

IV Jornada de Microbiologia (SCB)

Dimarts, 2 de Desembre de 2025



Sessió MATÍ

09:00 - 09:10 Inauguració de la **IV Jornada de Microbiologia - 2025**.

Maria Montserrat Sala (CSIC) - Vicepresidenta de la Societat Catalana de Biologia (SCB)
Eduard Torrents (IBEC-UB). – Coordinador de la Secció de Microbiologia de la SCB.

09:10 – 09:20 *Unlocking Scientific Progress with Open Access.*

Jesús García Cano (MDPI)

Presentacions orals (10 min + 5 min preguntes)

Moderador: Mireia López Siles. (UdG).

09:20 – 09:35 *Smart Peptide Design: AI-Powered Synthetic Biology Tools for Next-Generation Antibiotic Design.*

Marc Torrent Burgas. Department of Biochemistry and Molecular Biology. (UAB).

09:35 – 09:50 *Motile Nanofactories: Customizing Bacterial Flagella for Enzymatic and Inhibitory Functionalities.*

Eva Estevan Morió. Department of Structural and Molecular Biology. (IBMB-CSIC).

09:50 – 10:05 *Study of the combined effect of antibiotics and recombinant multidomain proteins based on host defense peptides for the treatment of antibiotic-resistant bacteria associated infections.*

Sergi Travé-Asensio Ruminant Production. Torre Marimon. (IRTA).

10:05 – 10:20 *Shedding light on PsyOmp38: a fluorescent chimaera unveils new insights into the antibiofilm mechanism of an Antarctic protein*

Diana Olimpo. Department of Chemical Sciences, University of Naples. Italy

10:20 – 10:35 *Screening antimicrobials under physiological in-vitro conditions using organoids*

Alessia Maranesi. Centre de Recerca en Sanitat Animal (CReSA). (IRTA-UAB).

10:35 – 10:50 *Regulatory Roles of (p)ppGpp and DksA in Virulence and Horizontal Gene Transfer in Salmonella enterica.*

Llorenç Fernández Coll. Department of Genetics, Microbiology and Statistics. (UB).

10:50 – 11:05 *Transcriptomic study of the interaction of Adherent-Invasive Escherichia coli with human organoid-derived monolayers*

Maria Núria Ramos-Corominas. Intestinal Disease Microbiology group. (UdG).

11:05–11:45 Sessió de pòsters – Coffee break

Moderador: Florencia Correa Fiz. (IRTA).

11:45 – 12:00 *Leaf microbiome community analysis to enhance apple breeding for resilience and sustainability*

Veredas Coleto-Alcudia. Centre for Research in Agricultural Genomics (CRAG).

12:00 – 12:15 *Comparative Effects of Fecal Microbiota and Filtrate Transplantation on Intestinal Health in Weaning Piglets*

Carla Tort-Miró. Institute of Agrifood Research and Technology (IRTA).

12:15 – 12:30 *Cognitive alteration and changes in gut microbiome in Post-COVID-19 condition.*

Marc Llíros Dupré. Universitat Central de Catalunya, Vic. (UVic).

12:30 – 12:45 *Integrating Microbiota Profiling to Evaluate the Adverse Effects of Nanoplastics on Gut Microorganisms Using Drosophila melanogaster*

Arnau Rocabert. Dept Genètica i Microbiologia. (UAB).

12:45 – 13:00 *Microbiome-Derived Prion-Like Proteins and Neurocognitive Implications.*

(P. ORAL 12) **Natalia Sánchez de Groot.** Departamento de Bioquímica. (UAB).

13:00 – 13:15 *In vitro establishment of simplified nasal microbiota in porcine nasal organoids and interactions with the respiratory pathogen Streptococcus suis*

Óscar Pérez-Paredes. Centre de Recerca en Sanitat Animal. (IRTA).

13:15 – 13:30 *Molecular Insights into Nitrogen-Transforming Microbial Communities across a Salinity Gradient.*

Yolanda García de Fuentes. University of Girona. (UdG).

