

SYMPOSIUM PROGRAM



GEIVEX 7th INTERNATIONAL SYMPOSIUM
Palma, Mallorca
23rd -25th October 2024

EDUCATIONAL DAY
22nd October 2024

Organizers:



Webpage:



EDUCATIONAL DAY: "CLINICAL ASPECTS OF EVs ALREADY A REALITY?"

22nd October (Tuesday)

Clinical aspects of EVs. Already a reality?

8:30 **Registration**

Gaspar Melchor de Jovellanos Building's Hall.

9:00 **Welcome and introduction**

Joana M. Ramis and **Manuel Gómez-Florit**, Health Research Institute of Balearic Islands (IdISBa), Research Institute of Health Sciences (IUNICS), University of Balearic Islands (UIB).

9:30 **EVs as biomarkers in infectious diseases.**

Pilar Martín-Duque, Instituto de Salud Carlos III (ISCIII), Centro de Terapias Avanzadas, Instituto de Investigación Sanitaria de Aragón (IIS Aragón).

10:00 **EVs as a source of biomarkers in neurological diseases.**

Rocío Pérez González, Instituto de Investigación Sanitaria y Biomédica de Alicante (ISABIAL).

10:30 **From urinary EVs to *in vitro* diagnostics in chronic kidney disease: a long and (not finished) winding road.**

Francesc E. Borràs, Germans Trias i Pujol Research Institute (IGTP).

11:00 **Coffee break**

11:30 **EVs for implant and surgery induced injury – start MoAning and get clinical.**

Mario Gimona, Head of Manufacturing GMP, Head of Research Program "Nanovesicular Therapies", Paracelsus Medical University Salzburg.

12:00 **EVs as delivery agents.**

Lydia Alvarez-Erviti, Centro de Investigación Biomédica de La Rioja (CIBIR).

12:30 **EVs as vaccines.**

Hernando del Portillo, Barcelona Institute for Global Health (ISGlobal), Germans Trias i Pujol Research Institute (IGTP).

13:30 **Lunch**

15:00-18:30 **Identification and characterization of EVs by flow cytometry and NTA.**

Coordinated by **Marcel·la Franquesa** and **Óscar Fornas**.

16:00-18:30 **Basic techniques Workshop.**

Coordinated by **María Yáñez-Mó** and **Pilar Martín-Duque**.

Each technique will be presented as a short video of the protocol in wetlab with discussion of details and analysis onsite.

- **SP-IRIS/Exoview: Sample preparation, protocols and data processing.** **Nerea Lago-Baameiro**, Instituto de Investigación Sanitaria de Santiago de Compostela (IDIS).
- **Isolation of EVs from tissue samples.** **Dra. Ana Talamillo**, Center for Cooperative Research in Biosciences (CIC bioGUNE).
- **TEM negative staining and analysis with exosome analyser.** **Joaquín Morales**, Centro de Biología Molecular Severo Ochoa (CBMSO), Universidad Autónoma de Madrid (UAM).
- **EV uptake: drawbacks of different uptake methods. Protocols of maleimide staining and Renilla-carrying EVs. Data analysis.** **Miguel Palma-Cobo**, Centro de Biología Molecular Severo Ochoa (CBMSO), Universidad Autónoma de Madrid (UAM).
- **Immunocapture of EVs for Analysis by Flow Cytometry and ELISA.** **Dra Carmen Campos-Silva**, Universidad Loyola.
- **Mouse brain EV injection and visualization. Data analysis.** **Aida de la Cruz-Gambra**, Achucarro Basque Center for Neuroscience y Universidad del País Vasco (UPV/EHU).



23rd October (Wednesday)

