PERSONAL INFORMATION

Francesca Ungaro

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Sex female | *Date of birth* 10/05/1975 | *Nationality* Italian

Enterprise	University	EPR
☐ Management Level	☐ Full professor	☐ Research Director and 1st level Technologist / First Researcher and 2nd level Technologist / Principal Investigator
☐ Mid-Management Level	☒ Associate Professor	☐ Level III Researcher and Technologist
☐ Employee / worker level	☐ Researcher and Technologist of IV, V, VI and VII level / Technical collaborator	☐ Researcher and Technologist of IV, V, VI and VII level / Technical collaborator

WORK EXPERIENCE

2015-present

Associate Professor of Pharmaceutical Technology

Department of Pharmacy, University of Napoli Federico II, Napoli, Italy

- Leader of a research group of drug delivery working on design and development of inhalable particles for local treatment of lung inflammation/infection; Conceptualization, writing and coordination of research projects; Supervision of undergraduate, graduate and Ph.D. students; Teaching activity.

Business or sector University (Research and Education)

2005-2015

Assistant Professor of Pharmaceutical Technology

Department of Pharmacy (formerly Department of Pharmaceutical and Toxicological Chemistry), University of Napoli Federico II, Napoli, Italy

- Research activity in the drug delivery field, with a special focus on nano-/micro-particulate sytems; Conceptualization, writing and coordination of research projects; Supervisor of undergraduate, graduate and Ph.D. students; Teaching activity.

Business or sector University (Research and Education)

2003-2004

Research Fellow

Department of Pharmaceutical and Toxicological Chemistry, University of Napoli Federico II, Napoli, Italy (Supervisor: Prof. M.I.La Rotonda)

- Working on the development of biodegradable particles for delivery of oligonucleotides.

Business or sector University (Research and Education)

2000-2003

Ph.D. Student

Department of Pharmaceutical and Toxicological Chemistry, University of Napoli Federico II, Napoli, Italy (Supervisor: Prof. M.I.La Rotonda)

- Research activity in drug delivery as candidate for a Ph.D. focused on biodegradable particles for delivery of biotech drugs (proteins, oligonucleotides); Supervision of undergraduate students.

Business or sector University (Research and Education)

EDUCATION AND TRAINING

2017

National Scientific Qualification as Full Professor

Italian Ministry of University and Research (MIUR), Italy

- Qualification to cover a position as Full Professor in Pharmaceutical Technology in Italian University.

2003

Ph.D. in Pharmaceutical Sciences

University of Napoli Federico II, Italy

- Design and development of novel drug delivery systems, main particle fabrication and characterization techniques; writing of research grants and scientific papers.

1999 **Degree in Pharmacy (summa cum laude)**
University of Napoli Federico II, Italy
▪ Theoretical knowledge on drugs, Technical and laboratory skills in Analytical Chemistry

WORK ACTIVITIES

Awards

2013 Winner of the STAR Program 2013 for outstanding young researchers of University of Napoli Federico II (Review Panel: European Science Foundation).
2011 "Poster on the Podium" at Respiratory Drug Delivery- Europe, Berlin (Germany).

Editorial activity

Editorial Board member: *Pharmaceutics*, MDPI; *Current Nanomedicine*, Bentham Science publishers; *Current Drug Delivery*, Bentham Science publishers.
Review Editor: *Experimental Pharmacology and Drug Discovery, Frontiers in Pharmacology*, Frontiers.
Guest Editor: *Advanced Drug Delivery Reviews, Volume 75/2014,* Elsevier
Reviewer for International Scientific Journals

