

PERSONAL INFORMATION

Maria Cristina Bonferoni



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WORK EXPERIENCE

- 2018- Full Professor, Pharmaceutical Technology (SSD CHIM09), Department of Drug Sciences, University of Pavia
- 2018- Deputy Director of the Department of Drug Sciences of the University of Pavia
- 2015- Responsible for UniPV of the Cooperation Agreement between the Universities of Pavia and Sassari
- 2013- Member of the Quality Assurance team of the University of Pavia for the Science Area (2017-2018 Vicarious-Coordinator of PQA)
- 2010-2013 Member of Scientific Committee of the Interuniversity Consortium TEFARCO Innova
- 2010-2013 Coordinator of the II level "Master Course in Preformulation, Pharmaceutical Development and Control of Medicinal products"
- 2005-2010 Member of Directive Committee of the Interuniversity Consortium TEFARCO Innova
- 2005- Member of the Teaching Board of PhD School of Biopharmaceutics and Pharmacokinetics, Universities of Parma and Pavia, and from 2014 of PhD School of Experimental Medicine, University of Pavia
- 2004-2013 Erasmus Coordinator of the Department of Drug Sciences, University of Pavia
- 2007-2020 Evaluation of research projects (Israel Science Foundation, French National Research Agency, Miur) and consultant for AIFA for AIC Dossiers evaluation
- 2001-2018 Associate Professor, Pharmaceutical Technology (SSD CHIM09), Department of Drug Sciences, University of Pavia
- 1993-2001 Assistant Professor, Pharmaceutical Technology (C08X), Department of Drug Sciences, University of Pavia

EDUCATION AND TRAINING

- 1992 Graduation in Pharmacy, University of Pavia
- 1991 Ph.D. Degree in Pharmaceutical Chemistry and Technology, University of Pavia
- 1987 Specialization School in Industrial Pharmacy, University of Pavia
- 1984 Graduation in Chemistry and Pharmaceutical Technology, University of Pavia

WORK ACTIVITIES

- Editorial activity** Member of the Editorial Board of: *Pharmaceutics* (MDPI) ISSN: 1999-4923; *Nanomaterials* (MDPI) ISSN: 2079-4991; *Molecules* (MDPI) ISSN: 1420-3049; *Smart Materials in Medicine* (KeAi) ISSN: 2590-1834.
- Invited presentations** BIT's Annual International Symposium of Drug delivery Systems, Praga (2017), EMN Meeting on Biomaterials, Milan (2018), NanoPT2018, Lisboa (2018)
- Patents**
 - 1) Caramella C.M., Bonferoni M.C. Complex between carrageenan and a water soluble drug having a specific granulometry and relative controlled release pharmaceutical compositions. PCT Application 1999 WO9921586; European Patent Application 2000 EP1030689; US Patent and Trademark Office Granted Patent 2002 US6355272
 - 2) De Gennaro M., Cerri G., Caramella C.M., Bonferoni M.C. Pharmaceutical zeolite-based compositions containing zinc and erythromycin to be used in the treatment of acne. PCT application 2002 WO 02100420
 - 3) Caramella C.M., Bonferoni M.C., Giunchedi P. Compositions with controlled release of lactic acid at vaginal level. PCT Application 2003 WO03000224; European Patent Application 2004 EP1399129; US Patent and Trademark Office Pre-granted Publication US20040132690
 - 4) Caramella C.M., Bonferoni M.C., Rossi S., Sandri G., Ferrari F., Perotti C., Del Fante C. Platelet lysate and bioadhesive compositions thereof for the treatment of mucositis, PCT Application 2010 WO2010064267 European

Patent Application EP2373321; United States Patent and Trademark Office Pre-Granted Publication 2011 US20110280952
 5) Ferrari F., Rossi S., Bonferoni M.C., Sandri G., Caramella C., Allegrini P., Pharmaceutical compositions, PCT Application 2014 WO2014053328; United States Patent and Trademark Office Pre-Granted Publication 2015 US20150272919
 6) Bonferoni M.C., Sandri G., Rossi S., Ferrari F., Caramella C., "Oil-in-water nanoemulsions" PCT Application 2016 WO2016063119; European Patent Application 2017 EP3209283; United States Patent and Trademark Office Pre-Granted Publication 2017 US20170354596
 7) Omini G., Bonferoni M.C., Sandri G., Rossi S., Caramella C., Ferrari F., Use of fine emulsions for the fractionated administration and for the organoleptic mask of unsaturated fatty acids PCT Application 2018 WO2018066011
 8) Macelloni C., Longo L.M., Rossi S., Sandri G., Bonferoni M.C., Ferrari F. Liquid delivery composition (Cosmo Technologies Ltd), European Patent Application 2018 n 17210119.8-1109, 14-2-2018
 9) Sandri G., Bonferoni M.C., Rossi S., Ferrari F. Electrospun nanofibers and membrane. (Università degli Studi di Pavia), PCT Application 2019 WO2019021325

ADDITIONAL INFORMATION

Research expertise and relevant Publications

Pharmaceutical development of controlled release formulations.

