK*
Anna Kajaste-Rudnitski *University of Pavia, IT*
Nicolas Manel *Institut Curie, FR*
Jan Rehwinkel *Oxford University, UK*
Annemarthe van der Veen *Leiden University Medical Centre, NL*

FACULTY

- Tal Arnon** *Kennedy Institute of Rheumatology, UK*
Gordon Brown *University of Exter, UK*
Kathrin de la Rosa *Max Delbrück Center, DE*
Ivan Dikic *Institute of Biochemistry, DE*
Melanie Hamon *Institut Pasteur, FR*
Jean-Luc Imler *Institute of Molecular and Cell Biology, FR*
Anna Kajaste-Rudnitski *University of Pavia, IT*
Cecile King *University of New South Wales, AU*
Wolfgang Kastentmüller *University of Würzburg, DE*
Antonio Lanzavecchia *INGM, IT*
Mala Maini *University College London, UK*
Andrew Oberst *University of Washington, USA*
Charlotte Odendall *King's College London, UK*
Marion Pepper *University of Washington, USA*
Jessica Quintin *Institut Pasteur, FR*
Angelika Rambold *Max Planck Institute, DE*
Manuele Rebsamen *University of Lausanne, CH*
David Sancho *Spanish National Center for Cardiovascular Research, ES*
Leif Sander *Charité Universitätsmedizin, DE*
Rotem Sorek *Weizmann Institute of Science, IL*
Annemarthe van der Veen *Leiden University Medical Center, NL*
Ivan Zanoni *Boston Children's Hospital, USA*
Franklin L. Zhong *Skin Research Institute, SG*

SCIENTIFIC PROGRAM

Monday, April 8, 2024

18.30-18.45 Opening remarks

Keynote Session

Chair: Matteo Iannacone

18.45-19.30 Keynote Lecture

"Broadly neutralizing antibodies and beyond"

Antonio Lanzavecchia

19.30 Welcome reception

Tuesday, April 9, 2024

Session 1: Pathogenesis

Chair: Anna Kajaste-Rudnitski

09.00-09.25 Connecting mitochondrial metabolism and myeloid cell function
David Sancho

09.25-09.50 Innate immune control of inflammation
Ivan Zanoni

09.50-10.15 Therapeutic targeting of myeloid cells in acute respiratory infections
Leif Sander

Short talks selected from abstracts

- 10.15-10.30 Unraveling the dynamics of HBs-specific B cells in a mouse model of HBV pathogenesis
Cristian Gabriel Beccaria
- 10.30-10.45 Dissecting the impact of enteric viral-bacterial co-infection on the host innate immune response and its implications for pathogenicity
Philipp Walch
- 10.45-11.15 Coffee break

Session 2: Molecular mechanisms of infection and inflammation

Chair: Jan Rehwinkel

- 11.15-11.40 Inflammation and cell death
Andrew Oberst
- 11.40-12.05 Investigating pathogen sensing and innate immune signalling in cells of the central nervous system
Anna Kajaste-Rudnitski

Short talks selected from abstracts

- 12.05-12.20 Molecular mechanism of human ZBP1 activation and induction of antiviral necroptosis during HSV-1 infection
Josephine Nemegeer
- 12.20-12.35 IKK α is required for SARS-CoV-2 entry independently of the NF- κ B pathway
Anqi Wang

Flash talks selected from abstracts

- 12.35-12.38 Unraveling the role of RNA binding E3 ligase TRIM25 in innate immunity
Agnieszka Bolembach

- 12.38-12.41 IFN-inducible phospholipid scramblase 1 (PLSCR1) modulates SARS-CoV-2 entry in a TMPRSS2-dependent manner
Shan-Lu Liu
- 12.41-12.44 Unintegrated HIV-1 DNA chromatinization prevents its sensing by cGAS
Suzie Thenin-Houssier
- 12.44-12.47 A novel immune checkpoint pathway that impairs CD8+ T-cell responses against influenza virus
Yotam Bar-On
- 12.47-12.50 RNF213 as a nucleotide-regulated, pathogen sensing E3 ligase
Lillie Bell
- 13.00-15.00 **Poster Session I**
Odd Numbered Posters Presented
- Lunch
- Session 3: Fungal immunity**
Chair: Mélanie Hamon
- 15.00-15.25 Autoimmunity and immunity to fungal infection – a new link
Gordon Brown
- 15.25-15.50 Fungal β -glucan and the regulation of innate immune responses
Jessica Quintin
- Short talks selected from abstracts**
- 15.50-16.05 Role of danger and microbial signals in neutrophil subpopulations recruitment during infection
Giulia Stucchi

16.05-16.20 Development and integrin-dependent migration of cDC1
in a distinct perivascular niche of the splenic red pulp
Reuben Jacob Labios

16.20-17.00 Coffee break

Session 4: Genetic basis of immunity and pathogenicity

Chair: Mads Gyrd-Hansen

17.00-17.25 EMBO Young Investigator Lecture
The tale of two inflammasomes in human skin
Franklin L. Zhong

17.25-17.50 Pathophysiological role of the TLR7/9-SLC15A4-TASL
pathway in (auto)immunity
Manuele Rebsamen

Short talks selected from abstracts

17.50-18.05 Type I interferonopathy-associated mutations in ARF1
allow insight on STING activation and recycling
Maximilian Hirschenberger

18.05-18.20 TLR4 endocytosis is dissociable from Type I IFN expression,
and requires TLR4 activity and ubiquitination machinery
Antje Blumenthal

