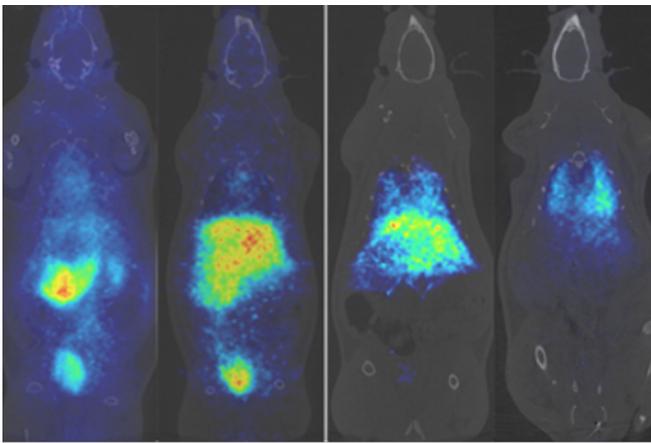




Sergio E. Moya

Center for Cooperative Research in Biomaterials - CIC biomaGUNE
San Sebastian, Spain

Biological Fate Studies of Nanocarriers for Drug Delivery: Degradation and Stability of Hybrid Nanomaterials in Biological Environments and Formation of Biocoronas



Nanoformulations offer multiple advantages over conventional drug delivery, enhancing solubility, biocompatibility, and bioavailability of drugs. Following systemic delivery nanocarriers must deliver encapsulated drugs, usually through nanocarrier degradation. A premature degradation or the loss of the nanocarrier coating may prevent the delivery of the drug to the targeted tissue. Despite their importance, stability and degradation of nanocarriers in biological environments are seldom studied in literature.

In this presentation issues related to the biological fate and stability of nanocarriers in biological matrixes will be discussed: the interaction of the nanocarriers with proteins, the biodistribution of the nanocarriers, their biological fate, the kinetics of drug release in vitro/in vivo and the stability of the core and surface coating of the nanocarriers. In vitro, we will make use of Fluorescence Correlation Spectroscopy for studying nanocarriers stability, the fate of protein corona after translocation and the relation between surface chemistry, protein corona formation and the aggregation of nanocarriers intracellularly. In vivo, we will apply Positron Emission Tomography and Single Photon Emission Tomography to study the biodistribution of nanocarriers, the stability of surface coatings and nanocarrier dissolution in vivo, using advanced radiolabelling strategies.

Venerdì 26 novembre 2021, Ore 13:00, aula T

Ospite: Prof. Paolo Bergese