- 8:00 Registration**
Gaspar Melchor de Jovellanos Building's Hall.
- 8:45 Welcome**
Institutional welcome & welcome by the Local Organizing Committee.
Maria Yáñez-Mó, GEIVEX president.
Room: Gaspar Melchor de Jovellanos Building's Auditorium
- 9:00 Opening lecture: The hidden microproteome as a source of novel exosome-secreted extracellular messengers.**
Maria Abad, Principal Investigator at Altos Labs, Cambridge Institute of Science, Cambridge, UK, and at Vall d'Hebron Institute of Oncology (VHIO), Barcelona, Spain.
Chair: Héctor Peinado, CNIO.
- 10:00 GOLD SPONSOR: Extracellular vesicles: paving the way to automation, standardisation, and scale-up in precise isolation and single-particle characterisation.** Joshua Karam, IZON.
- 10:15 GOLD SPONSOR: EXODUS, high-efficiency isolation of exosomes and its application in diagnosis and treatment.** Zoey Wang and Jiaqian Wang, EXODUS
- 10:30 Coffee break**
- 11:00 Session 1 – EVs in cancer.**
Chairs: Mar Valés-Gómez, CNB-CSIC; Héctor Peinado, CNIO.
- Application of extracellular vesicles in 3d cell culture model of primary hepatocytes and liver tumoral cells. **Silvia Lopez Sarrio**, Center for Cooperative Research in Biosciences (CIC bioGUNE).
 - Depicting the adipose tissue secretome in the breast cancer microenvironment. **Alejandro Pinedo Serrano**, University of Castilla-La Mancha.
 - The role of extracellular vesicles glycosylation in tumour-adipose tissue communication. **Cátia Ramos**, University of Porto.
 - Exploring tumor derived extracellular vesicles from triple negative breast cancer tumor-on-a-chip and 3D models. **María Fidel Lledó**, Vall d'Hebron Institut de Recerca (VHIR).
 - EV-DNA: From cell survival to tumor progression. **Enrique Baston**, Spanish National Cancer Research Center (CNIO).
 - Lemon-derived extracellular vesicles for targeted siRNA delivery in oncogene silencing. **Sara Giancaterino**, University of Bologna.
- 12:10 GOLD SPONSOR: Make EVs as easy as cells: discover the NovoCyte flow cytometers.** Gabrielle Dammone, Field Application Scientist, Agilent United Kingdom.
- 12:25 GOLD SPONSOR: Nanoimager: Life at the Nanoscale.** Laura Woythe, Field Application Scientist, ONI.
- 12:40 Session 2 – EVs in neuro and other complex diseases.**
Chairs: Jimena Baleriola Achucarro Basque Center for Neuroscience y Universidad del País Vasco UPV/EHU; Rocío Pérez González. Instituto de Investigación Sanitaria y Biomédica de Alicante (ISABIAL).
- Differential expression and interaction of Alzheimer's disease linked proteins in brain extracellular vesicles. **María Mulet Fernández**, University of Lleida (UdL).
 - Metabolic analysis of extracellular vesicles isolated from human brain tissue in Alzheimer's disease context. **Juan Manuel Falcon-Perez**, Center for Cooperative Research in Biosciences (CIC bioGUNE).
 - Alix as a novel biomarker in Huntington's disease: beyond extracellular vesicles. **Rocío Pérez-González**, Instituto de Investigación Sanitaria y Biomédica de Alicante (ISABIAL).
- 13:15 Lunch**
- 14:45 Session 3 – Liquid biopsy and biomarkers.**
Chairs: Pilar Martín-Duque, Instituto de Salud Carlos III; Gloria Alvarez-Llamas, IIS-Fundación Jiménez Díaz.
- Identification of extracellular vesicle surface signature in plasma from hypertensive patients and its association with albuminuria. **Olga Martinez Arroyo**, INCLIVA Biomedical Research Institute.
 - ExoGAG: The new era of human milk glycomics. **María Pereira Hernández**, Health Research Institute of Santiago de Compostela (IDIS).
 - Plasma exosomes from hypertensive and diabetic patients with renal dysfunction are enriched in redoximirs and fibromirs. **Ana Flores Chova**, INCLIVA Biomedical Research Institute.
 - A rapid and highly sensitive approach to the detection of extracellular vesicles. **María Carmen Blanco-López**, Universidad de Oviedo.
 - Proteomics of urinary extracellular vesicles highlight the involvement of vitronectin and the fibrinolytic pathway as mechanisms underlying renal fibrosis in kidney transplant patients. **Marta Clos-Sansalvador**, Germans Trias i Pujol Research Institute (IGTP).
 - Comprehensive proteomic analysis of porcine seminal extracellular vesicles identifies *in vivo* fertility biomarkers. **Pablo Marín-Díaz**, University of Murcia (UMU).
 - MiRNAs from tear fluid-derived extracellular vesicles to identify patients at high-risk of fibrotic lesions after glaucoma surgery. **Marta San Roque**, Health Science Research Institute Germans Trias i Pujol (IGTP).
 - GLAST+ extracellular vesicles are decreased in people with primary progressive multiple sclerosis. **Rocío del Carmen Bravo Miana**, Biogipuzkoa Health Research Institute.
 - Extracellular vesicles identified as key mRNA carriers of ALK translocations in non-small cell lung cancer patients through optimized size exclusion chromatography. **Beatriz Benayas**, Centro de Biología Molecular Severo Ochoa (CBMSO), IIS-Princesa, Universidad Autónoma de Madrid (UAM).
- 16:20 GOLD SPONSOR: State-of-the-art technologies for EV research: from pathological biomarkers discovery to therapeutic EV production.** Aitor González, Business Line Manager, Izasa Scientific
- 16:35 Coffee break**
- 17:15 Flash talks for Poster presentation.**
Chair: María Yáñez-Mó, UAM.
- 18:45 Poster Walk.**
With Mallorcan finger food

24th October (Thursday)

9:15 **Session 4 – Advances in EV methodology.**

Chairs: María Pardo, Instituto de Investigación Sanitaria de Santiago de Compostela; Manuel Gómez-Florit, Research Institute on Health Sciences-IUNICS (UIB) IdISBa.