18.30 Meet-The-Speaker/Editor Dinner

Wednesday, April 10, 2024

Session 5: Antimicrobial immunity across the tree of life

Chair: Nicolas Manel

09.00-09.25 Bacterial immunity to viral infection
Rotem Sorek

09.25-09.50 cGAS/STING-dependent immunity: insights from *Drosophila*
Jean-Luc Imler

09.50-10.15 Retrotransposons regulate the immune response to virus infection
Cecile King

Short talks selected from abstracts

10.15-10.30 Conservation of antiviral systems across domains of life reveals novel immune mechanisms in humans
Enzo Poirier

10.30-10.45 Noncanonical contribution of human Dicer helicase in antiviral innate immune response
Sébastien Pfeffer

10.45-11.15 Coffee break

Session 6: B cell immunity

Chair: Matteo Iannacone

11.15-11.40 Resident memory B cells
Tal Arnon

11.40-12.05 Antibody diversity
Kathrin de la Rosa

Short talks selected from abstracts

- 12.05-12.20 Rapidly responsive CD73+CD80+ memory B cells are BCL6-dependent but can form outside a germinal center response
Gretchen Pritchard
- 12.20-12.35 Mast cells help organize the Peyer's patch niche for induction of IgA responses
Marco De Giovanni

Flash talks selected from abstracts

- 12.35-12.38 The role of mitochondrial inheritance in the early rise of asymmetric T cell fates
Mariana Borsa
- 12.38-12.41 Sensing of microbial viability orchestrates the metabolic recycling of engulfed bacteria in macrophages
Johan Garaude
- 12.41-12.44 Investigating the mechanism of detection of HIV in the nucleus through NONO-cGAS
Margaret Jackson
- 12.44-12.47 Maternal vaccine candidate targeting extracellular GAPDH prevents Group B Streptococcus or Staphylococcus aureus neonatal infections
Filipa Lemos
- 12.47-12.50 HOIL1 E3 ubiquitin ligase activity regulates MDA5 signaling and interferon induction
Donna Macduff

- 13.00-15.00 **Poster Session II**
Even numbered Posters Presented

Lunch

- 15.00-18.00 Social afternoon
On own for dinner

Thursday, April 11, 2024

Session 7: Inflammation, metabolism and epigenetics

Chair: Annemarthe van der Veen

09.00-09.25 Itaconate and bacterial growth
Angelika Rambold

09.25-09.50 EMBO Young Investigator Lecture
Bacterial targeting of host chromatin
Mélanie Hamon

Flash talks selected from abstracts

09.50-10.05 NK cell memory to *Streptococcus pneumoniae*
Júlia Torné Cortada

10.05-10.20 LUBAC regulation of host response to *Listeria monocytogenes* infection
Berthe Katrine Fiil

10.20-10.50 Coffee break

Session 8: Regulation of interferon responses

Chair: Enzo Poirier

10.50-11.15 EMBO Young Investigator Lecture
Interferon: Tug of War between Host and Pathogen
Charlotte Odendall

11.15-11.40 Regulation of RNA sensing in ADAR1 deficiency and antiviral immunity
Annemarthe van der Veen

Short talks selected from abstracts

11.40-11.55 MDA5 guards against infection by surveying cellular RNA homeostasis
Natalia Sampaio

11.55-12.10 Regulation of nucleic acid immunity by the methyl-CpG-binding protein 2
Nadine Laguette

12.10-13.15 **Poster Session III**
Posters viewing only

Lunch

13.15-14.00 **Panel Discussion with Journal Editors**
The Organisers &
Sheba Agarwal-Jans (iScience)
Achim Breiling (EMBO Reports)
Alexandra Flemming (Nature Reviews Immunology)
Paula Jauregui (Nature Immunology and Nature Microbiology)
Sara Monaco (Review Commons)
Sarah Ross (Science)
Daniel Routledge (Disease Models and Mechanisms)

Session 9: T cell Immunity

Chair: Natalia Sampaio

14.00-14.25 T cell responses to vaccination and infection
Marion Pepper

14.25-14.50 T cell response to SARS-CoV-2
Mala Maini

14.50-15.15 T cell dynamics in lymph node microdomains scaling CD8 T effector cell formation
Wolfgang Kastenmüller

Short talks selected from abstracts

- 15.15-15.30 IFN- γ Suppresses T Follicular Helper Cell Differentiation and Antibody Responses
Mirela Kuka
- 15.30-15.45 Cardiolipin is an Inhibitor of Caspase-4/5/11 Driven Pyroptosis, An Immune Escape Mechanism for Bacteria or a Host Ally Against Sepsis?
Malvina Pizzuto
- 15.45-16.20 Coffee break

Session 10: Autophagy, proteostasis and infections

Chair: Franklin L. Zhong

- 16.20-16.45 Immune evasion through IRGQ-directed autophagy
Ivan Dikic

Short talks selected from abstracts

- 16.45-17.00 A novel restriction factor controls the spread of multiple viruses in primary human macrophages by regulating micropinocytosis
Philippe Benaroch
- 17.00-17.15 Structural insights into the activation mechanism of antimicrobial GBP1
Marius Weismehl

Keynote Session

Chair: Anna Kajaste-Rudnitski

- 17.15-18.00 Keynote Lecture
"Ubiquitin and autophagy networks in pathogen immunity"
Ivan Đikić
- 18.00-18.15 Closing remarks
- 19.00-23.00 Banquet dinner & Entertainment

ACKNOWLEDGMENTS

