



Symposium program

Wednesday 26th October

8:00 Registration

8:45 Welcome remarks

Institutional welcome

Welcome by the Local Organizing Committee.

GEIVEX president

9:15 **OPENING LECTURE:**

Maria Elena Bottazzi, Baylor College of Medicine, Houston

“Past, Present and Future of Neglected Tropical Disease Vaccines: How the COVID-19 experience will accelerate their development ”

Chair: Antonio Marcilla (Universitat de Valencia, Valencia).

10:30 **SESSION I: EVS IN INFECTION AND IMMUNITY**

Chairs: Lydia Álvarez-Erviti (Center for Biomedical Research of La Rioja (CIBIR), Logroño) and Mar Valés-Gómez (CNB-CSIC, Madrid).

10:30- **OC1.** Dynamin-like proteins are required for secretion of extracellular vesicles and virulence of Mycobacterium tuberculosis.

Vivian Salgueiro Toledo (Universidad Autónoma de Madrid)

10:40- **OC2.** Exploring the role of Extracellular Vesicles from the liver flukes Fasciola hepatica and Dicrocoelium dendriticum in the parasite-host communication.

Christian Miquel Sánchez López (Universidad de Valencia)

10:50- **OC3.** Functional characterization of P. vivax genes preferentially expressed in the human bone marrow and spleen and the role of EVs in these hemopoietic tissues.

Alberto Ayllón (ISGLOBAL - Institut de Salut Global de Barcelona)

11:00- **OC4.** Two cargo proteins of Fasciola hepatica EVs show different effects on hepatic stellate cells and alter macrophages cytokine profile.

Aranzazu González (Universidad de Valencia)

11:10- **OC5.** Proteomics characterization and functional analysis of circulating extracellular vesicles in Chagas disease patients with different clinical manifestations.

Carmen Fernández Becerra (ISGLOBAL - Institut de Salut Global de Barcelona)

11:30 Coffee break

12:00 **SESSION II: LIQUID BIOPSY AND BIOMARKERS**

Chairs: Héctor Peinado (CNIO, Madrid) and Jose Antonio López-Guerrero (IVO, Valencia)

<p>12:00- OC6. Plasma extracellular small RNA biosignature identifies early symptomatology in Huntington's Disease. Marina Herrero Lorenzo (Universitat de Barcelona)</p>
<p>12:10- OC7. EXOGAG, the new method for the isolation of Extracellular Vesicles and Glycoproteins, unmask biomarkers and a new molecular mechanism in kidney disease. Marta Vizoso González (Fundación Instituto de Investigación Sanitaria de Santiago de Compostela - IDIS)</p>
<p>12:20- OC8. Non-coding RNA profile in liquid biopsy associated with systemic lupus erythematosus activity, relevance of exosomal fraction. Olga Martínez Arroyo (INCLIVA Biomedical Research Institute, Valencia)</p>
<p>12:30- OC9. From urinary EVs to clinical testing: the road of a new biomarker for renal fibrosis in kidney transplanted patients. Marta Clos Sansalvador (IGTP)</p>
<p>12:40- OC10. Circulating extracellular vesicles carry metabolic dysregulation and obesity-associated comorbidities risk biomarkers with application to the clinical practice. Nerea Lago Baameiro (Instituto de Investigación Sanitaria de Santiago de de Compostela -IDIS)</p>
<p>12:50- OC11. Proteomic analysis of urinary extracellular vesicles reveals sub-clinical cardiorenal risk with added value to urine analysis. Miriam Anfaíha Sánchez (IIS - Fundación Jiménez Díaz)</p>

13:15 Lunch

14:15 **SPONSORED PRESENTATIONS**

Chair: Héctor Peinado (CNIO, Madrid)

15:20 SESSION III. EVs IN CANCER

Chairs: Francesc Borrás (Institut Germans Trias i Pujol, Badalona) and Atocha Romero (FIB Hospital Universitario Puerta de Hierro, Madrid)

