



UNIVERSITÀ
di VERONA

Scuola di Dottorato
di SCIENZE NATURALI ED INGEGNERISTICHE

Corso di Dottorato in Biotecnologie

" Organic Chemistry for Nanomedicine "

June 16th, 2017 - h. 11.30

Prof. Francesco Nicotra

Università di Milano-Bicocca

Abstract

Nanomedicine consists in the use of engineered nanodevices and nanostructures to monitor, repair, construct and control human biological systems at the molecular level.

Nanomedicine projects require multidisciplinary approaches in which medical, biological, chemical and engineer expertise must be strongly connected.

The seminar will present the contribution of Organic Chemistry in a couple of nanomedicine projects, the first one devoted to the development of nanoparticles for therapy and diagnosis of Alzheimer disease (FP7, NAD), and the second devoted to the development of nanostructured biomaterials for regenerative medicine (PRIN2011).

In the NAD project liposomes have been functionalised with ligands of the A β -peptides responsible for the formation of fibrils, and with APO-E peptides favouring the transport through the blood brain barrier. In vivo studies showed the capacity of such liposomes to ameliorate memory impairment in Alzheimer's disease mouse models. The project resulted in the creation the spin-off company AmypoPharma.

The regenerative medicine project developed glycosylated biomaterials and studied the influence of the sugars in the cell fate. Different glycans have been covalently linked at the surface of biocompatible materials such as polypropylene, and biomaterials such as collagen, exploiting various chemoselective approaches. The biological results obtained on osteoarthritic models of mice and neuroblastoma cells revealed the relevance of collagen glycol-functionalisation.

The lecture will take place **at 11.30 – Sala Verde – Cà Vignal – Strada Le Grazie, 15**

Local organization and contact:

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For each hour of seminar, 1 CFR (provided for the specific activities of PhD Program in Biotechnology) will be recognized to students attending the event.