Room: Gaspar Melchor de Jovellanos Building's Auditorium

- The corona of small extracellular vesicles from porcine seminal plasma has a protective effect against DNA oxidation. **Jordi Ribas-Maynou**, University of Murcia (UMU).
- Iron oxide nanoparticle-based labeling of MSC-EV: evaluating efficacy and purity for MRI imaging. **Sergio Garcia**, Health Science Research Institute Germans Trias i Pujol (IGTP).
- Pomegranate isolated-nanovesicles treatment relapses cutaneous inflammation: *in vivo* evidences. **Miquel Martínez-Navarrete**, Universitat de València (UV).
- Study and validation of the metabolic signature of extracellular vesicles as a prognostic and predictive marker in pancreatic cancer. **Pilar Espiau Romera**, Instituto de Investigación Sanitaria Aragón (IIS Aragón).
- Prediction of potential plant extracellular vesicle markers by orthology search. **Ibone Rubio**, Universidad Autónoma de Madrid (UAM), Instituto de Investigación Sanitaria del Hospital Universitario La Paz.
- Sorting single EV through flow cytometry allows separation of antibody-labeled EV and downstream transcriptomic analysis. **Marta Monguió-Tortajada**, University of Lausanne (UNIL).

10:25 **GOLD SPONSOR: CytoFLEX nano: new tool in Extracellular Vesicle analysis.** **Jorge Antonio Formaro**, Beckman Coulter.

10:40 **GOLD SPONSOR: Full Spectrum Flow Cytometry: A powerful technology to detect and isolate extracellular vesicles.** **Óscar Fornas**, Cytek Biosciences.

10:55 Coffee break

11:30 **Morning lecture: Antimicrobial peptides in helminth secretions – a gold mine for drug discovery?**
Cinzia Cantacessi, Professor of Parasite Infection Biology, Department of Veterinary Medicine University of Cambridge, Cambridge, UK.
Chair: Javier Sotillo Gallego, Centro Nacional de Microbiología.

12:30 **Session 5 – EVs in infection and immunity.**

Chairs: Carmen Fernández Becerra, ISGlobal, Barcelona Institute for Global Health, Hospital Clínic - Universitat de Barcelona; Rafael Prados, Universidad Autónoma de Madrid.

- Nanovesicles derived from frozen homogenized fasciola hepatica adults as an alternative source of extracellular vesicles for functional studies. **Christian M. Sánchez López**, Universitat de València (UV), IIS La Fe.
- Proteomic composition of extracellular vesicles derived from the interaction of *Trypanosoma cruzi* with myoblasts and intestinal cells. **Marcel I. Ramirez**, Universidade Federal do Paraná.

- Clathrin and caveolin mediated endocytosis define the extracellular entry during *G. intestinalis* and host cells interaction. **Marcel I. Ramirez**, Universidade Federal do Paraná.

13:05 **GOLD SPONSOR: TBD. Presenter**, Solmeglas/Particle Metrix.

13:20 Lunch

14:45 **Afternoon lecture: Bringing new healthcare technologies to market: challenges and opportunities.**

Roberto de la Rica, Principal Investigator at Multidisciplinary Sepsis Group; Health Research Institute of the Balearic Islands (IdISBa), Palma, Spain.
Chair: Marta Monjo, Research Institute on Health Sciences-IUNICS (UIB), IdISBa.

15:45 **Session 6 – Fundamental EVs biology.**

Chairs: Juan Fafián-Labora, University of A Coruña (UDC), Interdisciplinary Center for Chemistry and Biology (CICA), INIBIC - University Hospital Complex A Coruña (CHUAC); Marcel-la Franquesa, Institut Germans Trias i Pujol (IGTP).