13:30 – 13:45 *Temporal dynamics of Antibiotic Resistance Genes at a long-term coastal Mediterranean monitoring site.*

David Pere Arnal-Borras. Institut de Ciències del Mar. (ICM).

13:45–14:45 DINAR - Sessió de pòsters

Sessió TARDA

Moderador: Esther Julián. (UAB).

14:45 – 15:00 *Biochemical conversion of waste of Baby Kiwi (Actinidia arguta): fermentation to produce microbial protein and other compounds.*

Maria Augusta de Carvalho Silvello. Postharvest, Fruitcentre, Lleida. (IRTA).

15:00 – 15:15 *Innovative strategy using antagonist bacteria embedded in pullulan films to control postharvest fungal decay in nectarines.*

Guillem Cuenca. Postharvest, Fruitcentre, Lleida. (IRTA).

15:15 – 15:30 *Effects of arbuscular mycorrhizal and dark septate endophyte inoculation on grapevine growth under variable irrigation.*

Lucas Marginedas. Sustainable Plant Protection. (IRTA).

15:30 – 15:45 *Assessing viral pollution in coastal environments, using passive samplers, quantitative PCR and target enrichment sequencing.*

Ignasi Estarlich-Landajo. Laboratori de Virus Contaminants d'Aigua i d'Aliments (VIRCONT). (UB).

15:45 – 16:00 *Phenotypic and Genomic Insights into Listeria monocytogenes Isolated from Alternative Protein Foods.*

García-Álvarez de Toledo, Ignacio. Food Safety and Functionality, Finca Camps i Armet, Monells. (IRTA).

16:00 – 16:15 *Harnessing the infectivity and stability of phages against fire blight and black rot in a phage-based product for biocontrol*

Gloria Vique. Departament de Genètica, Microbiologia i Estadística. (UB).

16:15 – 16:45 Sessió de pòsters – Pausa

Moderador: Núria Blanco-Cabra. (IBEC).

16:45 – 17:00 *Studying the interactions of prosthetic joint infection associated pathogens in a Galleria mellonella infection model.*

Joel Álvarez-Puig. Bacterial infections and antimicrobial therapies group. (IBEC – UB).

17:00 – 17:15 *Impact of Conjugative Plasmids Carrying Antibiotic Resistance Genes on the Transcriptome and Physiology of Escherichia coli*

Carlos Jonay Jiménez. Department of Genetics, Microbiology and Statistics. (UB).

17:15 – 17:30 *The phenylacetic acid pathway is required for bacterial rhizosphere establishment*

(P. ORAL 24) **Luis Hurtado.** Center for Research in Agricultural Genomics. (CRAG – UB).

17:30 – 17:45 *Column-Scale Assessment of Soil-Aquifer Treatment for Pathogen and ARG Reduction.*

(P. ORAL 25) **Paula Andrea Beltran.** Institute of Environmental Assessment and Water Research. (IDAEA-CSIC).

17:45 – 18:00 Cloenda: **Virginia Aragón, Núria Blanco-Cabra, Esther Julián, Margarita Martínez Medina, Eduard Torrents.**