Study of mucoadhesion mechanisms, development of mucoadhesive dosage forms and of methods to measure mucoadhesion properties

Study of drug-polymer and polymer-polymer ionic interactions to obtain self-assembling microparticulate and nanoparticulate systems intended for mucosal and topical delivery of drugs

Development and characterization of colloidal systems (polymeric and lipid-based nanoparticles and micelles) for the delivery of poorly soluble drugs and peptidic drugs and for wound healing.

Study of the ionic modification of bioactive polysaccharides (chitosan, glycosaminoglycans) with hydrophobic molecules to obtain amphiphilic polymers for the stabilization of nanoemulsions and nanosuspensions, and for the association with polymeric and lipidic nanoparticles (polymer-lipid hybrids)

Development of amphiphilic chitosan coated nanoparticles (CS-NPs) loaded with antioxidants and polyphenols and more recently used as a carrier for the delivery of an antiviral siRNA. Nanoparticles and nanoemulsions for photodynamic therapy and for nose-to-brain delivery.

Total number of publications in peer review journals: 217 (Scopus)

Total number of citations: 7138 (Scopus)

H index: 51 (Scopus)

- 1) Miele, D., Xia, X., Catenacci, L., Sorrenti, M., Rossi, S., Sandri, G., Ferrari, F., Rossi, J.J., Bonferoni, M.C. Chitosan oleate coated PLGA nanoparticles as siRNA drug delivery system (2021) *Pharmaceutics*, 13 (10), art. no. 1716,
- 2) Miele, D., Sorrenti, M., Catenacci, L., Minzioni, P., Marrubini, G., Amendola, V., Maestri, M., Giunchedi, P., Bonferoni, M.C. Association of Indocyanine Green with Chitosan Oleate Coated PLGA Nanoparticles for Photodynamic Therapy (2022) *Pharmaceutics*, 14 (8), art. no. 1740,
- 3) Miele, D., Xia, X., Catenacci, L., Sorrenti, M., Rossi, S., Sandri, G., Ferrari, F., Rossi, J.J., Bonferoni, M.C. Chitosan oleate coated PLGA nanoparticles as siRNA drug delivery system (2021) *Pharmaceutics*, 13 (10), art. no. 1716
- 4) Catenacci, L., Marrubini, G., Sorrenti, M., Rossi, S., Sandri, G., Ferrari, F., Fagnani, V., Valentino, C., Bonferoni, M.C. Design of experiments-assisted development of clotrimazole-loaded ionic polymeric micelles based on hyaluronic acid (2020) *Nanomaterials*, 10 (4), art. no. 635
- 5) Miele, D., Rossi, S., Sandri, G., Viganì, B., Sorrenti, M., Giunchedi, P., Ferrari, F., Bonferoni, M.C. Chitosan oleate salt as an amphiphilic polymer for the surface modification of poly-lactic-glycolic acid (PLGA) nanoparticles. Preliminary studies of mucoadhesion and cell interaction properties (2018) *Marine Drugs*, 16 (11), art. no. 447
- 6) Bonferoni, M.C., Riva, F., Invernizzi, A., Dellerà, E., Sandri, G., Rossi, S., Marrubini, G., Bruni, G., Viganì, B., Caramella, C., Ferrari, F. Alpha tocopherol loaded chitosan oleate nanoemulsions for wound healing. Evaluation on cell lines and ex vivo human biopsies, and stabilization in spray dried Trojan microparticles (2018) *European Journal of Pharmaceutics and Biopharmaceutics*, 123, pp. 31-41
- 7) Bonferoni, M.C., Sandri, G., Rossi, S., Usai, D., Liakos, I., Garzoni, A., Fiamma, M., Zanetti, S., Athanassiou, A., Caramella, C., Ferrari, F. A novel ionic amphiphilic chitosan derivative as a stabilizer of nanoemulsions: Improvement of antimicrobial activity of *Cymbopogon citratus* essential oil (2017) *Colloids and Surfaces B: Biointerfaces*, 152, pp. 385-392