



EuroBioFilms2022

Mallorca 31st Aug to 3rd Sep

Meliá Palma Marina Hotel

Av. de Gabriel Roca, 29, 07014 Palma, Balearic Islands



Final Scientific Program

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GENERAL OVERVIEW

EuroBioFilms2022	AUGUST 31st	SEPTEMBER 1st	SEPTEMBER 2nd	SEPTEMBER 3rd	
9:00 – 10:00	WORKSHOPS	Key Note Lecture	Key Note Lecture	Parallel session 9	
10:00 – 10:30		Coffee break	Coffee break	Parallel session 10	
10:30 – 12:30		Parallel session 1	Parallel session 2	Parallel session 5	
				Parallel session 6	
				Coffee break	
				FINAL PLENARY SESSION	
13:30 – 15:00			Poster viewing	Poster viewing	CLOSING CEREMONY Best communication awards Last remarks and farewell
15:00 – 17:00		Check in and registration	Parallel session 3	Parallel session 4	Parallel session 7
				Parallel session 8	Lunch/catering to carry on
17:00 – 17:30		Opening and welcome addresses	Coffee break	Coffee break	
17:30 – 18:30		Poster viewing	Poster viewing		
18:30 – 19:30	Opening lecture				
19:30	Opening reception (Wines & tapas)				
20:00			Congress dinner		

WORKSHOPS*

9:00 15:00

Antibiotic treatment strategies, PK/PD parameters and

resistance development in biofilm models

Estrella Rojo-Molinero(ES) and María Fernández Billón (ES)

In Vivo Biofilm models - establishment, endpoints and treatment testings

Claus Moser (DK) and Christian Lerche (DK)

15:00

Check in and registration

18:00

Opening and welcome addresses
(ESGB, LOC presidents and local authorities)

OPENING LECTURE

18:30 – 19:30

José María Miró (ES)

Clinical management of biofilm-driven infective endocarditis.

19:30

Opening reception (Wines & tapas)

*Workshops will take place on the Medicine classrooms and IdisBa laboratories from Son Espases Hospital (-1 I, F). Ctra. Valldemossa, 79. 07120 Palma de Mallorca

KEY NOTE LECTURE

Sussanne Haussler (DE)

Bacterial adaptation to biofilm growth.

9:00 –10:00

10:00 –10:30

Coffee break

Parallel session 1

Clinical Management of chronic osteoarticular and wound infections.

Chaired by Oscar Murillo and Kendra Rumbaugh

10:30 –12:30

10:30 **Oscar Murillo (ES)****Therapeutic strategies based on anti-biofilm efficacy of antibiotics: improving the prognosis of difficult-to-treat osteoarticular infections**

11:10 Trine Rolighed Thomsen (DK)

It is not the hole in the patient- but the whole patient. Biofilm is a key factor in wounds.

11:25 Lakshmi Deepika Bharatula (SG)

Sounding out *Pseudomonas aeruginosa* Biofilms for Wound healing application.

11:40 Christopher Doherty (UK)

An in vivo assessment of the antibiofilm effects of wound dressings

11:55 Anne Sofie Laulund (DK)

Hyperbaric oxygen therapy augments ciprofloxacin effect against *Pseudomonas aeruginosa* biofilm infected chronic wounds in a mouse model

12:10 Erin Magee (IE)

Non-invasive, 3D printed sensors for pathogen detection and therapeutic monitoring of wound biofilms

Parallel session 2

Mechanisms of antibiotic resistance in biofilms.

Chaired by Frank Schreiber and Mariló Macià

10:30 –12:30

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|-------|-------------------------------|---|
| 10:30 | Frank Schreiber (DE) | Resistance evolution in biofilms, biocides, and antimicrobial surfaces |
| 11:10 | Kasper Nørskov Kragh (DK) | TnSeq-guided identification of genes that play a role in antibiotic tolerance of <i>Pseudomonas aeruginosa</i> biofilms |
| 11:25 | Fauve Vergauwe (BE) | Experimental evolution of <i>Pseudomonas aeruginosa</i> biofilms as a tool to identify adaptive mechanisms leading to reduced antibiotic susceptibility |
| 11:40 | María Antonia Gomis Font (ES) | Resistance genomics of a new siderophore cephalosporin against <i>Pseudomonas aeruginosa</i> chronic respiratory isolates |
| 11:55 | Jenny Littler (UK) | The effect of growth environment on the antibiotic resistance of <i>P.aeruginosa</i> |
| 12:10 | Kim Hardie (UK) | Biocides trigger multiple regulatory systems in <i>Staphylococcus aureus</i> to induce antibiotic tolerance. |

12:30 –13:30

Lunch break

Parallel session 3

Heterogeneity and metabolic adaptations at the special biofilm microenvironment.

