2019 ECFS Conference

New Frontiers in Basic Science of Cystic Fibrosis

27-30 March 2019, Dubrovnik, Croatia

Programme

Chairpersons:

Isabelle Callebaut (Paris, FR), Carlos Farinha (Lisbon, PT), Martin Mense (Lexington, US)

Wednesday, 27 March 2019 (Day 1)	
13:30-17:00	**Pre-Conference Seminar**
	CFTR: new insights on structure and function, and implications for modulation
	Chairs: Bertrand Kleizen (NL) - David Sheppard (UK)
13:30-13:35	Introduction - Bertrand Kleizen (NL)
13:35-14:10	The allosteric effects of the F508del mutation in human CFTR elucidated by cryo-EM enabled by protein engineering - John Hunt (US)
14:10-14:45	Conformational landscape of CFTR from experimental and simulation data - Isabelle Callebaut (FR)
14:45 – 15:15	*Coffee break*
15:15-15:50	On the molecular mechanism of action for CFTR potentiators - Tzyh-Chang Hwang (US)
15:50-16:25	CFTR therapeutics: current evidence, gaps in knowledge, and future directions - Isabelle Sermet-Gaudelus (FR)
16:25-16:55	Discussion
16:55-17:00	Conclusion - David Sheppard (UK)
17:30-18:00	**Official Opening of the Meeting by the Conference Chairpersons**
18:00-19:00	**Opening Keynote Lecture**
	The genetics and genomics of CF – Garry Cutting (US)
19:00-19:45	**Welcome Reception**
19:45-21:30	*Dinner*

Thursday, 28 March 2019 (Day 2)	
07:30-08:45	*Breakfast*
08:45-10:30	**Symposium 1 – Genetics, genomics, and transcriptomics**
	Chairs: Garry Cutting (US) – Alexandre Hinzpeter (FR)
08:45-09:10	Enhancers, structural elements and 3D organization: key features in regulation of *CFTR* gene expression - Ann Harris (US)
09:10-09:35	Update on cystic fibrosis modifier genes - Harriet Corvol (FR)
09:35-10:00	Polyvariant mutant *CFTR* genes of mutations with varying consequences - Harry Cuppens (BE)
10:00-10:10	Abstract 01 - Identification of *CFTR cis*-regulatory variants - Mégane Collobert (FR)
10:10-10:20	Abstract 02 - Comparison of three genome editing techniques to correct the common W1282X mutation responsible for cystic fibrosis - Karen Mention (IE)
10:20-10:30	Abstract 06 - Recruitment to cystic fibrosis airway fluid licenses transcription and subsequent acquisition of the pathological GRIM fate by human neutrophils - Rabindra Tirouvanziam (US)
10:30-11:00	*Coffee break* & **Poster viewing**
11:00-12:45	**Symposium 2 – Rare mutations and complex alleles**
	Chairs: Isabelle Sermet-Gaudelus (FR) – Nicoletta Pedemonte (IT)
11:00-11:25	*CFTR* complex alleles - Alexandre Hinzpeter (FR)
11:25-11:50	Make sense out of nonsense with antisense - Shuling Guo (US)
11:50-12:15	A shortcut to bringing more patients with rare genotypes into the tent? - Phil Thomas (US)
12:15-12:25	Abstract 10 - Characterization of the rare S955P-CFTR mutation and its response to modulators in cellular models and patient-derived materials - Sofia Ramalho (PT)
12:25-12:35	Abstract 09 - The cystic fibrosis mutations L927P and I336K modulate CFTR pore dynamics during channel gating, but are rescued by ivacaftor and lumacaftor - Majid K. Al Salmani (UK)
12:35-12:45	Abstract 08 - Not all stop codons are created equal, neither do they always stop: morals from single-channel studies of E60X- and G542X-CFTR - Jiunn-Tyng Yeh (US)
12:45-14:30	*Lunch*
14:30-15:30	**Flash Poster Session (even numbers)**
	Chair: Bertrand Kleizen (NL)
15:30-16:00	*Coffee break* & **Poster viewing**
16:00-17:45	**Symposium 3 – Epithelial channelome: (i) Folding and structure**
	Chairs: Isabelle Callebaut (FR) – Ineke Braakman (NL)
16:00-16:25	Mechanism of ion conduction and gating in the calcium-activated chloride channel TMEM16A - Raimund Dutzler (CH)
16:25-16:50	A minimal helical hairpin motif provides molecular-level insights into misfolding and pharmacological rescue of CFTR - Michael Schlierf (DE)
16:50-17:15	NBD1 cotranslational folding intermediates as therapeutic targets - Bill Skach (US)

