

PERSONAL INFORMATION **Francesco Cilurzo**

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Sex Male | Date of birth 02/06/1969 | Nationality Italian

## WORK EXPERIENCE

(from 2017-) **Director of the Specialisation School in Hospital Pharmacy**  
University of Milan

(from 2015-) **Associate Professor**  
Department of Pharmaceutical Science, University of Milan  
**Business or sector** Pharmaceutical Technology and regulatory affairs

(from 2003-) **Founder of Pharmafilm srl Spin off of University of Milan**  
Pharmafilm srl  
▪ Member of the board of directors  
**Business or sector** Technology transfer of pharmaceutical dosage forms

(from 2001 to 2015) **Assistant professor and research fellows**  
Department of Pharmaceutical Science, University of Milan  
**Business or sector** Pharmaceutical Technology and regulatory affairs

## EDUCATION AND TRAINING

2000 **Ph.D. in Pharmaceutical Technology and Regulatory Affairs**  
University of Cagliari, Italy

1995 **Degree in Industrial Pharmacy**  
University of Milan, Italy

PERSONAL SKILLS

Teaching

Pharmaceutical technology and Legislation  
 Innovative Pharmaceutical Technologies

Research interest

The main fields of research deal with the design of (A) transdermal, (B) parenteral and (C) oromucosal drug delivery systems. In details

(A) This activity aims to optimize the test procedures currently used to assure the quality of patches, namely adhesive properties, water vapour permeability and drug release. Furthermore, the *in vitro* skin penetration and permeation of active ingredients are studied aiming to evaluate the feasibility of passive strategies to enhance the drug absorption, focusing the attention on supersaturation. Recently, biotechnological approaches and nano-devices to enhance the skin penetration of macromolecules have been also studied.

(B) The research is mainly focused on the manipulation of poly(lactide-co-glycolide)s by grafting procedures and on the upcycle of natural biopolymers obtained by the regeneration of keratins and fibroins to the production of implantable microspheres. The research activities have been also dedicated to the technological aspects related to the development of drug eluting stents, or related systems, to reduce the restenosis risk after angioplasty.

(C) The research in this field is focused on formulation study and development of mucoadhesive dosage forms or orodispersible films with the aim to improve the compliance of particular patient subpopulations and the pre-gastric absorption.

ADDITIONAL INFORMATION

Publications

He is author or co-author of more than 100 publications on peer review journals and several patents. Moreover, he presented more than 150 contributions to international meetings.

Editorial board member

He is member of the editorial board of *Current Drug Delivery* and *Journal of Functional Biomaterials*. Moreover, he serves as a reviewer for many international journals.

Awards

He received the “Milan district prize for innovation” (2003), “Gloria Artec Award for innovation in medicines: from development to manufacturing” (2010) and “Pharmintech Award” in the section NewCo (2016).

ANNEXES

1. List of publication of the last five years



(Francesco Cilurzo)

