11as JORNADAS FORMACIÓN CIBERES

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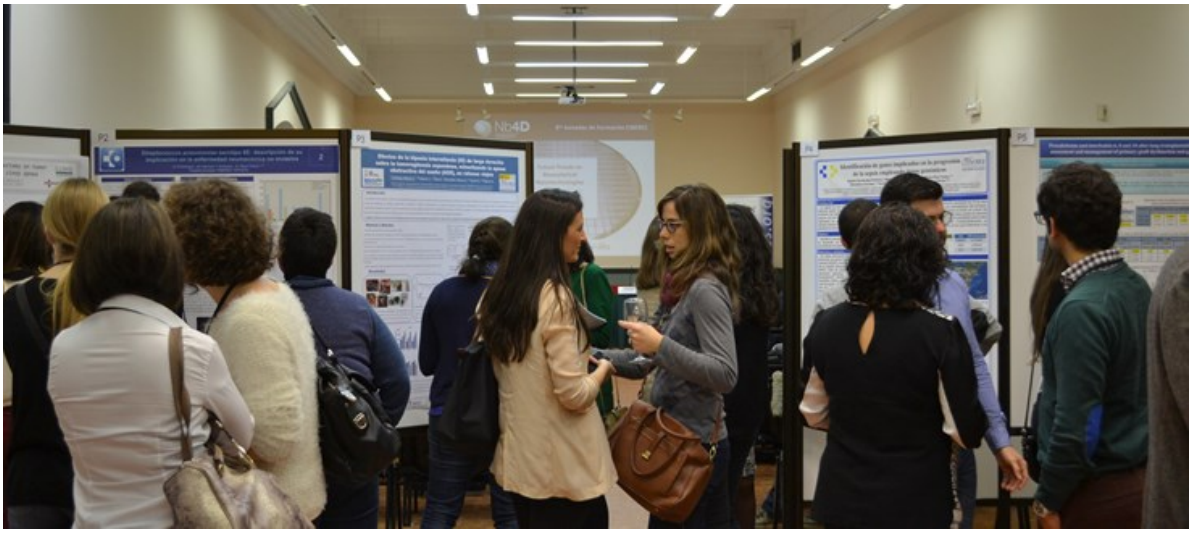

Aula Magna Pittaluga
Escuela Nacional de Sanidad
15 y 16 de Noviembre de 2018

Madrid

P29. *"Utility of MALDI-TOF MS as a new tool for Streptococcus pneumoniae serotyping"*–**María Ercibengoa Arana**. Grupo CB06/06/0056, CIBERES

P30. *"Quality control of home non-invasive mechanical ventilators"* – **Onintza Garmendia Sorrondegui**. Grupo CB06/06/0056, CIBERES

P31.*"Revisiting Nocardiosis at a tertiary care institution: any change in recent years?"*–**AliciaGalar**. Grupo CB06/06/0058, CIBER

P32. *"β-lactam Penetration into Epithelial Lining Fluid based on Multiple Bronchoalveolar Lavage Sampling in Swine Pneumonia Model"* – **Ana Motos Galera**. Grupo CB06/06/0028, CIBERES

P33. *"Effect of hypercapnia in in vitro human primary culture of alveolar cells"*– **JosepBringué Roqué**. Grupo CB06/06/1097, CIBERES

P34.*"Development of a new microarray set-up for high through-put screening of exosome glycosylation"*–**MaríaAsunción Campanero Rhodes**. Grupo CB06/06/1102, CIBERES

P35.*"Primary Care Physicians Can Comprehensively Manage Sleep Apnea Patients: A Non-Inferiority Randomized Controlled Trial with Semi-Automatic Algorithm for OSA Management"*– **Marta Jiménez Arroyo**. Grupo CB06/06/0029, CIBERES

P36.*"Hypoxia-induced PD-1/PD-1 in sleep apnea patients"* – **Carolina Cubillos Zapata**. Grupo CB15/0037,CIBERES

P37.*"D-dimer and high-sensitivity C-reactive protein levels to predict venous thromboembolism recurrence after discontinuation of anticoagulation for cancer-associated-thrombosis"* – **LuisJara Palomares**. Grupo CB17/06/0030, CIBERES

