

Lung Science Conference

Post-viral lung diseases – from basic immunology to clinical phenotypes and therapy

9-12 March 2023 – Estoril, Portugal

Scientific programme as of 06.02.2023

The conference is granted with 20.5 CME credits by the European Board for Accreditation on Pneumology (EBAP)

Thursday 9 March 2023

LIVE

Opening Session

18:00-18:15

Welcome and Introduction

Silke Meiners, ERS Conferences and Seminars Director

18:15-19:00

Opening Lecture

“What can we learn from acute virus infections for chronic disease?” –

Peter Openshaw (United Kingdom)

19:00-19:15

Discussion

Friday 10 March 2023

08:30-08:50

Keynote lecture – “Regulation of pulmonary memory B cell responses to influenza” – Andre Ballesteros-Tato (USA)

08:50-09:00

Discussion

LIVE

Session 1:

Host-response to virus infections – focussing on the lung stroma

09:00-09:20

Respiratory tract infections: dissecting the role of bronchial epithelial and basal cells

Thomas Wilkinson (United Kingdom)

09:20-09:35

Discussion

09:35-09:55

Linking alveolar epithelial cell infection to fibrosis

Antoine-Emmanuel Saliba (Germany)

09:55-10:10

Discussion

10:10-10:30

Coffee break

10:30-10:45

OP01 – In vitro modelling of respiratory infections in Idiopathic Pulmonary Fibrosis using patient-specific hiPSC-derived alveolar epithelial cells

Ana Lilia Serna Valverde (United Kingdom)

10:45-11:05

Response to virus infections: how about the pulmonary endothelial cells?

Jane Mitchell (United Kingdom)

11:05-11:20

Discussion

LIVE

Session 2:

Host-immune response to virus infections of the lung (part 1)

11:20-11:40

Involvement of myeloid cells in respiratory virus infections

Susanne Herold (Germany)

11:40-11:55

Discussion

11:55-12:10

OP02 – Single cell RNA sequencing from nasal biopsies reveal immune-/epithelial cell cross-talk in symptomatic postCovid patients

Anke Faehnrich (Germany)

All timings are in Western European Time (WET)

12:10-12:25 **OP03 – Transitional stem cells and pulmonary fibrosis in non-reversible COVID-19 requiring lung transplantation**
Harry Karmouty-Quintana (USA)

12:30-14:30 Lunch for all delegates and mentorship lunch discussion for bursary recipients and their mentors



Session 2: Host-immune response to virus infections of the lung (part 2)

14:30-14:45 **OP04 – Recombinant Histone Deacetylase 6 (rHDAC6) treatment protects against influenza A virus (IAV) infection and disease in vivo**
Katie Daly (Australia)

14:45-15:05 **Adaptive immune responses in virus infections**
Hermelijn Smits (Netherlands)

15:05-15:20 Discussion

15:20-15:35 **OP05 – Elevated CD27-IgD- B cells in Post-Acute COVID-19 Sequelae Patients with Rheumatological Symptoms**
Nadia Suray Tan (Canada)

15:35-15:55 **Dendritic cell subsets in respiratory virus infection**
Hamida Hammad (Belgium)

15:55-16:10 Discussion

16:10-16:25 **OP06 – Biomarker identification in fatal and post-acute sequelae of SARS-CoV-2 (PASC) lungs leads to epigenetic targeting in PASC-related fibrosis**
Milena Espindola (USA)

From 16:30 coffee will be served in the poster area

16:45-18:45 **Poster Session 1**

Group A

TP101 – Reprogramming of BM-MSc during viral lung infection is mediated by type I interferon signalling and IL-11 axis - Margarida Barroso, Germany

TP102 – Comprehensive analysis of trainable and untrainable genes in Rhinovirus infected bronchial epithelial cells - Marua Abu Risha, Germany

TP103 – Iron metabolism determines the outcome of influenza A virus infection - Jemma Mayall, Australia

TP104 – Activated -inflammatory states of airway cells in Long COVID - Nadia Baalbaki, Netherlands

TP105 – Altered peripheral blood neutrophil profiles are associated with persistent symptoms post-COVID19 - Chloe Hughes, United Kingdom