17:15-17:25	Abstract 13 - The regulatory insertion enables novel conformations of NBD1 of CFTR - Daniel Scholl (BE)
17:25-17:35	Abstract 18 - CFTR conformational landscape explored by computational approaches - Ahmad Elbahnsi (FR)
17:35-17:45	Abstract 15 - Identifying the molecular targets for CFTR potentiators GLPG1837 and VX-770 - Han-I Yeh (US)
17:45-18:00	*Break*
18:00-19:45	**ECFS Basic Science Working Group session**
	Activating alternative chloride channels to treat CF: friends or foes?
	Chairs: Margarida Amaral (PT) - Jeff Beekman (NL)
18:00-18:05	Introduction
18:05-18:50	Round table 1: Can we regulate TMEM16A independently of Ca^{2+}? And TMEM16A /SLC26A9 independently of CFTR? Moderators: Jeff Beekman & Karl Kunzelmann
18:05-18:10	Facts about ANO1 - Karl Kunzelmann (DE)
18:10-18:13	Abstract 32 - EACT increases intracellular calcium levels by a TMEM16A-independent mechanism - Henry Danahay (UK)
18:13-18:16	Abstract 111 - Niclosamide repurposed for the treatment of inflammatory airway disease – Roberta Benedetto (DE)
18:16-18:19	Abstract 34 - Identification of novel ANO1/TMEM16A regulators as alternative therapeutic targets for cystic fibrosis - Madalena Pinto (PT)
18:19-18:50	Overall Discussion
18:50-19:00	Short Break
19:00-19:45	Round table 2: TMEM16A and mucus Moderators: Margarida Amaral & Luis Galietta
19:00-19:03	Abstract 30 - TMEM16A channel function does not influence goblet cell numbers in the human airway epithelium - Henry Danahay (UK)
19:03-19:06	Abstract 28 - Cell Proliferation Upregulates ANO1 in Mucus Cell Hyperplasia – Filipa Simões (PT)
19:06-19:09	Abstract 105 - The attached stratified mucus in obstructive airway disease is detached by calcium removal - Dalia Fakih (SE)
19:09-19:12	Abstract 31 - Physiological role and therapeutic importance of TMEM16A chloride channel in the airway epithelium - Arianna Venturini (IT)
19:12-19-45	Overall Discussion
19:45-21:30	*Dinner*
21:30-23:00	**Evening Poster Session:** Posters with Even numbers

Friday, 29 March 2019 (Day 3)	
07:30-08:45	*Breakfast*
08:45-10:30	**Symposium 4 – Epithelial channelome: (ii) Cell physiology and ion transport**
	Chairs: Margarida Amaral (PT) – Phil Thomas (US)
08:45-09:10	Exploiting species differences to investigate CFTR - David Sheppard (UK))
09:10-09:35	Anionophores: Small-molecule CFTR surrogates as mutation agnostic CF drug candidates - Roberto Quesada (ES)
09:35-10:00	ATP12A – pig models - Michael Welsh (US)
10:00-10:10	Abstract 20 - Impact of CFTR function on airway mucus properties - Martial Delion (BE)
10:10-10:20	Abstract 21 - Early onset of airway mucus obstruction associated with increased mortality in neonatal *Slc26a9* deficient mice - Pamela Millar-Büchner (DE)
10:20-10:30	Abstract 24 - Dual role of pendrin as a bicarbonate secretion pathway and CFTR modulator in well-differentiated human nasal and bronchial epithelial cells - John W. Hanrahan (CA)
10:30-11:00	*Coffee break* & **Poster viewing**
11:00-12:45	**Symposium 5 - CFTR processing, trafficking and interactions**
	Chairs: Carlos Farinha (PT) - Luis Galietta (IT)
11:00-11:25	A Proteomic Variant Approach (ProVarA) for personalized medicine of inherited and somatic disease – Darren Hutt (US)
11:25-11:50	Novel CFTR regulators identified by means of a functional genomics approach and their possible mechanisms of action - Nicoletta Pedemonte (IT)
11:50-12:15	Functional genomics of F508del-CFTR: Illuminating traffic mechanisms for innovative therapeutic strategies - Margarida Amaral (PT)
12:15-12:25	Abstract 47 - CFTR processing mutations cause distinct trafficking and functional defects - Marjolein Ensinck (BE)
12:25-12:35	Abstract 49 - Role of the proteasome in the biosynthetic arrest of SLC26A9 by F508del-CFTR - Yukiko Sato (CA)
12:35-12:45	Abstract 48 - Monitoring the phospho-occupancy of CFTR in respiratory epithelia using mass spectrometry - Aiswarya Premchandar (CA)
12:45-14:00	*Lunch*
14:00-18:30	**Free Afternoon**
18:30-19:30	**Flash Poster Session (odd numbers)**
	Chair: Bertrand Kleizen (NL)
19:30 -21:30	*Dinner*
21:30-23:00	**Evening Poster Session:** Posters with Odd numbers

