



IEC
Institut d'Estudis
Catalans



Societat Catalana
de **BIOLOGIA**

XXIV Jornada de Virologia – Virology Meeting 2025



OTV5: Virus of *Ostreococcus tauri*

Foto: D Vaque & YM Castillo

Organització: Secció de Virologia de la SCB

4 Novembre 2025

Coordinadores de la Secció de Virologia de la Societat Catalana de Biologia i coordinadores de la Jornada:

Sílvia Bofill-Mas i Susana Guix

Comitè científic:

Ana Angulo

Jordi Argilaguet

Núria Busquets

Nuria Izquierdo-Useros

Juan José López-Moya

Elisa Martró

Sofia Pérez del Pulgar

Josep Quer

Ferran Tarrés

Dolors Vaqué

Jurat Premi Millor Tesi Doctoral 2024-2025:

Yaiza M. Castillo de la Peña

Gerardo Ceada

Jordana Muñoz

Tarik Ruiz

Amb el suport de:



PROGRAMA

9:30h **BENVINGUDA** Sílvia Bofill-Mas & Susana Guix

9:40-10:10h **CONFERÈNCIA INAUGURAL**

Moderadora: D Vaqué

«El poder de l'1», «El poder del més petit» i «El poder dels virus pensants» (20'+10')

Dr. Manuel Martínez García, Universitat d'Alacant.

10:10-11:10h **SESSIÓ I – Virus-host interactions and pathogenesis**

Moderadors: S Perez del Pulgar & F Tarrés

PRESENTACIONS ORALS I

O1. ***In planta* assembly and structural analysis of begomovirus geminate virus-like particles for whitefly interaction studies (8'+2')**

Clara Ontañón(*), Centre for Research in Agricultural Genomics (CRAG), CSIC-IRTA-UAB-UB.

O2. **Cryo-SOFT X-RAY tomography ultrastructural characterization of tomato leaf cells infected with PSTVd viroid (8'+2')**

AJ Pérez-Berna, ALBA Synchrotron Light Source.

O3. **Optimization of a Porcine Lung Organoid Model for RSV Infection (8'+2')**

Rytis Boreika, IrsiCaixa, Hospital Germans Trias i Pujol.

O4. **On the steps to understanding SARS-CoV-2 infection in human renal epithelial cells (8'+2')**

Irene Silva Ruiz(*), IrsiCaixa, Hospital Germans Trias i Pujol.

O5. **Vectorial release of novel MLB Human Astrovirus in polarized intestinal enteroids (8'+2')**

Cristina Santiso-Bellón, Universitat de Barcelona.

O6. **Spatial profiling of HBV and HDV infection in human liver samples (8'+2')**

Maria Saez-Palma(*), IDIBAPS, Hospital Clínic, University of Barcelona, CIBEREHD.

11:10-11:20h **PRESENTACIÓ SPONSORS**

11:20-11:50h **PAULSA CAFÈ**

11:50-13:00h **SESSIÓ II. Viral ecology, "one health" and virus surveillance studies**

Moderadors: J López-Moya & J Argilaguet

PRESENTACIONS ORALS II

O7. **Eurasian goshawk (*Astur gentilis*) and ecological factors as indicators of West Nile virus circulation in Northeastern Spain (8'+2')**

Laura Blanco-Sierra, IRTA, Animal Health Program, Centre de Recerca en Sanitat Animal (CReSA), Campus de la Universitat Autònoma de Barcelona (UAB).

O8. Circulation of Usutu virus in wild birds in Catalonia, 2021-2024 (8'+2')

Arjola Leka, IRTA, Animal Health Program, Centre de Recerca en Sanitat Animal (CReSA), Campus de la Universitat Autònoma de Barcelona (UAB).

O9. Hepatitis E circulation in urban and natural environments of Catalonia (8'+2')

Gisela Juliachs-Torroella(*), Universitat de Barcelona.

O10. Targeted NGS-Based Surveillance of Potentially Pandemic Viruses in Roe Deer Populations from Catalonia (8'+2')

Aina Carrique, Universitat de Barcelona.

O11. From feather to fur: gull and mink H5N1 clade 2.3.4.4b HPAIV in their original hosts and their spillover and spillback potential (8'+2')

Ferran Tarrés-Freixas, IRTA, Animal Health Program, Centre de Recerca en Sanitat Animal (CReSA), Campus de la Universitat Autònoma de Barcelona (UAB).

O12. Assessing passive and grab sampling for wastewater-based surveillance in open streams of a low-income setting (8'+2')

Ignasi Estarlich-Landajo(*), Universitat de Barcelona.

O13. Enhanced virological analysis of leafy greens and berries: comparing novel and reference methods (8'+2')

Abdeljabbar El-Boubekri(*), Universitat de Barcelona.

