Anna SALVATI - CV

After graduating in Biological Sciences at the University of Florence, Italy, I have undertaken a PhD in Chemical Sciences (Physical Chemistry) in the same University, spending 18 months as a visiting student in the Chemistry Department of Lund University, Sweden. My PhD project was focused on the preparation and physico-chemical characterization of carriers for drug delivery, such as liposomes for gene and drug delivery, and composite responsive gels for controlled drug release. I have received my PhD in early 2007 and with this background on physical chemistry, I then joined the Centre for BioNano Interactions, University College Dublin, Ireland, as a postdoctoral researcher and senior researcher.

My research in CBNI has been focused on the development of protocols and methodologies to control exposure of cells to nanoparticles and obtain reproducible quantitative data on nanoparticle uptake and eventual impact on cellular function.

In 2014, I have been awarded a Rosalind Franklin Fellowship from the University of Groningen (RUG), where I moved as an Assistant Professor in the Groningen Research Institute of Pharmacy (GRIP). Within GRIP, our group is based in the Department of Nanomedicine & Drug Targeting (previously Department of Pharmacokinetics, Toxicology and Targeting). GRIP is part of the Groningen University Institute for Drug Exploration (GUIDE), which is one of the five Institutes of the University Medical Center Groningen (UMCG). The connection between Pharmacy and the Medical Center allows me to be in closer contact with medical and clinical research and expertise, thus moving my research towards more complex systems and medical applications.

My research in the last 8 years has been focused on understanding how nano-sized materials, such as the drug carriers used in nanomedicine, interact with and are processed by cells. In particular, I have investigated how nano-sized materials are modified by the adsorption of a biomolecule corona on their surface, once applied in biological fluids (for instance when nanomedicines are administered in blood). Thus, I have explored the effects of corona formation on the early interactions of nano-sized materials with cells, and I have combined different methods in cell biology, such as RNA interference, transport inhibitors, and methods based on cell proteomics and genetic screening to study nanoparticle interactions with cell receptors and characterize the mechanisms of nanoparticle uptake into cells. In doing so, I have also optimized and developed novel methods to study these interactions and advanced in vitro models more closely resembling the complexity of the in vivo environment to apply to our studies.

In 2019 I have promoted to Associate Professor in Nanomedicine.