Saturday, 30 March 2019 (Day 4)	
07:30-08:45	*Breakfast*
08:45-10:30	**Symposium 6 – Inflammation and host-pathogen interactions**
	Chairs: Marcus Mall (DE) – Gunnar Hansson (SE)
08:45-09:10	Implication of host antimicrobial peptides in the modulation of bacterial-bacterial interactions in CF airways - Lhousseine Touqui (FR)
09:10-09:35	Viral-bacterial co-infections in cystic fibrosis – Jennifer Bomberger (US)
09:35-10:00	Biofilm formation in cystic fibrosis - Tom Coenye (BE)
10:00-10:10	Abstract 67 - Effects of short-term lumacaftor-ivacaftor therapy on lung microbiome in Phe508del homozygous patients with cystic fibrosis - Sébastien Boutin (DE)
10:10-10:20	Abstract 56 - Metabolic reprogramming of cystic fibrosis macrophages by the IRE1a-XBP1 pathway leads to an exaggerated inflammatory response - Samuel Lara-Reyna (UK)
10:20-10:30	Abstract 55 - SPLUNC1 peptidomimetics inhibit Orai1 to reduce pulmonary inflammation - Saira Ahmad (US)
10:30-11:00	*Coffee break* & **Poster viewing**
11:00-12:45	**Symposium 7 – Model systems**
	Chairs: Martin Mense (US) – Jeff Beekman (NL)
11:00-11:25	A single cell atlas of the airway epithelium reveals the CFTR-rich pulmonary ionocyte - Aron Jaffe (US)
11:25-11:50	Mechanisms of airway epithelium repair in cystic fibrosis - Marc Chanson (CH)
11:50-12:15	Understanding altered airway mucins sialyation and decreased mucociliary transport in cystic fibrosis pig airways using single cell gene expression – airway cells - Pascal Barbry (FR)
12:15-12:25	Abstract 82 - Development of a steady-state lumen area screening assay to measure CFTR function in organoids of cystic fibrosis patients - Marne Hagemeijer (NL)
12:25-12:35	Abstract 76 - Human induced pluripotent stem cell derived p63 expressing epithelial cells provide a personalized model for CF lung epithelium - Bob Scholte (NL)
12:35-12:45	Abstract 75 - Primary human nasal epithelial cell air/liquid interface cultures: an *in vitro* model system for assessing CFTR function - Calvin Cotton (US)
12:45-14:15	*Lunch*

14:15-16:10	**Symposium 8 – Therapeutical approaches**
	Chairs: Martina Gentzsch (US) – David Sheppard (UK)
14:15-14:40	Novel developments in genetic therapies for cystic fibrosis - Stephen Hart (UK)
14:40-15:05	Update on CF gene therapy – Chris Boyd (UK)
15:05-15:30	Co-potentiators as a novel therapeutic paradigm for CFTR mutations that are not responsive to available modulators - Peter Haggie (US)
15:30-15:40	Abstract 87 - Genetic repair of CFTR function in cystic fibrosis organoids using CRISPR/Cas9 adenine base editing - Eyleen de Poel (NL)
15:40-15:50	Abstract 102 - The pharmacology of novel TMEM16A potentiator compounds - Martin Gosling (UK)
15:50-16:00	Abstract 33 - Identification of pharmacological modulators of the TMEM16A chloride channel by high-throughput screening - Michele Genovese (IT)
16:00-16:10	Abstract 90 - CFTR super exon partially corrects W1282X-CFTR - Hillary Valley (US)
16:10-16:45	*Coffee Break*
16:45-17:45	**Workshop: How to get published – a perspective from JCF** **Breakout Room**
	Chairs: Cliff Taggart (UK) – David Spencer (UK)
	Cliff Taggart, JCF Editor and David Spencer, JCF publisher, will give an overview of the Journal of Cystic Fibrosis including how to publish basic science findings and what the editors and reviewers look for when reviewing manuscripts submitted to the Journal.
16:45-17:45	**Flash Paper Session**
	Chair: Marc Chanson (CH)
16:45 – 16:58	Esomeprazole increases airway surface liquid pH in primary cystic fibrosis epithelial cells - Vinciane Saint-Criq (UK)
16:58 – 17:11	*Staphylococcus aureus* impacts *Pseudomonas aeruginosa* chronic respiratory disease in murine models - Cristina Cigana (IT)
17:11 – 17:25	Targeting of the Cystic Fibrosis Transmembrane Conductance Regulator (CFTR) protein with a technetium-99m imaging probe - Filipa Mendes (PT)
17:25 – 17:35	Abstract 85 - Lack of cystic fibrosis transmembrane conductance regulator causes low cortical bone thickness and high cortical porosity in newborn pigs - Frédéric Velard (FR)
17:35 – 17:45	Abstract 86 - Pancreatic ductal fluid and bicarbonate secretion of the ferret and pig models of cystic fibrosis (CF) - Emese Tóth (HU)
17:45-18:00	*Break*
18:00-19:00	**Closing Keynote lecture**
	Organoids for cystic fibrosis research - Jeffrey Beekman (NL)
20:30	*Dinner / Social Event*