Invited presentations

The scientific impact of Prof. Ungaro's publications is contributed by more than 100 presentations at national/international symposia and 25 oral communications. Recent invited presentations are described in the followings.
F. Ungaro. Nanoparticelle ingegnerizzate per la veicolazione di farmaci al polmone nel trattamento di patologie polmonari severe. 61° Simposio AFI, June 8th-10th, **2022**, Rimini, Italy.
F. Ungaro. Overcoming lung barriers to siRNA delivery in cystic fibrosis through tailored lipid/polymer hybrid nanoparticles. RNA Therapeutics Focus Day - Oligonucleotide Delivery Systems, February 18th, **2020**, London, UK
F. Ungaro. Enabling pulmonary delivery of siRNA in cystic fibrosis lung inflammation: therapeutic potential of hybrid lipid/polymer nanoparticles. 17th Convention of FFC Investigators in Cystic Fibrosis, November 14th -16th, **2019**, Verona, Italy.
F. Ungaro. Overcoming Biological Barriers in Severe Lung Diseases through Tailored Inhalable Nanoparticles. Thematic Workshop "Pulmonary Drug Administration Diseases, Drugs, Devices and Innovative Technologies". April 17th, **2018**, Palermo, Italy.
F. Ungaro. Overcoming Biological Barriers in Severe Lung Diseases through Tailored Inhalable Nanoparticles. 13th International Conference and Exhibition on Nanomedicine and Pharmaceutical Nanotechnology. July 24th -25th, **2017**, Roma, Italy.

Grants

2022-2025 - *National Center for Gene Therapy and Drugs based on RNA Technology* (CN00000041) – Research Project funded by the Italian Ministry of University and Research (MUR) to University of Napoli Federico II (PI: Prof. A. Zampella) aimed to the development of gene therapy and drugs with RNA technology in five major areas of human diseases (genetic diseases, cancer, metabolic/cardiovascular diseases, neurodegenerative disorders and inflammatory/infectious diseases) (Research Coordinator for Spoke 5 "Inflammatory and Infectious diseases").

2022-2023 –*Development of nanoplatforms for RNA delivery to the lungs in Cystic Fibrosis* - Research agreement with Pioneering Medicine Explorations, Inc. (Cambridge, Massachusetts, U.S.A.) (Research Coordinator, 1 beneficiary).

2019-2022 - *Tackling biological barriers to antigen delivery by nanotechnological vaccines (NanoTechVax)*- (PRIN 20173ZECCM_004) - multicentre project funded by MIUR aimed to set up a next generation of nanovaccines through a deeper understanding of the impact of the delivery system on the immune response (Research Unit Coordinator).

2012-2023 – Prof Ungaro's research has been Research Unit Coordinator (FFC#10/2013; FFC#11/2013; FFC #12/2014; FFC#19/2015) and collaborator (FFC#8/2019; FFC#19/2019; FFC#1/2020) of several project funded Italian Cystic Fibrosis Research Foundation.

2017-2019 - *Enabling pulmonary delivery of siRNA in cystic fibrosis lung inflammation: therapeutic potential of hybrid lipid/polymer nanoparticles*- (FFC#23/2017; FFC#25/2018) - – two one-year multicentre projects in collaboration with Prof. O.M. Merkel of LMU (Munich, Germany) funded by Italian Cystic Fibrosis Research Foundation aimed to the development of hybrid nanoparticles for lung delivery of siRNA in CF (Principal investigator, 2 beneficiaries).

2016-2018 - *New inhalable compounds against the CF pathogen Burkholderia cenocepacia* - multicentre project funded by the Cystic Fibrosis Foundation (USA) to Prof. G. Riccardi (PI, University of Pavia) aimed to advance a new antimicrobial agent to preclinical studies (Sub-contractor, 4 beneficiaries).

Patents

EP2600908- F. Quaglia, G. Marenzi, M.I. La Rotonda, G. Sammartino, A. Miro, **F. Ungaro**. BIOADHESIVE POLYMER-BASED CONTROLLED-RELEASE SYSTEMS, PRODUCTION PROCESS AND CLINICAL USES THEREOF, EPO Bullettin 2014/21.