TP106 – Two lung immuno-endotypes in IPF associated with different pathological features - Tamara Cruz, Spain

TP107 – Repetitive rhinovirus infection primes for amplified IL-13 induced airway epithelial responses - Huan Ma, Germany

TP108 – Ly6Chi monocytes balance regulatory and cytotoxic CD4 T cell responses to control virus-induced immunopathology - Bénédicte Machiels, Belgium

TP109 – Immunophenotyping temporal phases of COVID-19-associated lung injury using imaging mass cytometry - Luke Milross, United Kingdom

TP110 – “Clinical and immunological phenotypes” in ‘Long COVID’: The tsunami of multisystem syndrome of this decade! - Shital Vishnu Patil, India

All timings are in Western European Time (WET)

TP111 – Reasons for rehospitalization among patients recovered from COVID-associated pneumonia - Nataliia Habshydzhe, Ukraine

Group B

TP112 – Modelling early disease phenotypes of IPF airway cells and their drug responses - Robert Lorenz Chua, Germany

TP113 – APC: T cell interactions in the lung: exploring the generation and phenotype of memory CD4 T cells during influenza virus infection - Kerrie Hargrave, United Kingdom

TP114 – Using the BXD2 mice as a model of arthritis: silicosis and silica-induced arthritis in the BXD2 mice – Lisa Janssen, Belgium

TP115 – Carbon nanotubes specifically induce recruitment of monocyte-derived macrophages related to fibrosis - Carola Voss, Germany

TP116 – Dysregulation of the RNA binding protein IGF2BP3 modulates IL-13-driven inflammation in bronchial epithelium in asthma - Paniz Khooshemehri, United Kingdom

TP117 – Antiviral CD8+ T cell immune responses are impaired by cigarette smoke and in COPD - Yuqin Wang, Germany

TP118 – Integrating peripheral microRNAs in the clinical management of the respiratory post-acute sequelae in critical COVID-19 - David de Gonzalo Calvo, Spain

TP119 – The Ste20 kinase TAOK3 controls the development, homeostasis and activation of $\alpha\beta$ T cells - Sahine Lameire, Belgium

TP120 – Role of JAK-inhibitors in management of Long COVID-19 syndrome: A Case-Control Study - Lokesh Kumar Lalwani, India

TP121 – A mechanistic analysis of the effect of valaciclovir for EBV suppression on airway inflammation and microbiome in COPD - Dermot Linden, United Kingdom

TP122 – Influenza accelerates non-small cell lung cancer development in a LKB1/PTEN KO mouse model - David Reynolds, Australia

Group C

TP123 – Transcriptomic analysis suggests susceptibility to lung diseases post Sars-Cov-2 infection - Deepesh Dhakad, Germany

TP124 – Maladapted antibacterial epithelial response in the post-influenza lung - Dunja Bruder, Germany

TP125 – Longitudinal blood and tissue single cell transcriptomics of humans challenged with SARS-CoV-2 reveals innate and adaptive immune dynamics - Kaylee Worlock, United Kingdom

TP126 – Transcriptional gene regulation of Interleukin-6 in bronchial epithelial cells in the context of viral infections and asthma - Shauni Belana Biedermann, Germany

TP127 – Viral responses do not differ between term and preterm airway epithelial cells - Denby Evans, Australia

TP128 – Translating genetic signals associated with host-respiratory virus susceptibility to genes and pathways to provide therapeutic opportunities - Christina Shrees, United Kingdom

TP129 – Serum markers of chronic inflammation and pulmonary remodelling in patients with long COVID up to one year after infection - Carla Bellinghausen, Germany

TP130 – G-protein coupled receptor (GPR)55 deficiency affects neutrophil function and regulates lung injury in mice - Raquel Guillamat Prats, Spain

TP131 – Induced Pluripotent Stem Cell-derived Type 2 Alveolar Epithelial Cells—A Novel Model of Short-Telomere Related Lung Fibrosis – Anja Schweikert, Ireland

TP132 – Dampening type 2 properties of group 2 innate lymphoid cells by a gammaherpesvirus infection reprograms alveolar macrophages - Laurent Gillet, Belgium