Milan, 31.01.2019

## ANNEX 1 LIST OF PUBLICATIONS

1. Quaroni GMG, Gennari CGM, Cilurzo F, D. Guylaine, Creton C, Minghetti P., Tuning the rheological properties of an ammonium methacrylate copolymer for the design of adhesives suitable for transdermal patches (2018) *Eur. J. Pharm. Sci.*, 111: 238-246
2. Musazzi UM, Selmin F, Ortenzi MA, Mohammed GK, Franzé S, Minghetti P, Cilurzo F. Personalized orodispersible films by hot melt ram extrusion 3d printing (2018) *Int J Pharm*, 551: 52-59
3. Franzè S, Selmin F, Samaritani E, Minghetti P, Cilurzo F Lyophilization of Liposomal Formulations: Still Necessary, Still Challenging (2018) *Pharmaceutics*, 10(3): 139
4. Gennari C.G.M., Cilurzo F., Mitro N., Caruso D., Minghetti P., Magnaghi V. In vitro and in vivo evaluation of silk fibroin functionalized with GABA and allopregnanolone for Schwann cell and neuron survival (2018) *Regen. Med.* 13(2):141-157
5. Musazzi U.M., Cencetti C., Franzé S., Zoratto N., Di Meo C., Procacci P., Matricardi P., Cilurzo F. Gellan Nanohydrogels: Novel Nanodelivery Systems for Cutaneous Administration of Piroxicam (2018) *Mol Pharm.*, 15(3):1028-1036
6. Garipova V., Gennari C., Selmin F., Cilurzo F., Moustafine R. Mucoadhesive interpolyelectrolyte complexes for the buccal delivery of clobetasol (2018) *Polymers*,10(1): 85
7. Musazzi U.M., Selmin F., Franzé S., Gennari C.G.M., Rocco P., Minghetti P. Cilurzo F. Poly(methyl methacrylate) salt as film forming material to design orodispersible films (2018) *Eur. J. Pharm. Sci.*, 115:37-42
8. Quaroni GMG, Gennari CGM, Cilurzo F, D. Guylaine, Creton C, Minghetti P Tuning the rheological properties of an ammonium methacrylate copolymer for the design of adhesives suitable for transdermal patches (2018) *Eur. J. Pharm. Sci.*, 111: 238-246
9. Franzè S., Marengo A., Stella B., Minghetti P., Arpicco S., Cilurzo F. Hyaluronan-decorated liposomes as drug delivery systems for cutaneous administration (2018) *Int. J. Pharm.*, 535(1–2): 333–339
10. Musazzi U.M., Franzè S., Cilurzo F. Innovative pharmaceutical approaches for the management of inner ear disorders (2018) *Drug Delivery and Translational Research*, 8(2):436-449
11. Cilurzo F., Musazzi U.M., Franzè S., Selmin F., Minghetti P. Orodispersible dosage forms: biopharmaceutical improvements and regulatory requirements (2018) *Drug Discovery Today*, 23(2): 251-259
12. Rocco, P., Cilurzo, F., Minghetti, P., Vistoli, G., Pedretti, A. Simulation data for an estimation of the maximum theoretical value and confidence interval for the correlation coefficient (2017) *Data in Brief* 14: 291-294
13. Chiara G.M. Gennari, Francesca Selmin, Silvia Franzè, Umberto M. Musazzi, Gaia M.G. Quaroni, Antonella Casiraghi, Francesco Cilurzo A glimpse in critical attributes to design cutaneous film forming systems based on ammonium methacrylate (2017) *J. Drug Del. Sci. Tech* 41:157-163
14. Rocco P., Cilurzo F., Minghetti P., Vistoli G., Pedretti A. Molecular Dynamics as a tool for in silico screening of skin permeability (2017) *Eur. J. Pharm. Sci* 106: 328-335
15. Franzè S., Donadoni G., Podestà A., Procacci P., Orioli M., Carini M., Minghetti P., Colurzo F. Tuning the Extent and Depth of Penetration of Flexible Liposomes in Human Skin (2017) *Mol. Pharmaceutics* 14: 1998–2009
16. Musazzi UM, Santini B, Selmin F, Marini V, Corsi F, Allevi R, Ferretti AM, Prosperi D, Cilurzo F, Colombo M, Minghetti P Impact of semi-solid formulations on skin penetration of iron oxide nanoparticles (2017) *J. Nanobiotechnology* 15:14
17. Selmin F., Musazzi U.M.M., Cilurzo F., Minghetti P. Alternatives when an authorized medicinal product is not available (2017) *Medicine Access @ Point of Care*
18. Gennari CGM, Selmin F, Ortenzi MA, Franzé S, Musazzi UM, Casiraghi A, Minghetti P, Cilurzo F. In situ film forming fibroin gel intended for cutaneous administration (2016) *Int. J. Pharm.* 511: 296-302
19. Campani V., Biondi M., Mayol L., Cilurzo F., Pitaro M., De Rosa G. Development of nanoemulsions for topical delivery of vitamin K1 (2016) *Int. J. Pharm.*, 511: 170-177
20. Russo, E., Selmin, F., Baldassari, S., Gennari, C.G.M., Caviglioli, G., Cilurzo, F., Minghetti, P., Parodi, B. A focus on mucoadhesive polymers and their application in buccal dosage forms (2016) *J. Drug Del. Sci. Tech.*, 32: 113 - 125
21. Tolva V., Mazzola S., Zerbi P., Casana R., Albertini M., Calvillo L., Selmin F., Cilurzo F. A successful experimental model for intimal hyperplasia prevention using a Resveratrol eluting balloon. (2016) *J. Vasc. Surg.* 63(3): 789-794
22. Altomare A, Fasoli E, Colzani M, Paredes Parra XM, Ferrari M, Cilurzo F, Rumio C, Canizzaro L, Carini M, Righetti PG, Aldini G, An in depth proteomic analysis based on ProteoMiner, affinity chromatography and nano-HPLC-MS/MS to explain the potential health benefits of bovine colostrum (2016) *J Pharm Biomed Analysis* 121: 297-306
23. Campani V, Biondi M, Mayol L, Cilurzo F, Franzé S, Pitaro M, De Rosa G. Nanocarriers to Enhance the Accumulation of Vitamin K1 into the Skin (2016) *Pharm. Res*, 33(4): 893-908