ADDITIONAL INFORMATION

Publications

Total number of publications in peer-review journals **96**
Number of publications in peer-review journals – last 10 years **63**
Total Impact Factor (IF) (average IF/paper), **663.25 (6.982/paper)**
Total number of citations **3628**
H index **34**

Relevant publications (last 5 years)

Cresti L, Conte G, Cappello G, Brunetti J, Falciani C, Bracci L, Quaglia F, **Ungaro F**, d'Angelo I, Pini A. Inhalable Polymeric Nanoparticles for Pulmonary Delivery of Antimicrobial Peptide SET-M33: Antibacterial Activity and Toxicity In Vitro and In Vivo. *Pharmaceutics*. **2023**. doi: 10.3390/pharmaceutics15010003.

Costabile G, Mitidieri E, Visaggio D, Provenzano R, Miro A, Quaglia F, d'Angelo I, Frangipani E, Sorrentino R, Visca P, d'Emmanuele di Villa Bianca R, **Ungaro F***. Boosting lung accumulation of gallium with inhalable nano-embedded microparticles for the treatment of bacterial pneumonia. *Int J Pharm*. **2022**, 629:122400.

Conte G, Costabile G, Baldassi G., Rondelli V, Bassi R, Colombo D, Linardos G, Fiscarelli EV, Sorrentino R, Miro A, Quaglia F, Brocca P, d'Angelo I, Merkel OM, **Ungaro F***, Hybrid lipid/polymer nanoparticles to tackle the cystic fibrosis mucus barrier in siRNA delivery to the lungs: does PEGylation make the difference? *ACS Applied Materials & Interfaces*, **2022**, https://doi.org/10.1021/acsami.1c14975

Comegna M, Conte G, Falanga AP, Marzano M, Cernera G, Di Lullo AM, Amato F, Borbone N, D'Errico S, **Ungaro F**, d'Angelo I, Oliviero G, Castaldo G. Assisting PNA transport through cystic fibrosis human airway epithelia with biodegradable hybrid lipid-polymer nanoparticles *Sci Rep*. **2021**, 11(1):6393.

Conte C, Monteiro PF, Gurnani P, Stolnik S, **Ungaro F**, Quaglia F, Clarke P, Grabowska A, Kavallaris M, Alexander C. Multi-component bioresponsive nanoparticles for synchronous delivery of docetaxel and TUBB3 siRNA to lung cancer cells. *Nanoscale*, **2021**, 13(26):11414.

Costabile G, Provenzano R, Azzalin, A, Scoffone VC, Chiarelli LR, Rondelli V, Grillo I, Zinn T, Lepioshkin A, Savina S, Miro A, Quaglia F, Makarov V, Coenye T, Brocca P, Riccardi G, Buroni, **Ungaro F***. PEGylated mucus-penetrating nanocrystals for lung delivery of a new FtsZ inhibitor against Burkholderia cenocepacia infection *Nanomedicine*. 23 (2020):102113.

Casciaro B, d'Angelo I, Zhang X, Loffredo MR, Conte G, Cappiello F, Quaglia F, Di YP, **Ungaro F***, Mangoni ML*. Poly(lactide- co-glycolide) Nanoparticles for Prolonged Therapeutic Efficacy of Esculentin-1a-Derived Antimicrobial Peptides against Pseudomonas aeruginosa Lung Infection: in Vitro and in Vivo Studies. *Biomacromolecules*. 20 (2019):1876.

d'Angelo I, Costabile G, Durantie E, Brocca P, Rondelli V, Russo A, Russo G, Miro A, Quaglia F, Petri-Fink A, Rothen-Rutishauser B*, **Ungaro F***. Hybrid lipid/polymer nanoparticles for pulmonary delivery of siRNA: development and fate upon in vitro deposition on the human epithelial airway barrier. *J Aerosol Med Pulm Drug Deliv*. 31(2018):170.

Naples, May 9th, 2023