13:00-14:15h TAULA RODONA

Moderadora: S Bofill-Mas

Què pot aportar la virologia a la salut animal? Reptes emergents i eines de control

- Jordi Baliellas, Grup de Sanejament Porcí (GSP)
- Mar Biarnés, Centre de Sanitat Avícola de Catalunya i Aragó
- Pere Ordis, HIPRA
- Núria Ribas, Servei de Sanitat Animal, Dept Acció Climàtica, Alimentació i Agenda Rural

14:15-15:40h DINAR

15:40-16:10h PREMI A LA MILLOR TESI DOCTORAL EN VIROLOGIA 2024-2025

Moderadora: S Guix

Prior vaccination maintains lymphatic structure organisation and avoids post acute virus infection sequelae (20'+10')

Paula Cebollada Rica, Departament de Medicina i Ciències de la Vida, Universitat Pompeu Fabra

16:10-17:00h **SESSIÓ III – Viral immunity and antivirals**

Moderadors: J Quer & E Martró

PRESENTACIONS ORALS III

O14. **Adjuvant-induced macrophage activation compromises BA71ΔCD2-mediated protection against African swine fever virus (8'+2')**

Aida Tort-Miró(*), IRTA, Animal Health Program, Centre de Recerca en Sanitat Animal (CRESA), Campus de la Universitat Autònoma de Barcelona (UAB).

O15. **Long-term sequelae of SARS-CoV-2 infection in a transgenic mouse model (8'+2')**

Carla Ruiz-Casas(*), IRTA, Animal Health Program, Centre de Recerca en Sanitat Animal (CRESA), Campus de la Universitat Autònoma de Barcelona (UAB).

O16. **Lamivudine decreases a type I interferon cellular signature linked to viral sensing in people with mild cognitive impairment (8'+2')**

Sandra Franco, IrsiCaixa.

O17. **Broadly neutralizing ACE2-targeting monoclonal antibodies against SARS-CoV-2 variants and other sarbecoviruses (8'+2')**

Pablo Hernández-Luis(*), University of Barcelona.

O18. **Novel Super Hydrophilic Ferromagnetic Filters efficiently inactivate enveloped viruses (8'+2')**

Eloi Franco-Trepas, IrsiCaixa, Germans Trias i Pujol Research Institute (IGTP), Universitat Autònoma de Barcelona (UAB).

17:00-17:30h **SESSIÓ IV – Keynote Lecture**

Moderadora: N Izquierdo-Useros

Cytoplasmic mRNA decay by viral and antiviral nucleases promotes transcriptional repression (20'+10')

Prof. Britt Glaunsinger, UC Berkeley, USA

17:30-17:45h **PAUSA**

17:45h **PREMIS I CLOENDA**

(*) *Estudiants de doctorat que opten al premi a millor presentació.*

ORAL PRESENTATION ABSTRACTS

O1. *In planta* assembly and structural analysis of begomovirus geminate virus-like particles for whitefly interaction studies

C Ontañón¹, K Saunders², G Lomonossoff², JJ López-Moya¹

¹ Centre for Research in Agricultural Genomics (CRAG), CSIC-IRTA-UAB-UB, Barcelona, Spain

² John Innes Centre (JIC), Norwich, United Kingdom

Members of the genus *Begomovirus*, family *Geminiviridae*, are widespread plant pathogens that infect a broad range of hosts, including economically important crops from the *Solanaceae* and *Cucurbitaceae* families. These viruses are predominantly transmitted by whiteflies, with *Bemisia tabaci* being the main vector, and understanding the structural organization of virions is essential for elucidating mechanisms underlying vector specificity and transmission efficiency. The begomoviral genomes consist of one or two circular single-stranded DNAs encapsidated by a single coat protein (CP), which assembles into characteristic geminate particles composed of two joined icosahedral-shaped units. In this study, we conducted structural analyses of Tomato leaf curl New Delhi virus (ToLCNDV) using both native virions and virus-like particles (VLPs) generated via a plant-based expression system (Saunders et al., 2020). Virions were purified from infected zucchini plants, while VLPs were produced in *Nicotiana benthamiana* through transient expression of the ToLCNDV CP, driven by a self-replicating DNA derived from the alpha-satellite of *Ageratum yellow vein virus* (AYVV). CP expression was confirmed by western blot using specific antibodies, and the resulting VLPs were characterized by mass photometry and transmission electron microscopy. Our results confirmed the successful production of VLPs resembling full-sized geminate virions along half-sized particles, likely reflecting the packaging of the shorter replicating DNA template. These VLPs offer a promising platform for high-resolution structural studies via cryo-electron microscopy and for exploring virus-vector-host interactions (Chase et al. 2023), with potential applications in the development of targeted begomovirus control strategies.

Saunders K, Richardson J, Lawson DM, & Lomonossoff GP. 2020. Requirements for the packaging of geminivirus circular single-stranded DNA: effect of DNA length and coat protein sequence. *Viruses*, **12**(11):1235.

Chase O, Javed A, Byrne MJ, Thuenemann EC, Lomonossoff GP, Ranson NA & López-Moya JJ. 2023. Cryo-EM and stability analysis of virus-like particles of potyvirus and pomovirus infecting a common host. *Commun Biol*, **6**(1):433.

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