Consiglio Nazionale delle Ricerche
ISTITUTO DI CHIMICA DEL RICONOSCIMENTO MOLECOLARE

Seminari 2018

The colloidal side of cell communication

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Sala A, Area della Ricerca CNR, Via A. Corti 12

Abstract
Up to few years ago, cell communication was thought to be regulated exclusively through cell-cell junctions or via exchange of soluble molecular messengers. A third way is today featuring strongly: intercellular and inter-organismal communication - in both normal and pathological processes - also occurs by nanosized extracellular vesicles (EVs).
EVs are a heterogeneous collection of membrane-bound nanocarriers with complex cargoes including proteins, lipids, and miRNAs. They are in the limelight for their capacity to selectively communicate genetically encoded messages to other cells, their suitability as multiplexed early biomarkers for diseases and their use as therapeutic agents, which are attracting enormous interest from basic researchers, clinicians, and biotech companies.
However, to date study, formulation and engineering of EVs is not supported by adequate knowledge and control over their properties at the colloidal scale (nanoscale).
The seminar will introduce EVs and their translational promises through this critical point of view, also telling some of the first stories of integration of molecular biology, nanotechnology, colloidal and clinical chemistry in EV research.

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INTEGRATED NANOPARTICLE ISOLATION AND DETECTION SYSTEM FOR COMPLETE ON-CHIP ANALYSIS OF EXOSOMES