Chaired by Thomas Bjarnsholt and Susanne Häußler

15:00 – 17:15

15:00 Thomas Bjarnsholt (DK)**The infectious microenvironment of chronic infections, implications for treatment**

15:40 Jeremy Webb (UK)

Nitric oxide-mediated regulation of c-di-GMP: an adjunctive strategy for the control of biofilm-associated infection.

16:10 Tim Tolker-Nielsen (DK)

The small molecule Disperazol interferes with c-di-GMP signaling and induces dispersal of *Pseudomonas aeruginosa* biofilms

16:25 Janne G. Thöming (DE)

Evolution of biofilm-adapted gene expression profiles in clinical *Pseudomonas aeruginosa* isolates

16:40 Begoña Heras (AU)

Breakthroughs into understanding how bacteria form biofilms

16:55 Beatrice Bottura (UK)

Intra-colony channel morphology in biofilms is governed by nutrient availability and substrate stiffness

Parallel session 4

Alternative therapeutic strategies to fight biofilms.

Chaired by Joana Azeredo and Elisa Borghi

15:00 – 17:15

15:00 **Joana Azeredo (PT)****Strategies to improve phage efficacy against infectious biofilms**

15:40 Adline Princy Solomon (IN)

Design synthesis and therapeutic validation of a Quorum Quencher, UTIQQ to combat gestational UTI

15:55 Lesouhaitier Olivier (FR)

The human Atrial Natriuretic Peptide as a powerful weapon against *Pseudomonas aeruginosa* biofilm

16:10 Helena Bujdaková (SK)

Photodynamic inactivation – an efficient approach for eradication of microbial biofilms

16:25 Sixuan Zhang (CH)

Probiotics for treatment of skin wound infection: fighting biofilms and promoting tissue regeneration

16:40 Fabien Lamret (FR)

The promising antibiofilm effects of decellularized Wharton's Jelly

16:55 Makrina Totsika (AU)

Signal to kill: Nitroxide-induced biofilm dispersal for enhanced antibiotic eradication

17:15 – 17:45

Coffee break

17:45 – 18:45

Poster viewing

KEY NOTE LECTURE

Kendra Rumbaugh (USA)

9:00 –10:00

The pathogenicity of biofilms: the paradigm of chronic wounds.

10:00 –10:30

Coffee break

Parallel session 5**Novel technologies to study biofilms.**

Chaired by Eduard Torrents and Elena Jordana-Lluch

10:30 **Eduard Torrents (ES)****Application of nanotechnology in diagnosis and treatment of biofilm infections.**

10:30 –12:30

11:10 Nijamuddin Shaikh (IN)

Wound Infection On A Chip: A Human Relevant, Biomimetic Platform To Recapitulate The Dynamic Wound Infection Microenvironment

11:25 Lukas Kriem (DE)

The Use of Raman Technologies for Biofilm Mapping

11:40 Marius Colin (FR)

Development of in vitro biofilm model representative of prosthesis infection

11:55 Jana Wächter (DE)

Development of a three-dimensional human in vitro model of a biofilm-infected wound

12:10 Pia Katharina Kaiser (DE)

Label-free spatially resolved analysis of bacterial biofilms – effect of composition and maturation on drug penetration

Parallel session 6

Management of endovascular and catheter-related infections.

Chaired by David Lebeaux and Claus Moser

10:30 –12:30

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|-------|---------------------------|--|
| 10:30 | David Lebeaux (FR) | Biofilm and catheter-related infections: can we improve prevention or treatment? |
| 11:10 | Luisa Jordao (PT) | Catheter related bloodstream infection caused by <i>E.cloacae</i> and <i>Candida parapsilosis</i> : Are biofilms guilty? |
| 11:25 | Anthony Slate (UK) | Development of an infection responsive coating to combat crystalline biofilm formation on urinary catheters. |
| 11:40 | Jontana Allkja (PT) | Interactions of microorganisms within a urinary catheter four species biofilm model |
| 11:55 | J. Scott VanEpps (US) | Graphene quantum dots for in situ treatment of vascular catheter biofilms |
| 12:10 | Jiapeng Hou (DK) | Enhanced antibiotic and probiotic tolerance of an in vitro multi-species uropathogen biofilm model, useful for studies of catheter associated urinary tract infections |

12:30 –13:30

Lunch break

13:30 –15:00

Poster viewing

Parallel session 7

Optimizing antimicrobial efficacy to treat biofilm-related infection.

