

LECTURE INVITATION

Core and surface engineering of “smart” drug nanocarriers

Prof. Stefano Salmaso

The lecture will take place on Wednesday 3rd of May 2023 at 15h in seminar room 0.3 Alexander Fleming
Faculty of Pharmaceutical Sciences, Ottergemsesteenweg 460, 9000 Ghent, Belgium.

Registration not required.

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Abstract

The biopharmaceutical properties of nanocarriers for delivery of therapeutics stem from the physico-chemical features of their components dictating the supramolecular properties. As a result, the matrix resulting from the self-assembly of the components and the surface features require a fine engineering to ensure the control of the drug release, the response to biological microenvironment or external stimuli, and the interaction with the biological interfaces, i.e. proteins, cells, endothelium, barriers. Few examples of these concepts are provided to highlight their rational design. We have developed diblock copolymers that self-assemble into micelles for delivery of anticancer drugs whose stability in blood and drug release are dictated by the core features and the chemical composition of the diblock copolymers. Oligocationic agents were associated to lipidic particles to modulate the interaction of these carriers with a variety of cells and their diffusivity in specific body compartments, and additionally, to promote the loading of biologics for intracellular delivery.

Biography



Stefano Salmaso is full professor since 2017 at the Department of Pharmaceutical and Pharmacological Sciences of the University of Padova where he teaches *Technology of delivery and controlled release of drugs*. He received his Ph.D. in “Pharmaceutical Sciences” in 2004 from the University of Padova. He completed his training in international awarded research groups at the School of Pharmacy of the University of Paris-Sud XI, at I.B.M.C Center of the University of Strasbourg, and at Centre for Innovative Biotechnologies of the University of Padova. He held positions as assistant professor at the University of Padova (2004-2014), associate professor at University of Padova (2014-2017) and as associate scientist at Northeastern University (Boston-USA, 2005 and 2008). Since 2023 he serves as President of the CRS Italy Chapter. He has authored 95 papers in high-ranking international journals, more than 100 conference communications, 3 book chapters and 5 international patents, and supervised more than 30 PhD students, post-doc and fellows. He is member of the editorial board of Journal of Controlled Release and OpenNano.

Prof. Salmaso’s research explores a variety of colloidal systems (micelles, liposomes, SLN, polymersomes, polymeric and metallic nanoparticles) by combining responsive materials, functional and targeting agents for the local delivery and controlled release of anticancer drugs and biologics (peptide, proteins, siRNA). His research is supported by public bodies (University of Padova, European Commission, European Social Fund), Italian Foundations (Cystic Fibrosis Foundation, Cariparo) and several biopharmaceutical companies. Among others, in latest years he was recipient of a three-years grant from European Commission in the framework of the FP VII (NanoSCI ERAnet), he was team member of the Innovative Training Networks (ITN) - Marie Skłodowska-Curie action, and recipient of a “PRIN grant” by the Italian Ministry of University and Research and he is leading a team supported by the NextGeneration Italy Recovery Plan for the development of RNA based therapies.

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