

Fuelling the immune response III: UK Immunometabolism Meeting 2024

23 – 24 April 2024

Hilton Newcastle Gateshead, Newcastle

Tuesday 23 April

08:30 Registration and refreshments

09:05 What's up!
Opening address: Dr Sarah Dimeloe and Dr Nick Jones (BSI Immunometabolism Affinity Group Committee)

Session 1

Chairs: Sarah Dimeloe, University of Birmingham, UK and Nick Jones, Swansea University, UK

09:15 **Metabolic control of T cell function**
Russell Jones, Van Andel Institute, USA (*Keynote speaker*)

10:00 **Autophagy in T cells**
Linda Sinclair, University of Dundee, UK (*Invited speaker*)

10:30 **Ectopic GLUT5 expression enables CAR and TCR T Cells to utilise fructose as carbon source, fuelling functional efficacy in vitro and in vivo**
Esperanza Perucha, King's College London, UK (*Short talk - selected abstract*)

10:45 **Droplet-based CRISPR screening of T cell cytotoxicity**
Dr Roger Geiger, Institute for Research in Biomedicine, Bellinzona, Switzerland (*Invited speaker*)

11:15 Refreshment break and meet the exhibitors

Session 2

Chairs: Lizzy Rosser, University College London, UK and Andy Howden, University of Dundee, UK

11:45 **The nucleus as a dynamic metabolic compartment linking nutrients to chromatin modification**
Sophie Trefely, Babraham Institute, UK (*Invited speaker*)

12:15 **Demanding energy in T cells: RNA cap regulation of ribosomes**
Victoria Cowling, Beatson Institute for Cancer Research, UK (*Short talk - selected abstract*)

12:30 **Long-chain fatty acid uptake from the bone marrow microenvironment suppresses T cell function in multiple Myeloma**
Nancy Gudgeon, University of Birmingham, UK (*Short talk - selected abstract*)

12:45 **Exploring why good MAITs go bad in obesity**
Dr Andrew Hogan, Maynooth University, Ireland (*Invited speaker*)

13:15 Lunch, meet the exhibitors and networking

Session 3: PhD Bright Sparks session

Chairs: Russell Jones, Van Andel Institute, USA and Linda Sinclair, University of Dundee, UK

14:30 **Pentose Phosphate Pathway derived NO orchestrates macrophage immunometabolic responses; a target for Mycobacterium tuberculosis immune evasion**
John McGrath, Trinity College Dublin, Ireland (*Short talk - selected abstract*)

14:45 **Inducing an oxidized redox-balance leads to stress adaptive responses and improves CD8+ T cell function**
Ju Hee Oh, University of British Columbia, Canada (*Short talk - selected abstract*)

15:00 **The influence of co-stimulatory domains on the metabolic regulation of chimeric antigen receptor (CAR) T-cells**
Katie Flaherty, King's College London, UK (*Short talk - selected abstract*)

15:15 **Asparagine availability controls B cell homeostasis**
Yavuz Yazicioglu, University of Oxford, UK (*Short talk - selected abstract*)

15:30 **Exploring the metabolic programs of human $\gamma\delta$ T cells across lymphoid tissues**
Daniela Vicencio, Warwick University, UK (*Short talk - selected abstract*)

15:45 **Characterisation of pulmonary macrophage immunometabolism in type 2 settings**
Joshua Hughes, University of Manchester, UK (*Short talk - selected abstract*)

16:00 Refreshment break and meet the exhibitors

Session 4: PostDocs Bright Sparks session

Chairs: Caroline Demangel, Institute Pasteur, France and Andrew Hogan, Maynooth University, Ireland

16:30 **Nicotinamide Riboside Kinase 1 augments cytoplasmic NAD/H upon CD4+ T cell activation, controlling NADP/H synthesis, reactive oxygen species abundance, inflammatory function and survival**
Victoria Stavrou, University of Birmingham, UK (*Short talk - selected abstract*)

16:45 **Dietary arginine supplementation exacerbates experimental arthritis severity**
Diana Matei, University College London, UK (*Short talk - selected abstract*)

17:00	Investigation into obesity related defects in MAIT cells - is glutamine the missing link? Nidhi Kedia-Mehta, Maynooth University, Ireland (<i>Short talk - selected abstract</i>)
17:15	Elucidating the link between metabolic profile and NK cell function in the progression of multiple myeloma Elise Rees, University College London, UK (<i>Short talk - selected abstract</i>)
17:30	Poster session with networking reception
19:00	Conference dinner - Gateshead Suite, Hilton Hotel

