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Gold, silver magnesium and magnetic nanoparticles: Nanomedicine applications in drug delivery

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It is well known that metal nanoparticles (NPs) have various unusual chemical and physical properties compared with those of metal atoms. The role of organic ligands and their coating is, on the other hand, increasing its importance in nanotechnology and nanomedicine. Once grafted with organic molecules the metallic nanoparticles change their solubility and can therefore be entrapped into biopolymers. The author has reported organic coating of magnetic NPs, gold nanorods and silver NPs. First goal of this presentation is to show polymeric entrapment and chemical conjugation with specific peptides, giving targeted-nanocarriers, for *in vitro* imaging and therapy on cancer cells. Finally, the impact and the significance will be shown with *in vivo* diagnosis, using positron emission tomography and magnetic resonance imaging, together with some cancer therapy based on magnetic fluid hyperthermia.

Biography

Mauro Comes Franchini received his degree in Industrial Chemistry at the University of Bologna in 1993 and PhD in Chemical Science, University of Bologna in 1996. Since from 1997, he is entitled with "Strategic Projects" CNR fellowship, later he becomes from 1998 as a researcher at the Faculty of Industrial Chemistry, Bologna. His International Experience is four months University of Nijmegen, The Netherlands, Dyson Perrins Laboratory and six months Oxford University, UK. He is the author of 87 articles published in international journals. Two WTO patents and 4 contributions to book's chapter and referee for several journals. He is the Member of the honorary editorial board of International Journal of Nanomedicine and the Member of the editorial board of Advances in Nanoparticles.

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