TP133 – Prior lung inflammation induced by intranasal double-stranded RNA does not exacerbate pulmonary hypertension in a mouse model - Helena Turton, United Kingdom

Group D

TP134 – Inflammatory type 2 cDCs acquire features of cDC1s and macrophages to orchestrate immunity to respiratory virus infection - Cedric Bosteels, Belgium

TP135 – Targeted alveolar injury utilizing AAV-DTR mouse model to elucidate the pathophysiology of idiopathic pulmonary fibrosis - Devona Soetopo, Germany

TP136 – Harnessing T regulatory cells to treat respiratory infections - Ntombizodwa Makuyana, United Kingdom

TP137 – Emergence of a capillary derived VWA1+/PLVAP+ ectopic endothelial cell state in human lung fibrogenesis - Lin Yang, Germany

TP138 – RNA-seq analysis reveals changed responses to influenza virus infection in house dust mite-exposed mice - Dan Li, Netherlands

TP139 – The role of SARS-CoV-2 receptor ACE-2 isoforms in SARS-CoV-2 infection in the airway epithelium - Cosma Mirella Spalluto, United Kingdom

TP140 – Redox Regulation of Post-Viral Sequelae - Vikas Anathy, USA

TP141 – Protective effect of interferon type I on barrier function of the human airway epithelium during rhinovirus infections in vitro - Helena Boland, Germany

TP142 – Peptidyl-arginine deiminases – neutrophil derived proteins as anti-Pseudomonas aeruginosa agents in patients with cystic fibrosis - Rory Baird, Ireland

TP143 – Particle-induced pulmonary events in C57BL/6J and NOD/ShiLtJ mice - Lisa MF Janssen, Belgium

TP144 – Post-COVID-19 patients show vascular sequelae that last up to 6 months – Olga Tura-Ceide, Spain

From 19:30 Cocktail & Dinner for all delegates

Saturday 11 March 2023

LIVE

Session 3: Technological advances to study acute and chronic virus infections of the lung

08:45-09:05 Omics technologies to study virus infections and chronic lung diseases

Phil Hansbro (Australia)

09:05-09:20 Discussion

09:20-09:35 OP07 – Longitudinal proteomic profiling reveals early onset increase in collagens and (auto-)antibodies in COVID-19 patients

Anna Semenova (Germany)

09:35-09:55 Swarm Learning for decentralized and confidential clinical machine learning

Stefanie Warnat-Herresthal (Germany)

09:55-10:10 Discussion

10:10-10:25 OP08 – Recapitulating morphological and functional characteristics of distal airways in tubular organoids to model post-viral obstructive diseases

Isabelle Dupin (France)

10:25-10:55 *Group Picture and Coffee Break*

All timings are in Western European Time (WET)



10:55-12:10

Young Investigator Session – The William MacNee Award

10:55-11:10

YI01 – Lung regeneration for inherited interstitial pulmonary fibrosis using a novel combinatorial AAV gene therapy

Pauline Bardin (France)

11:10-11:25

YI02 – Defining and modelling the fibrotic niche in lung fibrosis

Joseph Bell (United Kingdom)

11:25-11:40

YI03 – Persistence of specific T-cell response in patients with Long COVID and pulmonary sequelae

Nuria Mendoza Barco (Spain)

11:40-11:55

YI04 – Long-lasting alterations in lung anti-tumor immunity by viral infections

Lucia Rodriguez Rodriguez (Belgium)

11:55-12:10

YI05 – SARS-CoV-2 induces fibrosis-associated macrophage signatures and triggers pulmonary fibrosis

Daniel C. Wendisch (Germany)

12:15-13:30

Lunch

13:30-15:30

Poster Session 2

Group E

TP201 – Impact of GM-CSF on lung epithelial cell injury and repair in severe influenza virus pneumonia - Theresa Schäfer, Germany

TP202 – Resolution of inflammation in long COVID - Sean Knight, United Kingdom

TP203 – Pulmonary impaired COVID-19 patients show pro-fibrotic serum biomarkers after 4 months - Carlos Esteban Machahua Huamani, Switzerland