Wednesday 24 April

Session 5: Emerging PI session

Chairs: Laura Pallett, University College London, UK and Roger Geiger, Institute for Research in Biomedicine, Bellinzona, Switzerland

09:15	Sex, Oxysterols and the regulation of B cell responses in autoimmunity Lizzy Rosser, University College London, UK (<i>Invited emerging PI</i>)
09:30	Mapping the B cell protein landscape and its regulation by immune stimulation Andy Howden, University of Dundee, UK (<i>Invited emerging PI</i>)
09:45	Metabolic regulation of CAR-T cells Anna Schurich, King's College London, UK (<i>Invited emerging PI</i>)
10:00	Therapeutic targeting of mitochondrial metabolism in T-cell mediated autoimmunity Nick Jones, Swansea University, UK (<i>Invited emerging PI</i>)
10:15	IgM is a regulator of pleural cavity macrophage metabolism Lucy Jackson-Jones, Lancaster University, UK (<i>Invited emerging PI</i>)
10:30	Metabolic regulation of T cell signalling and function Joy Edwards-Hicks, University of Edinburgh, UK (<i>Invited emerging PI</i>)
10:45	Agilent Technologies (<i>Sponsored talk</i>)
11:00	Refreshment break and meet the exhibitors

Session 6

Chairs: Anna Schurich, King's College London, UK and Matthew Sinton, University of Manchester, UK

11:30 **Protein metabolism fuelling immunity: mycobacteria hit the brakes**
Caroline Demangel, Institute Pasteur, France (*Invited speaker*)

12:00 **Unpicking novel immunometabolic contributions to macrophage function using CRISPR screening**
Dr Lee Booty, GSK, UK (*Invited speaker*)

12:15 **IL-2 stimulates glutaminolysis to enable de novo pyrimidine synthesis in natural killer cells**
Geraldine O'Connor, University of Central Lancashire, UK (*Short talk - selected abstract*)

12:30 **Train to win; immunometabolic changes in beta-glucan induced trained immunity**
Frederick Sheedy, Trinity College Dublin, Ireland (*Invited speaker*)

13:00 Presentation of prize winners
Dr Linda Sinclair, University of Dundee, UK and Dr Lee Booty, GSK, UK

13:15 Lunch

14:00 Close

Poster presentations

P.01 A transcriptome-wide Mendelian randomization study assessing the causal role of CD4+ T cell gene expression profiles in colorectal cancer development

Benedita Deslandes, University of Bristol, UK

P.02 Glucocorticoids inhibit HIF-1 α accumulation and metabolic reprogramming in inflammatory macrophages

Chloe Lockwood, University of Birmingham, UK

P.03 Dynamics of metabolism in UpCell-differentiated hMDMs

Olivia Boag, Sitryx Therapeutics, UK

P.04 Development of methods to interrogate subcellular localisation of NRK1-dependent NAD/H synthesis in CD4+ T cells

Myah Ali, University of Birmingham, UK

P.05 Interrogating NMNAT isoform expression and function in human CD4+ T cells

Bethany Turley, University of Birmingham, UK

P.06 Iron is critical for mucosal-associated invariant T cell metabolism and effector functions

Eimear Ryan, Maynooth University, Ireland

P.07 The role and regulation of cholesterol metabolism in B cell survival and proliferation

Dana Cheung, University of Dundee, UK

P.08 Lung tissue control of regulatory T cell phenotype, function and metabolism

Ben Harrop, University of Manchester, UK

P.09 Uncovering untapped potential: noncanonical neoepitopes and T-cell metabolism in paediatric acute lymphoblastic leukaemia

Nicole Acuti, The Francis Crick Institute and King's College London, UK

P.10 Exploring Affinity-Dependent Metabolic Imprinting of Anti-Viral T Cell Responses

Hannah Bollons, University of Birmingham, UK

P.11 Lactate regulation of MAIT cell responses

Ardena Berisha, Maynooth University, Ireland

P.12 Interrogating control of macrophage metabolic and immune function by TNF- α

Rebecca Mann, University of Birmingham, UK

P.13 Interrogating the metabolic effects of the antimicrobial peptide cathelicidin on CD4+ T cells

Zachary Lim, University of Southampton, UK

P.14 Tissue resident CD8+ TRM adapt their metabolic profile to survive and function in the human liver

Daniel Brown Romero, University College London, UK

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