C.V. Barbara Ruozi

Dr. Barbara Ruozi is associate professor of Pharmaceutical Technology at University of Modena and Reggio Emilia. She's teaching "Veicolazione e Direzionamento dei Farmaci" and "Tecnologia,socioeconomia e legislazione farmaceutiche e Laboratorio di Galenica" of the degree course of CTF, "Preparazioni oncologiche" and "Aggiornamenti sulle forme farmaceutiche innovative" for students of School for Specialization in Hospital Pharmacy. She is researcher in the scientific field of CHIM/09 (Pharmaceutical Technology) at the Department of Life Sciences and belongs to the Faculty of Pharmacy of the University of Modena and Reggio Emilia. She's graduate in Chemistry and Pharmaceutical Technology (CTF) in 1997, PhD on "Scienze del Farmaco" in 2001.
The results obtained in nanomedicine research allow her to be awarded with "The International Journal of Nanomedicine *Early Career Award-2009".* In 2006 she gained the "AFI Prize for Research and Development " for the best project in the pharmaceutical-technological area with interest in industry application. She's member both of national and international pharmaceutical- technology societies as European Technology Platform on Nanomedicine, Controlled Release Society Italian Chapter, Aitun, AAPS Italian University Chapter, TEFARTI (Italia) and ADRITELF (Italia). She's author or co-author of more than 80 research articles, book chapters and

reviews, published in international journal or book series. Moreover, her scientific production is based on more than 130 abstract for oral or poster communications.
The research activity is based on the development of lipid and polymeric systems for the drug delivery and targeting, as follows:
1) preparation and optimization of liposomes and lipid-based systems for the delivery of gene material (plasmid and ODN) for cancer treatment. The transfection efficiency of the systems is evaluated by in vitro experiments using cell cultures and applying the cytofluorimetric and confocal analysis;
2) validation of the characterization techniques for colloidal carriers (liposomes, nanoparticles and solid lipid nanoparticles) as transmission electron microscopy (TEM), scanning electron microscopy (SEMFEG) and atomic force microscopy (AFM) (surface and morphological characterization).
3) drug delivery to the Central Nervous System, by using nanoparticulate vectors, focusing on the planning, preparation, characterization and administration of Np after surface modifications;
4) synthesis and chemical modification of polymers and lipids for drug delivery; this area of research involves the collaborations with other national and international groups to optimize the selective drug delivery systems (immunonanoparticles, immunoliposomes etc).

Next to these research activities, the research develops with the study and the characterization of collagen matrices (scaffolds, sponges and membranes) for tissue engineering; the changes occurred when these structures are in contact with biological fluid have been studied using microscopical approaches (particularly ESEM).
She's collaborating with several pharmaceutical companies (Chiesi, Biofer, Pharmanutra, Lamp, Opocrin) providing assistance and experience on technological formulation and characterization of drug products (research and development and marketed formulations).