Chaired by Oana Ciofu and Antonio Oliver

15:00 – 17:00

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|-------|-----------------------------|--|
| 15:00 | Oana Ciofu (DK) | Strategies to potentiate antibiotics and avoid resistance |
| 15:40 | María Fernández-Billón (ES) | Therapeutic strategies based on antagonistic resistance mechanisms between novel B-lactam and carbapenem antibiotics to combat XDR <i>Pseudomonas aeruginosa</i> biofilms |
| 15:55 | Eva Benavent Palomares (ES) | Comparative efficacy of meropenem in extended infusion and intermittent bolus alone and with colistin against <i>Pseudomonas aeruginosa</i> biofilm: a pharmacodynamic study |
| 16:10 | Valentina Lember (DE) | Understanding the killing dynamics of levofloxacin treated <i>Pseudomonas aeruginosa</i> biofilms. |
| 16:25 | Cornelia Landersdorfer (AU) | Ceftolozane/tazobactam plus tobramycin against planktonic and biofilm states of hypermutable <i>Pseudomonas aeruginosa</i> isolates from paediatric patients with cystic fibrosis |
| 16:40 | Ramon Garcia Maset (UK) | Synergistic effects of synthetic nano-engineered antimicrobial -peptide polymers and antibiotics against <i>S. aureus</i> and <i>P. aeruginosa</i> biofilms in in vitro and ex vivo models |

Parallel session 8

Fungal biofilms in 2022 – how far we come?
 Chaired by Gordon Ramage and José Luis López-Ribot

15:00 **Gordon Ramage (UK)** **From the ABC's to the XTT's of fungal biofilm research: two decades of progress**

15:35 **José Luis López-Ribot (US)** **Antifungal agents for the treatment of biofilms: past, present and future.**

15:00 -17:00

16:10 Emerenziana Ottaviano (IT) *Pilocarpine interferes with sphingolipids metabolism in *Candida albicans**

16:25 Christopher Delaney (UK) **Understanding biofilm heterogeneity and adaptation in *Candida***

16:40 Isabel Valsecchi (FR) *Mixed biofilm of *Aspergillus fumigatus* and *Stenotrophomonas maltophilia*: microscopic visualization of galactosaminogalactan and galactomannan polysaccharides in the extracellular matrix*

17:00 – 17:30

Coffee break

17:30 –18:30

Poster viewing

20:00

Congress dinner

Parallel session 9

Unusual biofilm pathogens in cystic fibrosis chronic respiratory infections.

Chaired by Jaime Esteban and Antonio Oliver

9:00 – 11:00

9:00 **Jaime Esteban (ES)****Mycobacterium biofilms and chronic infections**

9:40 Mareike Müller (DE)

Impact of the sex steroid hormone estradiol on biofilm formation and phenotype of *Pseudomonas aeruginosa* isolates from cystic fibrosis patients

9:55 Mette Kolpen (DK)

Bacterial biofilms predominate in both acute and chronic human lung infections

10:10 Luciana Meneses (PT)

Use of phages adapted to *Pseudomonas aeruginosa* biofilms to tackle respiratory tract infections in Cystic Fibrosis (CF)

10:25 Yanina Nahum (US)

Low-frequency ultrasound significantly increases inactivation efficiency in *Pseudomonas aeruginosa* biofilms

10:40 Elena Jordana-Lluch (ES)

Modulation of *Pseudomonas aeruginosa* biofilm by corticosteroids in Chronic Obstructive Pulmonary Disease context

Parallel session 10

**Cooperation, competition or quite the opposite:
The complex interactions in biofilm communities**

Chaired by Niamh Harrington and Estrella Rojo-Molinero

9:00 – 11:00

9:00 **Niamh Harrington (UK)** **Polymicrobial interactions in cystic fibrosis biofilms.**

9:40 Jean-Paul MOTTA (FR) Epithelial Thrombin Modifies Gut Microbiota Biofilms And Fuels Dysbiosis.

9:55 Shaun Nelson Robertson (UK) Validating 3DOrbiSIMS and Liquid Extraction Surface Analysis (LESA) Mass Spectrometry for studying Pseudomonas quinolone signalling in polymicrobial biofilms.

10:10 Fatima El Garah (FR) Development of a multi-species biofilm model suggests a potential role of bacterial osmotolerance in cystic fibrosis related infections.

10:25 Karishma S Kaushik (IN) Multi-level structure and organization of mixed-species Pseudomonas aeruginosa and Staphylococcus aureus biofilms in a 4-D wound microenvironment.

10:40 Janette Harro (US) Methicillin-Resistant Staphylococcus aureus is Protective against Infection with Cystic Fibrosis-Adapted Pseudomonas aeruginosa in the CF-like Airway of Scnn1b Transgenic Mice.

11:00 – 11:30

Coffee break

FINAL PLENARY SESSION

11:30-

**Time to update the ESCMID
guidelines for the diagnosis and treatment
of biofilm infections?**

Niels Høiby (DK)

**The future of research in biofilms:
Towards which horizon should we walk?**

Tom Coenye (BE)

13:30

CLOSING CEREMONY
Best communication awards
Last remarks and farewell

11:30

Lunch/catering to carry on

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