<p>15:20- OC12. Effects of MAPK inhibitors targeted therapy on metastatic melanoma cell surface, soluble and EV-associated immune modulating NKG2D-ligands.</p> <p>Carmen Campos Silva (Spanish National Center of Biotechnology)</p>
<p>15:30- OC13. Study and validation of the metabolic signature of extracellular vesicles as a prognostic and predictive marker in pancreatic cancer.</p> <p>Pilar Espiau Romera (IIS Aragón)</p>
<p>15:40- OC14. The extracellular vesicle senescence-associated secretory phenotype (evSASP) in the intercellular communication during cancer chemotherapy.</p> <p>Valentín Estévez Souto (Health Research Institute of Santiago de Compostela)</p>
<p>15:50- OC15. Extracellular vesicles versus metalloprotease cleavage: a novel regulatory mechanism for NKG2D-Ligands.</p> <p>Silvia López Borrego (National Centre of Biotechnology - CNB)</p>
<p>16:00- OC16. Relevance of melanoma-derived EV-DNA in tumor progression.</p> <p>Enrique Bastón de la Fuente (Spanish National Cancer Research Centre)</p>
<p>16:10- OC17. Cancer intercellular communication: glycans as mediators of cellular targeting and reprogramming.</p> <p>Daniela Freitas (i3S, University of Porto)</p>
<p>16:20- OC18. The role of glycosylated extracellular vesicles in modulating the phenotypic behaviour of recipient gastric cancer cells.</p> <p>Càtia Alexandra Coelho Ramos (Instituto de Investigação em Saúde - i3S)</p>
<p>16:30- OC19. Differential protein and glycan packaging into extracellular vesicles by 3D gastric cancer cells.</p> <p>Álvaro Martins (Instituto de Investigação e Inovação em Saúde - i3S Associação)</p>

16:45 Coffee break

17:15 FLASH POSTERS PRESENTATIONS and POSTER WALK

Chair: María Yáñez-Mó (UAM, IIS-IP, Madrid)

FLASH POSTERS:

FUNDAMENTAL EVS BIOLOGY

P1. Extracellular vesicles from the third stage larvae of *Anisakis pegreffii*: investigating possible proteins implicated in the host-parasite adaptation and pathogenesis. **María Leticia Palomba (Tucsis University)**

P2. *Candida albicans* secretes different EVs according to its morphology. An active and assembled 20S proteasome complex is only secreted in hyphal EVs. **Raquel Martínez López (Universidad Complutense de Madrid)**

P3. Proteomics of porcine seminal plasma: inside and outside of extracellular vesicles. **Isabel Barranco (University of Bologna)**

EVs IN CANCER

P4. Ferroptosis transmission by small extracellular vesicles in epithelial ovarian cancer cells. **Carmen Alarcón Veleiro (CICA INIBIC - Universidade da Coruña)**

P5. Identification of exosome modulators in 3d breast cancer models using exoscreen and cell painting technologies. **Esther Masiá Sanchís (CIPF)**

EVs IN OTHER DISEASES

P6. Divergent contributions of extracellular vesicle subpopulations to Huntington's Disease Neuropathology. **Rocío Pérez González (Instituto de Investigación Sanitaria y Biomédica de Alicante (ISABIAL) / Instituto de Neurociencias)**

P7. Extracellular vesicles released by adipose or hair follicle mesenchymal stem cells induce neuroprotection and modulate neuroinflammation in primary cell cultures. **Rosa María Hernández (University of the Basque Country (UPV / EHU))**

P8. Gamma catenin containing extracellular vesicles are detected in multiple pathologies. **Alberto Benito Martín (Universidad Alfonso X El Sabio)**

LIQUID BIOPSY AND BIOMARKERS

P9. Monitorization of response in multiple myeloma patients treated with the anti-BCMA drug conjugate Belantamab mafodotin through circulating extracellular vesicles". **Mercedes Garayoa (Cancer Research Center - IBMCC (CSIC-USAL) // Institute of Biomedical Research of Salamanca (IBSAL))**

P10. Combined exosomal and plasma non-coding RNA signature associated with urinary albumin excretion in hypertension. **Ana Ortega Gutiérrez (Biomedical Research Institute of Hospital Clinico de Valencia INCLIVA)**