P38.*"Effect of long-term storage time on antigenicity and integrity in tissue samples"* – **Margalida Esteva Socias**. Grupo CB06/06/0043, CIBERES

P39. *"Detection of Streptococcus pneumoniae invasive disease directly from blood samples with the Helix pomatia agglutinin (HPA) by Fluorescence Imaging"* - **María Ercibengoa Arana**. Grupo CB06/06/0056, CIBERES

Modera: Asun Rocher, José Luis Izquierdo, María Jesús Cruz

11:15-11:45 Pausa-Café

11:45-12:30 Sesión de Presentaciones Orales 4 CIBERES

O16. *"Activation of Kv7 channels as a novel mechanism for NO/cGMP-induced pulmonary vasodilation"* – **Gema Mondéjar Parreño**. Grupo CB06/06/1084, CIBERES

O17. *"The ability of exosomes derived from mesenchymal stem cells to limit pulmonary vascular dysfunction is enhanced by hypoxic preconditioning"* – **Sergio Antonio Esquivel Ruiz**. Grupo CB06/06/1084, CIBERES

P34

Development of a new microarray set-up for high through-put screening of exosome glycosylation

María Asunción Companero Rhodes
Grupo CB06/06/1102, CIBERES

Authors: María Asunción Campanero-Rhodes[1,2], Ioanna Kalograiaki[1,2], Laura Millares[2,3], Eduard Monsó Molas[2,3] and Dolores Solís[1,2].
(1) Instituto de Química Física Rocasolano, CSIC
(2) CIBER de Enfermedades Respiratorias (CIBERes), Instituto de Salud Carlos III
(3) Respiratory Diseases Department, Parc Taulí University Hospital

Introduction:
Extracellular vesicles are membrane-enclosed vesicles released from cells, whose composition may change under different physiological and pathological conditions. They are involved in intercellular communication and regulation of cellular functions. An elevated concentration of extracellular vesicles in blood and altered composition can be a sign of a pathological state. Host cell-derived vesicles include apoptotic bodies, microvesicles, and exosomes, which vary in size, composition, and biosynthesis. Exosomes, the smallest vesicles (30-100 nm), contain host-derived proteins, carbohydrates, lipids, and nucleic acids. Numerous studies have examined the lipid, protein and RNA/DNA content of exosomes. However, very scarce information on their carbohydrate composition is available. Exosomes are expected to share glycosylation patterns with their parental cell, which could change in response to different pathologies. In particular, evidence for a correlation between surface glycosylation and properties of tumour cells, as e.g. tumour-immune escape, is emerging. Recently, a cell surface proteoglycan, glypican-1 (GPC1) has been identified as a potential non-invasive diagnostic and screening tool to detect early stages of pancreatic cancer, as it is specifically enriched on cancer cell-derived exosomes. Thus, isolation and characterization of exosomes in body fluids could enable the identification of specific markers that distinguish cancer exosomes from normal exosomes, aiding in the diagnosis and management of cancer.

Objectives:
To set-up a novel microarray method enabling the high-throughput characterization of the glycosylation patterns of normal and tumour cell-derived exosomes in serum, in comparison with total serum.

Methods:
Exosomes were isolated from 500 µl serum samples of 4 healthy people and 8 COPD patients using the Total Exosome Isolation reagent (Invitrogen, Thermofisher) following the procedure recommended by the manufacturer. Total clarified sera, supernatants of exosome isolation and isolated exosomes were printed in microarrays onto 16 pad nitrocellulose coated glass slides using a Sprint arrayer (Arrayjet Ltd) and tested for the binding of a panel of 3 biotinylated antibodies and 28 biotinylated lectins in the presence or absence of their respective inhibitors. FITC-Annexin V and AF647-Streptavidin were used as negative controls.

Conclusions:
- Positive binding of anti-CD63 antibody to all exosome samples confirmed the integrity of isolated exosomes while no binding of Annexin-V was detected.
- Neither the low intrinsic fluorescence of the samples nor binding of streptavidin alone were significant enough to interfere with the results.
- The lectin binding patterns observed for exosome samples were clearly different from those observed for total serum, indicating that exosomes display distinctive glycosylation patterns.
- Thus, the method can be used for the screening of exosomes and sera samples in the search of new biomarkers.

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