

Lorella Giovannelli

BIO AND EDUCATION

High school leaving qualification in scientific studies in 1992 (Liceo Scientifico "E. Majorana", Moncalieri, Torino, Italy). Degree in Pharmaceutical Chemistry and Technology in 1998 (University of Torino, Italy). Qualification to the profession of pharmacist in 1998. In the year 2000 Researcher at COSMO S.p.A. (Milano, Italy). In November 2000, Researcher at the Department of Chemical, Food, Pharmaceutical and Pharmacological Sciences (DISCAFF) – University of Piemonte Orientale, Italy. From November 2001, Assistant Professor of Pharmaceutical Technology at the Department of Pharmaceutical Sciences (ex Faculty of Pharmacy) of the University of Piemonte Orientale. Affiliation to DFB Center (Drug and Food Biotechnology Center), ADRITELF (Associazione Docenti e Ricercatori Italiani di Tecnologie e Legislazione Farmaceutiche).

The research activity, carried out in the pharmaceutical technology field, is concerned with the preformulation, formulation, and characterization – physico-chemical, technological and biopharmaceutical – of innovative drug delivery systems. The didactic skills are relative to Pharmaceutical Technology and Legislation.

UNIVERSITY CAREER

2001-	Assistant Professor, University of Piemonte Orientale
2000-2001	Researcher, University of Piemonte Orientale
1999-2000	Researcher, COSMO S.p.A.
1998-1999	Researcher, University of Torino

MAIN FIELDS OF INTEREST

1. Preformulation and formulation
2. Study of the solid state of bioactive molecules
3. Drug controlled release
4. Mesoporous systems
5. Cyclodextrins

CURRENT ISSUES OF RESEARCH

1. Preformulative studies

Improvement of the physic-chemical and technological characteristics (such as solubility, stability, dissolution rate) of pharmaceutical and cosmetic molecules by: interaction with solubilizing, stabilizers and promoting excipients; complex formation of supra-molecular inclusion with native and modified cyclodextrins; modification of the physical state of the drugs.

2. Study of the solid state of drug

Amorphization of poorly soluble drugs: the amorphous form shows significant pharmaceutical advantages respect to the crystalline one, such as for example a higher dissolution rate, and therefore potentially increased bioavailability and decreased onset time of therapeutic effect. Amorphous bioactive molecules can be obtained by different techniques such as grinding, freeze drying (in the presence of cryo-protectants and stabilizers such as cyclodextrins), melting, spray drying. The physical stabilization of the amorphous form is performed through the interaction with mesoporous silicates and the complexation with cyclodextrins.

3. Drug controlled release

Delivery of bioactive molecules using mesoporous materials (silicate) or microparticles, and colloidal systems (lipid microspheres, microcapsules, liposomes), intended for oral and topical administration.

TOP FIVE PAPERS

1. Giacobbe C., Palmisano G., Giovenzana G.B., Giovannelli L., Negri R., Masciocchi N. Difluprednate: More than meets the eye. 2015. *Journal of Pharmaceutical and Biomedical Analysis* 102 (2015) 305-313.
2. Locatelli M., Travaglia F., Giovannelli L., Coisson J.D., Bordiga M., Pattarino F., Arlorio M. 2013. Clovamide and phenolics from cocoa beans (*Theobroma cacao* L.) inhibit lipid peroxidation in liposomal systems. *Food Research International* 50, 129-134.
3. Segale L., Giovannelli L., Pattarino F., Conti S., Maggi L., Grenier P., Vergnault G. 2010. Thermogravimetric Investigation of the Hydration Behaviour of Hydrophilic Matrices. *Journal of Pharmaceutical Sciences* 99 (4) 2070-2079.
4. Giovannelli L., Bellomi S., Pattarino F., Albertini B. 2005. Characterization of nifedipine microparticles prepared by Hot Air Coating Technique. *International Journal of Pharmaceutics* 293, 225-234.
5. Pattarino F., Giovannelli L., Giovenzana G.B., Rinaldi M., Trotta M. 2005. Inclusion of methotrexate in alkyl-cyclodextrins: effects of host substituents on the stability of complexes. *Journal of Drug Delivery Science and Technology* 15 (6) 465-468.

AWARDS

Best scientific contribution at the 48th AFI Symposium/CRS Italian Chapter. Rimini, Italy June 11-13, 2008.