PÒSTERS

1. *Antimicrobial treatment reshapes the nasopharyngeal microbiome of dairy beef calves toward a pathogen-enriched state and modulates clinical recovery.* **Marc Bravo**, Carla Tort-Miró, Noemí Giler-Baquerizo, Maria Devant, Sònia Martí, Lourdes Migura-García.
2. *Selection of IgA coated microbiome from Endotracheal Aspireal samples.* **V. Monforte**, M. camprubí, E. Campaña-Duel, A. Areny-Balagueró, S. Quero, G. Julia, G. Gomà, A. Casabella, L. Suárez, G. Magri, M. Batlle, A. Artigas, E. Díaz, A. Ceccato.
3. *Stimulatory properties of bacterial isolates from the pig nasal microbiota.* **Chengcheng Zhao**, A Runa, Oscar Perez-Paredes, Noelia Carmona-Vicente, Florencia Correa-Fiz, Virginia Aragon.
4. *Description of bacteria isolated from the nasal cavities of newborn piglets and samples from their mothers.* **A. Runa**, N. Galofre-Mila, O. Pérez-Paredes, M. Sibila, V. Aragon.
5. *Characterization of Streptococcus suis strains as potential essential commensals in healthy swine.* **CE. Lopes**, N. Galofré-Milà, A. Runa, M. Sibila, F. Correa-Fiz, V. Aragon.
6. *Nasal and rectal microbiotas shape the antibody response to Glaesserella parasuis in pigs.* **Pau Obregon-Gutierrez**, Yasser Mahmmoud, Emili Barba-Vidal, Marina Sibila, Florencia Correa-Fiz, Virginia Aragón.
7. *Phage Cocktail Therapy for Pasteurella multocida Infection in a Porcine Nasal Organoid Model.* Xi Huang, Nuria Galofré-Milà, Oscar Pérez-Paredes, **Virginia Aragon**.
8. *Rational design of DNA vaccines against Klebsiella pneumoniae: from in silico analysis to in vivo validation.* M. Vicente-Pazos, A. Benito, J. Castro, L. Quílez Agraz, J. Velasco Castillo, C. Navarro Sánchez, L. Martín Ortega, S. Fernández-Piñán, M.J. McConnell, **Mireia López Siles**.
9. *Decoding antimicrobial resistance of Campylobacter coli isolated from chicken livers: phenotypic and genetic characterization.* **Pilar Gonzalez-Navarro**, Alicia Manzanares-Pedrosa, Florencia Correa-Fiz, Lauge Holm Sørensen, Teresa Ayats, Miquel Nofrarias, Rene S. Hendriksen, Marta Cerdà-Cuellar.
10. *The footprint of hypercapnia on inflammatory pathways and bacterial persistence during infection.* **E. Campaña-Duel**, A. Ceccato, A. Areny-Balagueró, V. Monforte, N. Purewal-Chohan, L. Blanch, L. Fernandez, A. Artigas, M. Camprubi-Rimblas.
11. *Analysis of anti-infectives on the Union List of Critical Medicines.* **Judith Hohenhorst**, Elisabet Montpart, Gabriela Calderó.
12. *Concatenating Bacteriocins: A New Frontier in Recombinant Antimicrobial Peptides.* **Eva Balan-Gutiérrez**, Anna Arís, Elena García-Fruitós.
13. *Hidden in the Prophage: Genomic Drivers of Persistent Staphylococcus aureus Infections.* **Judith Guitart-Matas**, Miquel Sánchez-Osuna, Inmaculada Gómez-Sánchez, Aina Jiménez-Ruiz, Víctor Monsálvez, Oriol Gasch, Oscar Q. Pich.
14. *Development of a decentralized solution for the removal of resistant bacteria and antimicrobial resistance genes from hospital effluents (LIFE-GENESYS Project).* **M. Sánchez-Osuna**, C. Díaz-García, A. Serra-Compte, I. Gómez-Sánchez, J. Guitart-Matas, A. Jiménez-Ruiz, A. Pérez-Ugarte, S. Ortonobes, V. Monsálvez, B. Perdignes, E. Mundaray, J. Coines, E. Santacruz, J. Pinedo, Á. Soriano, M. Fittipaldi, C. Barbuzana, M. A. Yáñez, O. Q. Pich.
