Bioengineered nanomedicines to modulate the local and intracellular pharmacokinetics of anticancer drugs for colorectal cancer

Bruno Sarmento
Principal Investigator
i3S – University of Porto
Bruno.sarmento@i3s.up.pt

Our group is focused on the development of drug delivery systems, with special attention on nanotechnology, and their application to the pharmaceutical and biomedical fields. There is a particular interest in establish bioengineering targeted nanomedicines for oral delivery of anti-tumor drugs for colorectal cancer. The group also developed and validated novel in vitro cell-based intestinal model to evaluate the permeability and performance of drugs and drug delivery systems and proposed an innovative multicellular 3D colorectal cancer spheroid model used to screen efficacy of anticancer nanomedicines.
In this presentation, our most recent achievements of the establishment of micelles and polymeric-based nanoparticles, with passive and active targeting features for colorectal cancer cells will be described. Our approach involves innovative nanomedicines, with deep and comprehensive physical-chemical, in vitro and in vivo evaluation.

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