

Lorena Segale

BIO AND EDUCATION

Scientific high school degree in 1992 at Liceo Scientifico "B. Cairoli" of Vigevano (PV)

Degree in Pharmaceutical Chemistry and Technology in 2000 at the Faculty of Pharmacy of the University of Pavia.

Passing the government exam and licensed as a profession pharmacist in 2001.

PhD degree in Pharmaceutical Chemistry and Technology at University of Pavia.

Postdoctoral fellowship at Department of Pharmaceutical Chemistry of the University of Pavia from 2003 to 2006.

From March 2006, Assistant Professor of Pharmaceutical Technology at the Department of Pharmaceutical Sciences of the University of Piemonte Orientale.

The main scientific skills are in the field of pharmaceutical technology with particular reference to the production techniques, the formulation, the physico-chemical, technological and biopharmaceutical characterization of oral solid pharmaceutical dosage forms.

The teaching skills are related to pharmaceutical technology and pharmaceutical legislation.

UNIVERSITY CAREER

2006-	Researcher, Università del Piemonte Orientale
2003-2006	Postdoctoral fellowship, Università degli Studi di Pavia
2003-2000	PhD, Università degli Studi di Pavia

MAIN FIELDS OF INTEREST

1. Solid dosage forms
2. Microparticles
3. Pellets
4. Formulation
5. Controlled release

CURRENT ISSUES OF RESEARCH

1. Formulation of solid dosage forms

The research activity is focused on solid dosage forms for the oral administration of drugs, in particular on the formulation and characterization of advanced drug delivery systems for the administration of bioactive substances. The research work concerns with the development of therapeutic systems that allow to overcome intrinsic drawbacks of actives (chemical stability,

compatibility with excipients, solubility), to modify in vivo drug availability and to target bioactive molecules to specific sites.

2. Multi-unit dosage forms

The research activity is addressed to the formulation, production and characterization of multi-unit systems (microparticles and pellets) using consolidate and innovative technology (ionotropic gelation, spray drying, spray chilling).

3. Ionotropic gelation

Ionotropic gelation is a technique used for the production of multi-unit polymeric systems. Such systems are regular in shape and with a diameter between few μm and some mm. Through such a technology, it is possible to encapsulate a great number of materials (active ingredients, cells, biotechnological products, food and fragrances). This process uses the capacity of carboxylic groups of some natural polymers (e.g. alginate) to chelate divalent ions (for example, Ca^{2+}), forming a rigid tridimensional network.

TOP FIVE PAPERS

1. L. Maggi, **L. Segale**, M.L. Torre, E. Ochoa Machiste, U. Conte – Dissolution behaviour of hydrophilic matrix tablets containing two different polyethylene oxides (PEOs) for the controlled release of a water-soluble drug. Dimensionality study – *Biomaterials* 23 (2002) 1113-1119.
2. S. Conti, L. Maggi, **L. Segale**, E. Ochoa Machiste, U. Conte, P. Grenier, G. Vergnault - Matrices containing NaCMC and HPMC 1. Dissolution performance characterization – *International Journal of Pharmaceutics* 333 (2007) 136-142.
3. S. Conti, L. Maggi, **L. Segale**, E. Ochoa Machiste, U. Conte, P. Grenier, G. Vergnault - Matrices containing NaCMC and HPMC 2. Swelling and release mechanism – *International Journal of Pharmaceutics* 333 (2007) 143-151.
4. **L. Segale**, P. Mannina, L. Giovannelli, H. Danan, P. Esposito, L. Galli, F. Pattarino. A novel dense CO_2 supercritical fluid technology for the development of microparticulate delivery systems containing ketoprofen – *European Journal of Pharmaceutics and Biopharmaceutic* (2012), 82, 491-497.
5. **L. Segale**, P. Mannina, L. Giovannelli, F. Pattarino. Calcium alginate multi-unit oral dosage form for delayed release of celecoxib – *Journal of Drug Delivery Sciences and Technology* (2015), 26, 35-43.

AWARDS

Award for the best scientific contribution at the joint AFI/CRS Italian Chapter congress. Rimini, Italia, 11-13 June 2008.