15. *Dual approach to reduce toxicity in polymyxins and regain activity against colistin-resistant strains.* **F. Rabanal**, E. Asensio, M. Bäckberg, P. Baranczewski, Y. Cajal, F. Deroose, A. Ginosyan, M. Gros, M. I. Farfán, K.S. Jensen, K. Kloditz, E. Liepinsh, Z. Ling, A. Saleh, C. S. Matias, C. Vingsbo-Lundberg, T. R. Walsh.
16. *Exploring the role of Mincle in macrophage-mediated antitumor responses.* Noemí Traba, **Esther Julián**.
17. *Optimization of 3D culture conditions with five different tumor cell lines to monitor mycobacterial antitumor activity.* Núria Sabando-García, Noemí Traba, Rosa Maria Rabanal, **Esther Julián**.
18. *Biofilm formation of Tenacibaculum maritimum, a fish pathogenic bacteria, to evaluate the antimicrobial activity of fish skin mucus.* **Marc Tejero**, Ignasi Sanahuja, Carlos Balsalobre, Antoni Ibarz, Cristina Madrid, Laura Fernández-Alacid.
19. *Colistin-loaded nanoparticles in combination with alginate lyases enhance Pseudomonas aeruginosa's biofilm disruption.* **Albert Ripoll**, Núria Blanco-Cabra, Raphaëlle Palau, Jose Carlos Ibáñez, Damien Lupin, Iraidia Loínaz, Eduard Torrents.
20. *Burkholderia cenocepacia and Pseudomonas aeruginosa in dual-species models: Insights into population distribution, antibiotic susceptibility, and virulence.* **Júlia Alcàcer-Almansa**, Núria Blanco-Cabra, Eduard Torrents.
21. *XpertBiofilm: A simple and personalized diagnostic device for biofilm-related infections.* **Núria Blanco-Cabra**, Raphaëlle Palau, José Huguet, Josep Samitier, Romén Rodríguez-Trujillo, Eduard Torrents.
22. *Optimized alveolar epithelial cell model for chronic Pseudomonas aeruginosa and Staphylococcus aureus coinfections.* **Joana Admella**, Júlia Alcàcer-Almansa, Esther Julián, Eduard Torrents.
23. *FleQ-Dependent Regulation of the Ribonucleotide Reductase Repressor nrdR in Pseudomonas aeruginosa During Biofilm Growth and Infection.* Domingo Marchan, Alba Rubio, Lucas Pedraz, José María Hernández, Joana Admella, Núria Blanco-Cabra, **Eduard Torrents**.
24. *DnaA acts as a transcriptional activator that regulates nrdAB ribonucleotide reductase expression in Pseudomonas aeruginosa PAO1.* **Ángela Martínez-Mateos**, José María Hernández Pérez, Eduard Torrents.
25. *Fermentation of lupin flours to obtain a high-quality protein source.* **J. Lladó-Escollà**, Jonathan Coronel-León, A. Ribas-Agustí, R. Bou, A. Jofré.
26. *Targeting Bacterial Virulence by Computational Redesign of Quorum-Quenching Lactonases.* **Mario López-Martín**, Enrique Marcos Benteo, Ulrich Eckhard.
27. *Role of miRNAs shuttled by LPS-primed mesenchymal stem cell-derived extracellular vesicles in modulating macrophage activation.* Aina Areny-Balagueró, Marta Camprubi-Rimblas, Elena Campaña-Duel, **Navneet Purewal-Chohan**, Antoni Berenguer-Llargo, Adrián Ceccato, Antonio Artigas, Daniel Closa.
28. *Motile Nanofactories: Customizing Bacterial Flagella for Enzymatic and Inhibitory Functionalities.* **Eva Estevan Mori**, Kawtar Ben Larbi, Emma Bloch, Oriol Capell Sandin, Laura Garzón, Laia González, Julia Hedengrahn, Bryan Hogg, Ariana Ivanić, Ruby Van Kessel, Alea Radcke, Oscar Sánchez Martínez, Susana Merino, Nicholas Thomson, Mark Pallen, Ulrich Eckhard.