TP204 – Co-cultured, human alveolar organoids recapitulate epithelial-mesenchymal crosstalk in fibrotic lung disease - Carola Voss, Germany

TP205 – Cellular senescence in severe COPD bronchial epithelium impairs responses to human rhinovirus infection - Hong Guo-Parke, United Kingdom

TP206 – Cigarette smoke delays murine innate immune response against X31 influenza infection - Jelmer Vlasma, Netherlands

TP207 – Cigarette smoke induced transient and persistent proteome changes - Marie Zöller, Germany

TP208 – A circular RNA regulates ion conductance in cystic fibrosis bronchial epithelium - Chiara De Santi, Ireland

TP209 – COVA: results of a double-blind, placebo-controlled phase 2/3 study to assess efficacy and safety of BIO101 in hospitalized COVID-19 patients - Suzana Lobo, Brazil

TP210 – COVID-19 pneumonia hospitalizations in different phases of the pandemic in the United States: patient characteristics and clinical outcomes - Stijn Hollemeersch, USA

TP211 – Tnfsf14-driven apoptosis of alveolar macrophages upon influenza infection enables the establishment of secondary pneumococcal pneumonia - Christina Malainou, Germany

Group F

TP212 – Lung stromal cell dynamics are altered by infection experience and ongoing antigen presentation following influenza re-challenge - Julie Worrell, United Kingdom

TP213 – First study results of the P4O2 long COVID cohort - Nadia Baalbaki, Netherlands

TP214 – Loss of GM-CSF-dependent instruction of alveolar macrophages in COVID-19 provides a rationale for inhaled GM-CSF treatment - Nincy Debeuf, Belgium

TP215 – The emerging link between CR3 and purinergic signaling in chronic obstructive pulmonary disease - Debananda Gogoi, Ireland

TP216 – Pulmonary function 3-6 months following COVID-19: the P402 COVID-19 study - Merel Cornelissen, Netherlands

TP217 – Delineating the immune response of lung alveolar macrophages, CD4+ and CD8+ T-cells to viral PAMPs using live microscopy - Yasmin Shaalan, Germany

TP218 – Impact of the SARS-CoV-2 pandemic on benralizumab-treated patients with severe eosinophilic asthma – Nimród László, Romania

TP219 – Sonographic follow-up of diaphragm function in COVID-19: an exploratory study - Wytze De Boer, Netherlands

TP220 – Defining the role of SARS-CoV-2 – $\alpha\beta6$ integrin binding in the pathogenesis of COVID-19 induced lung damage - Federica Monduzzi, Italy

TP221 – Association between cytomegalovirus seropositivity and severity of pulmonary fibrosis - Ana Serezani, USA

TP222 – Viral pneumonia elicits a lung epithelial repair program in transdifferentiating alveolar macrophages characterized by Plet1 - Leara Pervizaj-Oruqaj, Germany

Group G

TP223 – UPF1 is a novel factor in rhinovirus pathogenesis that is deficient in patients with severe asthma - Rocio Teresa Martinez-Nunez, United Kingdom

TP224 – Direct OM-85 airway administration: a new route to prevent viral infections and reduce associated inflammatory sequelae - Christian Pasquali, Switzerland

TP225 – Single-cell transcriptomic analysis reveals an altered bronchial epithelial cell differentiation in asthma - Aurore Gay, Netherlands

TP226 – Interferon lambda activates the immunoproteasome thereby potentially regulating anti-viral immunity in the lung - Alexandra Sailer, Germany

TP227 – Eosinophil subtypes affect airway smooth muscle cells migration and ECM-related proliferation in asthma - Airidas Rimkunas, Lithuania

TP228 – Residual lung abnormalities following non-hospitalised COVID-19 infection - David Smith, United Kingdom

TP229 – Respiratory gammaherpesvirus infection exacerbates experimental model of inflammatory bowel disease - Alexis Balthazar, Belgium

TP230 – PolyI:C and doxorubicin induce a senescent phenotype in basal cells, resulting in impaired lung organoids - Michelle Brand, Germany

TP231 – Gene environment interaction in COPD: Involvement of a nicotinic receptor gene polymorphism - Layal Massara, France