P11. Implementation of an interdisciplinary core facility for the study of extracellular vesicles at the national Hospital of Paraplegics. **Virginia Vila del Sol (Hospital Nacional de Paraplégicos - SESCAM)**

P12. Intelectin-1, epithelial and protector marker on cardiovascular disease, is identified in extracellular microvesicles of neutrophils. **David Sánchez López (Fundación IDIS)**

P13. Isolation and characterization of extracellular vesicles from fluidic samples in the context of Mycobacterium tuberculosis infection. Laura Lerma Martínez (Universidad Autónoma de Madrid)
P14. Secondary Focal Segmental Glomerulosclerosis (FSGS) biomarker discovery from urinary Extracellular Vesicles (uEV). Sergio García García (IGTP)

ADVANCES IN EV METHODOLOGY

P15. Co-isolation of highly abundant soluble proteins in exosome samples trips biomarker discovery up. Sara Vázquez Mera (Facultade de Biología - Universidade de Santiago de Compostela)
P16. Comparison of techniques for the isolation of VP40 virus-like particles and extracellular vesicles. Rocío Mellid Carballal (CiMUS - USC)
P17. High-throughput EV purification from biological fluids for diagnostic application. Nora Olszok (Evotec)
P18. Optimization of an RNA isolation method for EV-Based Non-invasive Testing of ALK fusions in lung cancer patients. Lucía Robado de Lope (Instituto de Investigación Biomédica Puerta del Hierro)
P19. Proof of concept of using a membrane sensing peptide for sEVs affinity-based isolation. Beatriz Benayas López (Universidad Autónoma de Madrid (UAM))
P20. Standardization of an ELISA test for direct CD73 functional evaluation of MSC-derived extracellular vesicles. Miriam Moron Font (IGTP)
P21. Tangential flow filtration as a proper alternative for extracellular vesicles isolation. Clara García Vallicrosa (CIC bioGUNE)
P22. The Oxylipin Profile of Human Milk Extracellular Vesicles. Julia Kuligowski (Health Research Institute La Fe)

EVs IN INFECTION AND IMMUNITY

P23. Bone marrow-on-a-chip for the study of EVs in malaria cryptic infections. Nuria Sima (ISGlobal - Institut de Salut Global de Barcelona)
P24. Characterization of extracellular vesicles secreted by thymic regulatory T cells (thyTreg-EVs). Marta Fernández Castillo (Instituto de Investigación Sanitaria Gregorio Marañón)
P25. Comparison of the proteomic profile of plasma-derived extracellular vesicles isolated by different methods from patients with leishmaniasis. Ana María Torres García (Instituto de Salud Carlos III)
P26. Detecting and diagnosing the liver stage of Plasmodium infection in circulating extracellular vesicles. Bárbara Teixeira (Instituto de Medicina Molecular - Joao Lobo Antunes)
P27. Proteomics analyses of Extracellular Vesicles from peritoneal exudates reveal the elicited inflammatory/autoimmune response in the chronic graft versus host disease lupus model. Mercedes Zubiaur Marcos (IPBLN-CSIC)

