

# **Extracellular vesicles in neuroscience: a focus on methodology and their applications in neurodegenerative disorders**

Dirección

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In recent years, extracellular vesicles have emerged as key mediators of cell-to-cell communication in the central nervous system. Furthermore, due to their ability to cross the blood brain barrier they can reach the periphery and serve as a source of biomarkers in neurodegenerative diseases to facilitate diagnosis, prognosis and assessment of interventions targeting the brain.

The purpose of the course: 1- Provide students, clinicians, academics and researchers with updated knowledge on extracellular vesicles in the central nervous system, 2- Review the roles of extracellular vesicles in neurodegenerative disorders as well as their translational/clinical applications 3- Encourage interactions among researchers and clinicians and promote collaborations

The course is aimed at Graduate students (Master Thesis and PhD students), Lecturers and senior researchers and Clinicians and health workers (Medical doctors; surgeons; Physicians; Nurses; Technicians).

**Day 1 (Thursday August 1<sup>st</sup>):**

**9:30-9:45 Accreditation**

**9:45-10:00 Welcome ceremony**

***Session 1: Neuronal and non-neuronal EVs in neuronal function***

**10:00-10:30 Dr. Cristina Malagelada (Universitat de Barcelona, Catalunya, Spain).** Role of neuronal EVs in controlling neuronal functions.

**10:30-11:00 Dr. Jimena Baleriola (Achucarro Basque Center for Neuroscience, Basque Country, Spain).** Proteomic characterization of astroglial EVs and their effect on neurons.

***Session 2: Roles of EVs in models of neurodegeneration***

**11:30-12:00 Dr. Berta Puig (University Medical Center Hamburg-Eppendorf, Hamburg, Germany).** Role of EVs in Ischemic Stroke.

**12:00-12:30 Prof. Eran Perlson (Tel-Aviv University, Tel Aviv, Israel).** Role of muscle EVs on motoneurons in amyotrophic lateral sclerosis (ALS).

**12:30-13:00 Dr. Sonia Alonso-Martín:** (Biogipuzkoa, Basque Country, Spain). Vesicular miRNA characterization from skeletal muscle cells in ALS.

**13:00-13:30 Prof. Juan Manuel Falcón (CICbioGUNE, Basque Country, Spain).** EVs in metabolism of Alzheimer´s disease.

**15:40-17:30 Round table and Q&A (all speakers)**

**Day 2 (Friday August 2<sup>nd</sup>):**

***Session 1: EVs for biomarker discovery***

**9:30-10:00 Dr. Rocío Pérez (ISABIAL, Alicante, Spain).** EVs as a source of biomarkers in neurodegenerative disorders.

**10:00-10:30 Dr. Ana Gamez Valero (Universitat de Barcelona, Catalunya, Spain).** Small RNAs in plasma extracellular vesicles as biomarkers in neurodegenerative diseases.

**10:30-11:00 Coffee break**

***Session 2: Workshop: Isolation of EVs from brain tissues and biofluids: tips and tricks***

**11:00-13:00 Multiple speakers**

**13:00-14:00 Concluding remarks and closing ceremony.**