29. *Unveiling the Molecular Architecture and Substrate-Enzyme Interplay of a Bacterial Immune Evasion Protease.* **Shahenda Nassar**, Christina Machon, Ulrich Eckhard.
30. *CURIE: An AI Platform for Scientific Knowledge Extraction and Biological Interpretation.* **Antonio Monleón-Getino**, Víctor Mardanas-Gómez, Alejandro Rodríguez-Mena, Yovani Torres-Favier, Javier Méndez-Viera, Noa Scholz.
31. *Genomic characterization of Salmonella enterica isolates from pork carcasses.* **Maria Garcia-Ribas**; Belén Martín; Anna Jofré; Sara Bover-Cid.
32. *Global regulator (p)ppGpp shapes AIEC infection of human organoid-derived monolayers.* **Llorenç Fernandez Coll**, Maria Núria Ramos-Coromines, Isabella Dotti, Azucena Salas, Margarita Martínez-Medina.
33. *Effect of changes in colanic acid biosynthesis in Adherent-Invasive Escherichia coli pathogenic features.* Queralt Bonet-Rossinyol, Llorenç Fernández-Coll, Guillem Miranda Martínez, Erika Bibbo, Mireia López-Siles, **Margarita Martínez-Medina**.
34. *Phosphoproteomic analysis identifies a novel histone-like nucleoid-structuring (H-NS) protein as a Key Regulator of Virulence in Stenotrophomonas maltophilia.* **Juan C. Ortiz**, M. Díaz-Lobo, M. Gay, Gianluca Arauz-Garofalo, Marc García-Tirado, Andromeda-Celeste Gómez, Marc Bravo, Oscar Conchillo-Solé, M. Vilaseca, Xavier Daura, Isidre Giber, and Daniel Yero.
35. *A Novel qPCR-Based Approach for Armillaria mellea Detection in Prunus Rootstocks.* **Elisenda Castellet**, Pablo Vargas, Javier Parladé, Carmen Biel, Marc Viñas, Amaia Nogales.
36. *Bacterial and fungal community shifts in Prunus rootstocks affected by Armillaria root rot.* **Pablo Vargas**, Elisenda Castellet, Xavier Parladé, Carme Biel, Amèlia Camprubí, Cinta Calvet, Amaia Nogales.
37. *Assessing crAss-like phages as indicators of antibiotic resistance genes under environmental and disinfection conditions.* **Sara Morales-Cortés**, Laura Sala-Comorera, Clara Gómez-Gómez, Maite Muniesa, Cristina García-Aljaro.
38. *Abundance and dynamics of faecal bacteria and Vibrio spp. in plastics at sea.* **Laura Migliorato**, Jean-François Ghiglione, Anna Sanchez-Vidal, Elisenda Ballesté.
39. *Assessing the Toxicity and Functional Impact of Octocrylene and Potential Plant-Based UV-Filter Alternatives on Marine Sediment Microbiomes Using the MicroResp™ System.* **Julen Ansedé Zuazola**, Karen Paola Sepulveda, Carolina Jaime Rodriguez, Cristina Valhondo, Montserrat Folch, Silvia Diaz-Cruz.
40. *A novel phage infecting Nitrosomonas spp. for the biocontrol of nitrification in agricultural soils.* **Pedro Blanco-Picazo**, Laura Sala-Comorera, Gloria Vique, Pablo Quirós, María Dolores Ramos-Barbero, Clara Gómez-Gómez, Lorena Rodríguez-Rubio, Tula Yance-Chávez, Ignasi Salaet, Maite Muniesa.
41. *Antibiotic Resistance Genes in Seawater and Sediments along the Antarctic peninsula.* Gabriel Roscales, **Núria Márquez-Puchol**, Conxita Avila, Elisenda Ballesté.
42. *Microbial response to contaminants of emerging concern in coastal and open ocean communities.* **Jonah Díaz-Cruz**, Ulises Lora, Caterina R. Giner, David P. Arnal-Borràs, Albert Pina, Ramiro Logares, Marta Llorca, Mariella Farré, Carles Pelejero, Maria Montserrat Sala.