24. Gennari CGM, Franzé S, Pellegrino S, Corsini E, Vistoli G, Montanari L, Minghetti P, Cilurzo F Skin penetrating peptide as a tool to enhance the permeation of heparin through human epidermis (2016) *Biomacromolecules* 17(1):46-55
25. Franceschini I, Selmin F, Pagani S, Minghetti P, Cilurzo F Nanofiller for the mechanical reinforcement of maltodextrins orodispersible films (2016) *Carbohydrate Polymers* 136:676-681
26. Tonetti C, Aluigi A, Selmin F, Cilurzo F, Mazzucchetti G Removal of Cu(II) ions from water using thermal treated horn – hoof powder as biosorbent (2015) *Desalin. Water Treat.* 55(4):1105-1115
27. Moustafin RI, Semina II, Garipova VR, Bukhovets AV, Sitenkov AY, Salakhova AR, Gennari CGM, Cilurzo F. Comparative Study of Polycomplex Oral Drug Delivery Systems Based on Carbopol® and Oppositely Charged Polyelectrolytes (2015) *PHARM CHEM J+*, 49(1): 1-6
28. Musazzi UM, Matera C, Dalla Noce C, Vacondio F, Vistoli G, De Amici M, Cilurzo F, Minghetti P. On the selection of an opioid for local skin analgesia: structure-skin permeability relationships (2015) *Int. J. Pharm.* 489(1-2): 177-185
29. Cilurzo F, Casiraghi A, Selmin F, Minghetti P. Supersaturation as a tool for skin penetration enhancement (2015) *Curr. Pharm. Design*, 20: 2733-44
30. Franzé S, Cilurzo F, Minghetti P. Insulin biosimilars: the case of the three ultra-rapid acting analogues (2015) *BioDrugs* 29(2): 113121
31. Cilurzo F., Gennari C.G.M., Selmin F., Franzé S., Musazzi U.M., Minghetti P. On the characterization of medicated plasters containing NSAIDs according to novel indications of USP and EMA: adhesive properties and in vitro skin permeation studies (2015) *Drug Dev. Ind. Pharm.* 41(2): 183-189
32. Franzé S., Gennari C.G.M., Minghetti P., Cilurzo F. Influence of chemical and structural features of low molecular weight heparins (LMWHs) on skin penetration (2015) *Int. J. Pharm.* 481(1–2): 79–83
33. Selmin S, Puoci F, Parisi OI, Franzé S, Musazzi UM, Cilurzo F Caffeic acid-PLGA conjugate to design drug delivery systems stable to irradiation (2015) *J. Function. Biomater.* 6(1): 1-13
34. Lai F., Franceschini I., Corrias F., Sala M.C., Cilurzo F., Pini E., Sinico C. Maltodextrin fast dissolving films for quercetin nanocrystal delivery. A feasibility study. (2015) *Carbohydrate Polymers* 121:217-223
35. Selmin F., Franceschini I., Cupone I.E., Minghetti P., Cilurzo F., Aminoacids as non-traditional plasticizers of maltodextrins fastdissolving films (2015) *Carbohydrate Polymers* 115:613-616
36. Cilurzo F., Selmin F., Gennari C.G.M., Montanari L, Minghetti P. Application of methyl methacrylate copolymers to the development of transdermal or loco-regional Drug Deliv. systems (2014) *Exp. Opin. Drug Del.*, 11(7):1033-1045.
37. Selmin F., Gennari C.G.M., Minghetti P, Marotta L.A. , Viviani B., Vagdama P., Montanari L., Cilurzo F. Enhanced hydration stability of Bombyx mori silk fibroin/PEG 600 composite scaffolds for tissue engineering (2014) *Polym. Advan. Technol.*, 25(5):532-538.
38. Cilurzo F., Vistoli G., Gennari C.: Selmin F., Gardoni F., Franzé S., Campisi M., Minghetti P. The role of the conformational profile of polysaccharides on skin penetration: the case of hyaluronan and sulfates thereof (2014) *Chem. Biodivers*, 11(3):551-561
39. Cilurzo F., Vistoli G., Selmin F., Gennari C., Musazzi U.M., Franzé S., Matteo Lo Monte M., Minghetti P. An insight into the skin penetration enhancement mechanism of n-methylpyrrolidone (2014) *Mol. Pharm.*, 11(3):1014-1021
40. Cilurzo F., Minghetti P., Gennari C.G.M., Casiraghi A.: Selmin F., Montanari L. Formulation study of a patch containing propranolol by design of experiments (2014) *Drug Dev. Ind. Pharm.* 40 (1):17-22