EVs-BASED THERAPY AND TRANSLATIONAL MEDICINE

<p>P28. Comparative study of pEVs isolated from different platelet sources in wound healing. Andreu Miquel Amengual Tugores (Universitat de les Illes Balears)</p>
<p>P29. Exogenously loading monocytes extracellular vesicles with mRNA. Cristina Fornaguera Puigvert (Institut Químic de Sarrià (IQS), Universitat Ramon Llull (URL))</p>
<p>P30. Exosomal miRNAs changes following cancer therapy-induced cardiotoxicity. Marta Vilar Sánchez (CiMUS, IDIS)</p>
<p>P31. Extracellular vesicles from the conjunctiva: Isolation, characterization, and antioxidant effect. Ismael Romero Castillo (Universidad de Valladolid - IOBA)</p>
<p>P32. Funcionalization of MSC-EVs with quercetin as a potential senolytic treatment for atherosclerosis. Fátima Ainara González Moro (Universidad Autónoma de Madrid - UAM))</p>
<p>P33. In vivo loading of recombinant proteins into extracellular vesicles for the treatment of lysosomal storage diseases. Diego Baranda Martínez-Abascal (Vall D'Hebron Institute of Research)</p>
<p>P34. Nanoengineering exosomes with nanoparticles. Marina Martínez Cruz (Universidad de Zaragoza)</p>
<p>P35. Nanoparticles-like vesicles from food and their impact on S. Aureus and E. Coli growth. Mari Cruz Manzanaque López (Universidad de Valencia)</p>
<p>P36. Pasteurization influences on honey vesicle-like nanoparticles and its biological activity. Mari Cruz Manzanaque López (Universidad de Valencia)</p>
<p>P37. Pomegranate-derived extracellular vesicles as therapeutic nanocarriers of exogenous miRNAs. María del Carmen López de las Hazas Mingo (Fundación IMDEA Alimentación)</p>
<p>P38. Therapeutical use of EVs derived from platelets and from mesenchymal stromal cells: a comparative miRNA study. María Antonia Forteza Genestra (Group of Cell Therapy and Tissue Engineering, Research Institute on Health Sciences (IUNICS)</p>
<p>P39. The role of Extracellular-vesicles in the development of an mRNA-based Chagas disease vaccine candidates. Cristina Poveda (Baylor College of Medicine)</p>

Thursday 27th October

9:00 SESSION IV (5). FUNDAMENTAL EVs BIOLOGY

Chairs: Antonio Marcilla (Universitat de Valencia, Valencia) and Hernando del Portillo (ISGlobal (Barcelona) + IGTP (Badalona))

9:00- OC20. A GWC screen to unravel new molecular mechanisms involved in EV uptake. Víctor Toribio Serrano (Universidad Autónoma de Madrid)
9:10- OC21. SASP mediated by sEV as senomorphic target. Sergio Lucio Gallego (CICA-INIBIC - Universidad de Coruña)
9:20- OC22. Morphological characterization of porcine seminal extracellular vesicles by Cryo-electron microscopy (Cryo-EM). Ana Parra (Universidad de Murcia)
9:30- OC23. Identification of the Wnt Signal Peptide that directs secretion on Extracellular Vesicles. Uxía Gurriarán (OHRI)

10:00: MORNING LECTURE:

Phil Felgner, University of California

“150 years of vaccine science”

Chair: Javier Sotillo. (Centro Nacional de Microbiología, ISCIII, Madrid).

11:15 Coffee break

11:45 SESSION V. ADVANCES IN EV METHODOLOGY

Chairs: Maria J Vicent (CIPF, Valencia) and Juan Manuel Falcón-Pérez (CICbioGUNE, Derio)

11:45- OC24. Optimization of size exclusion chromatography for extracellular vesicle isolation. Beatriz Benayas López (Universidad Autónoma de Madrid - UAM)
11:55- OC25. Comparison of Novel Combined Biophysical Approach and Traditional Physical Protocols for Isolating Small Extracellular Vesicles from Goat Milk. María Isabel González Gutiérrez (Fundación para la Investigación del Hospital Gregorio Marañón de Madrid)
12:05- OC26. Nanosystems based on silver sulphide nanoparticles encapsulated in goat milk small extracellular vesicles for their use as probe in optical imaging. Elena Aguilera Jiménez (Fundación para la Investigación del Hospital Gregorio Marañón de Madrid)
12:15- OC27. Engineering Milk Small Extracellular Vesicles by Click Chemistry. Desiré Herreros Pérez (Fundación para la Investigación del Hospital Gregorio Marañón de Madrid)

12:25- **OC28**. Large-scale Serum-free production of Extracellular Vesicles (EVs) from immortalized Wharton's jelly Mesenchymal Stromal Cells (iWJ-MSC) using hollow fiber bioreactors.

Sergio García García (IGTP)

12:35- **OC29**. Design of a large-scale and GMP-compliant MSC-EV production process for clinical testing.

Marta Montguíó Tortajada (German Trias I Pujol Research Institute - IGTP)

13:00 Lunch

14:00 **AFTERNOON LECTURE:**

Lola Fernández Messina, Universidad Complutense de Madrid, Spain.

“Unravelling the role of EV-shuttled miRNAs as immune modulators”

Chair: Marcel.la Franquesa (Institut Germans Trias i Pujol, Badalona).

