SAPIENZA
UNIVERSITÀ DI ROMA

Dipartimento di Chimica
e Tecnologie del Farmaco

AVVISO DI CONFERENZA

Si comunica che il **giorno 29 Novembre 2019, alle ore 15.00**, nell'Aula Carelli della Facoltà di Farmacia e Medicina (Edificio CU019) dell'Università Sapienza, il

Prof. Elias Fattal

Institut Galien Paris-Sud, UMR CNRS 8612,
University of Paris-Sud, France

terrà una conferenza sul tema

"Local and targeted delivery of nucleic acids"

La S.V. è invitata ad intervenire.

Proponente: Prof. Pietro Matricardi Il Direttore: Prof. Bruno Botta

Applications of nanoparticles are based on the knowledge regarding their in vivo fate following their administration facing two barriers: one that is immunological consisting in their rapid uptake by the monocyte phagocytic system and the second that is cellular consisting in the endothelial barrier which cannot be crossed by nanoparticles unless it is leaky due to physiological or pathological conditions. Indeed, small interfering RNA (siRNAs) face several obstacles, i.e. a poor uptake and stability in serum and the lack of selectivity for the target tissue. However, the nanotechnology approach has been able to improve their delivery by providing new means of overcoming many of the barriers to the development of siRNA-based therapeutics. To illustrate such potential, we discuss a case study consisting of liposomal targeted delivery of siRNA to CD44 expressing tumor. CD44, a transmembrane glycoprotein that exists in different isoforms, plays an important role on cell – cell/cell – matrix interaction, cell adhesion, and migration and signal transduction from the extracellular to the intracellular compartment. Moreover, many cancer types over-express this receptor which is also known to be a major biomarker of cancer stem cells. During the presentation, we will describe two approaches using hyaluronic acid and aptamer as targeting ligand to CD44 for the delivery of siRNA to tumor cells. In final, we will illustrate local delivery of siRNA with the use of cationic phosphorous dendrimers to deliver siRNA to the lungs which was shown to be an optimal approach in the treatment of lung injury.

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