- Genome-wide-CRISPR/CAS9 screening identifies the commander recycling complex as a key player in EV cargo delivery. **Miguel Palma Cobo**, Instituto Universitario de Biología Molecular (IUBM), Universidad Autónoma de Madrid (UAM), Centro de Biología Molecular Severo Ochoa (CBMSO), IIS-IP.
- Looking for the missing links between small RNAs and mycobacterial EVs. **José Luis Serrano Mestre**, Universidad Autónoma de Madrid (UAM).
- Role of N-glycosylation on MSC-EV uptake in an *in vitro* model of TNF-stimulated endothelium: functional implications in cellular extravasation under dynamic flow conditions. **Marta Clos**, Germans Trias i Pujol Research Institute (IGTP).
- Superoxide dismutase and adenosine deaminase activity levels differ between porcine seminal extracellular vesicles subpopulations. **Pablo Martínez Díaz**, University of Murcia (UMU).
- Disrupt senescence through extracellular vesicles biogenesis reduction. **Sergio Lucio Gallego**, University of A Coruña (UDC).
- The circadian cargo of extracellular vesicles. **Antonia Tomas Loba**, University of Murcia (UMU).
- A KRas-hnRNPA2B1 axis regulates microRNA sorting into exosomes. **Albert Lu**, Universitat de Barcelona (UB), Institut d'Investigació Sanitària Albert Pi i Sunyer (IDIBAPS).

17:05 **GOLD SPONSOR: Development of an automated workflow for purification of exosomes and exosomal RNA.** **Eric Vincent**, Product Manager, Promega.

17:20 Coffee break

18:00 **GEIVEX general assembly.**

20:30 **Symposium dinner (Optional).**
Restaurante Andana.

25th October (Friday)

9:15 Session 7 – EV-Based therapy and translational medicine (I).

Chairs: María Yáñez-Mó, UAM; Ibane Abasolo, Vall d'Hebron Research Institute (VHIR), Centro de Investigación Biomédica en Red, Bioingeniería, Biomateriales y Nanomedicina (CIBER-BBN).
Room: Gaspar Melchor de Jovellanos Building's Auditorium

- Extracellular vesicles from Treg obtained from human thymus suppress the proliferation of allogeneic lymphocytes. Marjorie Pion, Gregorio Marañón Health Research Institute (IiSGM).
- The most expressed miRNA from Treg-derived extracellular vesicles, from the human thymus, embedded in milk-derived EV, did not exhibit suppressive ability on primary human immune cells. Marjorie Pion, Gregorio Marañón Health Research Institute (IiSGM).
- Polymeric nanoparticles-loaded extracellular vesicles as biomimetic nucleic acid vaccines. Cristina Fornaguera Puigvert, Institut Químic de Sarrià (IQS), Universitat Ramon Llull (URL).
- Design of glycolipid-functionalized extracellular vesicles for their selective targeting to dendritic cells. Jordi Guixeras Carreras, Institut Químic de Sarrià (IQS), Universitat Ramon Llull (URL).
- Hyaluronic acid-based hydrogels for platelet-derived extracellular vesicles delivery in tendinopathy. Kristiyan Stiliyanov Atanasov, Institut d'Investigació Sanitària Illes Balears (IdISBa).
- The journey of extracellular vesicles as trojan horses of therapeutic nanoparticles against cancer. María Sancho-Albero, Instituto de Investigación Sanitaria de Aragón (IIS Aragón).

10:25 **GOLD SPONSOR:** See what you sort, sort what you see: New sorter technology (Spectral FX and CellView) applied to small particle. Óscar Fornas, Becton Dickinson (BD).

10:40 Coffee break

11:15 Session 8 – EV Based therapy and translational medicine (II).

Chairs: Lydia Alvarez Ertvi, Center for Biomedical Research of La Rioja; Jose Antonio López-Guerrero, FIVO.

- Enhancing pressure ulcer healing with platelet-derived extracellular vesicles: histological evaluation on an *in vivo* model. Andreu Miquel Amengual Tugores, Universitat de les Illes Balears (UIB), Institut d'Investigació Sanitària Illes Balears (IdISBa).
- Effect of ocular surface extracellular vesicles on corneal wound healing. Laura García-Posadas, Instituto Universitario de Oftalmobiología Aplicada (IOBA), Universidad de Valladolid (UVa).
- Cardiomyocytes-EVs improved COVID-19-derived cardiac damage and fibrosis. Marta Prieto-Vila, Tokyo Medical University.
- Curcumin-loaded milk-derived EVs: a natural approach for liver nanotherapy. Leyre Iturmendi, Instituto de Investigación Sanitaria Gregorio Marañón (IiSGM).

12:00 **Closing lecture: Extracellular vesicles for RNA delivery: from mechanistic insights to therapeutic applications.**

Pieter Vader, Associate Professor. CDL Research & Department of Experimental Cardiology. University Medical Center Utrecht. The Netherlands.

Chair: Joana Maria Ramis, Research Institute on Health Sciences-IUNICS (UIB) IdISBa

13:00 Closing remarks and awards.