15:15 **SESSION VI. EVS-BASED THERAPY AND TRANSLATIONAL MEDICINE**

Chairs: Marcel.la Franquesa (Institut Germans Trias i Pujol, Badalona) and Mercedes Zubiaur (Instituto de Parasitología y Biomedicina “López-Neyra” CSIC-Universidad de Granada)

15:15- **OC30**. Platelet-derived extracellular vesicles show therapeutic potential on a 3D tendon disease model.

Manuel Gómez Florit (IdISBa - Instituto de Investigación Sanitaria de las Islas Baleares)

15:25- **OC31**. Effect of miR-21 into mesenchymal stem cells -derived extracellular vesicles behaviour on inflamm-aging.

María del Carmen Aruje Gonda (UDC - INIBIC - CICA)

15:35- **OC32**. Manipulation of microRNA distribution with EXO- and CELLmotifs as a novel approach against atherosclerosis.

Rubén García Martín (Joslin Diabetes Center, Centro Nacional de Biotecnología)

15:45- **OC33**. Placental MSCs and their exosomes as vehicles for the Na/I symporter (hNIS): A new agent for gene therapy and diagnostic.

Pilar Martín Duque (Universidad de Zaragoza)

15:55- **OC34**. Design of glycolipid-functionalized extracellular vesicles for their selective targeting to dendritic cells.

Jordi Guixeras Carreras (Institut Químic de Sarriá - IQS)

16:05- **OC35**. Enhanced production of immunomodulative MSC-EV by 3D bioreactor culture in chemically-defined medium.

Yvan Courageux (IGTP)

16:15- **OC36**. Prevention of alpha-synuclein pathology in gut and cord by shRNA-MC delivered by RVG-extracellular vesicles.

María Izco Gaviria (Fundación Rioja Salud)

16:40 Coffee break

17:10 **GEIVEX activities and general assembly.**

Presentations from GEIVEX mobility fellows. Networking with ISEV and other National Societies, the MOVE initiative.

21:00- Symposium dinner

Friday 28th October

9:15 CLOSING LECTURE

Miguel López, Universidade de Santiago de Compostela (USC)

“sEVs-mediated targeting of hypothalamic AMPK: a new hope for the treatment of obesity”

Chair: María Pardo (IDIS, Santiago de Compostela)

10:30- SESSION VII. EVs IN OTHER COMPLEX DISEASES

Chairs: María Pardo (IDIS, Santiago de Compostela) and Gloria Álvarez-Llamas (IIS-Fundación Jiménez Díaz, Madrid)

<p>10:30- OC37. UHPLC-MS/MS-based Metabolomics reveals differences on Extracellular Vesicles secreted by obese hepatocytes, and their effects on adipocyte metabolism. María Azparren Angulo (CICbioGUNE)</p>
<p>10:40- OC38. Cortico-striatal activation via physical training modulates the proteomic content of striatal extracellular vesicles in a model of Huntington's disease. Julia Solana Balaguer (Universitat de Barcelona)</p>
<p>10:50- OC39. Saturated fatty acid-enriched extracellular vesicles mediate communication between liver cells in metabolic associated fatty liver disease. Irma García Martínez (IIBM - CSIC - UAM)</p>
<p>11:00- OC40. Functional role of extracellular vesicles in the communication of obese adipose tissue with the liver, and their involvement in the establishment and maintenance of human hepatic steatosis. Tamara Camino (Instituto de Investigación Sanitaria de Santiago de Compostela)</p>

11:15 Coffee break

11:45 ROUND TABLE DEBATE:

“GEIVEX: the road from basic research to translation and impact”

Hernando del Portillo (ICREA Research Professor - ISGlobal (Barcelona) + IGTP (Badalona))

María J. Vicent (Centro de Investigación Príncipe Felipe (CIPF) Valencia)

M^aJosé Alonso (Universidad de Santiago de Compostela (USC), Santiago de Compostela)

María de la Fuente (Instituto de Investigación Sanitaria de Santiago de Compostela (IDIS), Santiago de Compostela)

13:00 Awards and closing remarks.