TP232 – Cytosolic DNA stress activates the immunoproteasome and primes adaptive T-cell immunity - Laylan Bramasole, Germany

TP233 – Primary human-derived airway organoid and immune cell co-cultures to facilitate viral infection and drug screening assays - Georgios Stroulios, United Kingdom

Group H

TP234 – Human induced pluripotent stem cell (hiPSC) derived lung organoids for disease modelling - Anna-Lena Ament, Germany

TP235 – Histamine and IL-4 alter airway basal cell differentiation and mobility after injury - Emma Ruysseveldt, Belgium

TP236 – Extrusion: a new paradigm in epithelial rhinovirus innate immune mechanism - Faith Fore, United Kingdom

TP237 – Thioredoxin-1 and soluble interleukin-5 receptor subunit alpha as biomarkers of allergic and non-allergic asthma - Jolita Palacionyte, Lithuania

TP238 – Lack of IL-33 induction in transcriptional response of primary bronchial epithelial cells in asthma patients - Akshaya Keerthi Saikumar Jayalatha, Netherlands

TP239 – Clinical significance of macrophage-lymphocyte rosettes(MLRos) formation in patients with bronchial asthma(BA) - Tamar Saralidze, Georgia

TP240 – Preventive intranasal flagellin protects against a multidrug resistant strain of P. aeruginosa by restoring the effect of gentamicin - Ana Raquel Conduto Dias Maia, France

TP241 – Effect of hybrid rehabilitation on exercise tolerance and peripheral muscle strength in patients with long COVID-19 syndrome - Angelos Vontetsianos, Greece

TP242 – Involvement of the CXCL12/CXCR4 axis in skeletal muscle wasting in a murine model of early Chronic Obstructive Pulmonary Disease (COPD) - Pauline Henrot, France

TP243 – Kinetics of immune subsets in COVID-19 patients treated with corticosteroids - Apostolos Pappas, Greece

TP244 – Outcome in total lung capacity associated with oropharyngeal microbiota relative to COVID-19-related ARDS status - Sabine Stadler, Switzerland

From 15:00 coffee will be served in the poster area



17:00-19:30 **Early-Career delegates session – Successfully funding your future research**

17:00-17:10 **Introduction**
Sara Cuevas Ocana (United Kingdom)

17:10-17:20 **ERS fellowship opportunities: your first personal research grant**
Sejal Saglani (United Kingdom)

17:20-17:25 Discussion

17:25-17:35 **Preparation of a lay summary and interaction with patient representatives for your grant application**
Jessica Denning (United Kingdom), ELF representative

17:35-17:40 Discussion

17:40-17:50 **How to convincingly defend your research proposal?**
Argyris Tzouvelekis, (Greece)

17:50-17:55 Discussion

17:55-18:05 **Equity, diversity and inclusion statements**
Daiana Stolz (Switzerland)

18:05-18:10 Discussion

18:10-19:30 **Round table**

19:30-19:50 **Evening Pre-dinner talk: “How do we manage the infodemic?”**
Sylvie C. Briand (Switzerland)

19:50-20:00 Discussion

20:00 Award Ceremony

From 20:15 Dinner for all delegates

All timings are in Western European Time (WET)



Session 4: Translation to therapy

08:30-08:50 Novel treatment strategies to fight Coronavirus infections

Bart Haagmans (Netherlands)

08:50-09:05 Discussion

09:05-09:25 Defining and correcting viral reprogramming

Michael Holtzman (USA)

09:25-09:40 Discussion

09:40-10:00 Treating virus infections in patients with chronic lung disease

Daiana Stolz (Switzerland)

10:00-10:15 Discussion

10:15-10:35 *Coffee break*



10:35-12:00 Panel Discussion: "LSC teachings for cause and cure of post-viral lung disease"

Moderator: Klaus Rabe (Germany)

Panellists: Sylvie Briand, Michael Holtzman, Gisli Jenkins, Peter Openshaw, Sejal Saglani, Thomas Wilkinson

12:00-12:15 Conclusion by Silke Meiners, ERS Conferences and Seminars Director

12:15 *Lunch and departure*