BIOGRAPHICAL SKETCH

NAME: Stefano Giovagnoli

POSITION TITLE: Associate Professor, Dept. of Pharmaceutical Sciences, via del Giochetto, 06122, University of Perugia, Perugia, Italy

EDUCATION/TRAINING

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	Completion Date MM/YYYY	FIELD OF STUDY
Department of Chemistry, University of Perugia, Perugia, Italy	*Chemistry*	11/1997	Brillouin Spectroscopy
Glaxo Wellcome, Ware, UK	-	11/2000	R&D formulation development
School of Pharmacy, University of Kentucky, KY, USA.	-	01/2003	Microencapsulation of proteins and peptides
Department of Drug Chemistry and Technology, University of Perugia, Perugia, Italy	PhD	01/2004	Novel strategies of microencapsulation'
School of Pharmacy, University of Kentucky, KY, USA	-	01/2008	Microencapsulation, fast dissolving films

A. Personal Statement

Personal long-term research experience involves several areas of drug discovery and development with a special focus on technologies applied to drug delivery. In particular, personal expertise includes chemical/physical modification and microencapsulation techniques for biomolecules and antibiotics. Research interests encompass respirable powders for the treatment of pulmonary infections by host-directed approaches along with organic/inorganic nanoparticles for targeted and local delivery. Since 2018, I have been involved in Cystic Fibrosis research by participating to and leading several projects focused on the treatment of pathological inflammation and infection in CF. In particular, we delivered xenobiotic receptor agonists to prove the efficacy of the AhR targeting strategy in CF lung and intestinal pathology but also developed inhaled and oral platforms for targeting the IL-1 pathway in CF as a potent treatment and prevention of CF disease progression either locally or systemically.

Latest interests include the avail of the microfluidic technology to promote the development of biomimetic nanoparticles and protein-based nanoparticle delivery systems, extracellular vesicles as potential carriers and therapeutic agents as well as leveraging AI based strategies to promote process development and drug discovery. My professional teaching experience includes biotechnology biopolymers and nanotechnology in drug delivery and gene therapy as well as industrial development and manufacturing of pharmaceutical products.

My current scientific production encompasses more than 140 publications and 150 presentations to international meetings, several books and book chapters and patents (H-index scopus = 39).

B. Positions, Scientific Appointments and Honors

2022-present	Delegate for Research and Fundraising of the Dept. of Pharmaceutical Sciences, University of Perugia, Italy
2019-present	Associate Deputy for Research and Fundraising of the University of Perugia
2017 - present	Associate Professor in Pharmaceutical Technology and Biotechnology, Dept. Pharmaceutical Sciences, University of Perugia, Italy

2014-2017	Adjunct Professor of Pharmaceutical Technology and Biotechnology, Department of Pharmaceutical Sciences, University of Perugia.
2014	Visiting Professor of Pharmaceutical Technology, National and Capodistrian University of Athens, Athens, Greece
2014	Visiting Professor of Pharmaceutical Technology, Jagiellonian University, Krakow, Poland
2009 – 2013	Adjunct Professor of Pharmaceutical Technology and Biotechnology, Department of Drug Chemistry and Technology, University of Perugia.
2004 – 2007	Assistant Professor in Pharmaceutical Technology Dept. of Drug Chemistry and Technology, University of Perugia
2004	AAPS Outstanding Graduate Student Award in Pharmaceutical Technology sponsored by Solvay Pharmaceuticals and the American Association of Pharmaceutical Scientists (AAPS).
Current Editorial Positions	**Editor in Chief** of Recent Advances in Drug Delivery & Formulations **Associate Editor** of Frontiers in Pharmacology **Guest Editor** of Pharmaceutics **Guest Editor** of International Journal of Molecular Sciences **Editorial Board Member**: Journal of Pharmaceutical Innovation, Pharmaceutics, Current Drug Development Technologies
Positions in Scientific Associations	• **Past- Treasurer –** Local Section – Italian Chemical Society • **Current- Auditors Council Member** - Italian Controlled Release Society Chapter • **2019-2021- Vice-President -** Local Section– Italian Chemical Society
Current Memberships	The American Association of Pharmaceutical Scientists (AAPS), Italian Chemical Society (SCI), AAPS Italian University Network (AItUN), The Association of Italian Faculties of Pharmaceutical Technology and Regulation (ADRITELF). The aerosol Society Italian Controlled Release Society Chapter

C. Contributions to Science

Publications, books chapters and patents

BOOK: Hickey, Anthony J., Giovagnoli, Stefano (2018). Pharmaceutical Powder and Particles. AAPS INTRODUCTIONS IN THE PHARMACEUTICAL SCIENCES, vol. 1, ISBN: 978-3-319-91219-6, ISSN: 2522-834X, doi: 10.1007/978-3-319-91220-2

Hickey, Anthony J., Giovagnoli, Stefano (2025). Pharmaceutical Powder and Particles. AAPS INTRODUCTIONS IN THE PHARMACEUTICAL SCIENCES, vol. 2, ISBN: 978-3-031-83670-1, ISSN: 2522-834X, doi: 10.1007/978-3-031-83671-8

Book chapters:

1. P. Blasi, A. Schoubben, S. Giovagnoli, C. Rossi, M. Ricci (2011). Solid lipid nanoparticles to improve brain drug delivery. Polymeric Nanomaterials. Kumar, Challa S. S. R., Wiley- VCH p. 365 – 394.
2. S Giovagnoli, A Schoubben and C Rossi- Ion Pairing for Controlling Drug Delivery- In: Drug Delivery Systems for Tuberculosis Prevention and Treatment, First Edition. Edited by Anthony J. Hickey, Amit Misra and P. Bernard Fourie. 2016, Wiley- VCH p. 239 – 257

3. S. Giovagnoli, A Cappelli- Stabilità dei Medicinali,in Tecnologie Farmaceutiche. P.Caliceti Ed.. CEA Casa Editrice Ambrosiana, 2025

Patents and patent applications:

1. Dolcetta Diego; Cassano Tommaso; Giovagnoli Stefano; Magini Alessandro; Emiliani Carla (2013). Intrathecal administration of mTOR inhibitors for the therapy of neurodegenerative, neuroinflammatory and neurooncologic diseases. WO 2013168131 A1 Nov 14, 2013.
2. Blasi Paolo; Calvitti Mario; Giovagnoli Stefano; Lilli Cinzia; Ricci Maurizio; Rossi Carlo; Schoubben Aurelie Marie-Madeleine Denise; Vedovelli Angelo- Pharmacological adjuvants for tumor thermoablation- European patent application EP17177183.5, June 21, 2017
3. Blasi Paolo, Calvitti Mario, Giovagnoli Stefano, Lilli Cinzia, Ricci Maurizio, Rossi Carlo, Schoubben Aurelie, Vedovelli Angelo (2016). Adiuvanti Farmacologici per la Termoablazione Tumorale. Italian Patent. 102016000065522. December 19th, 2018
4. Romani Luigina, Puccetti Paolo, Zelante Teresa, Ricci Maurizio, Giovagnoli Stefano (2016). Use of indole-3-aldehyde for treating dysreactive immune disorders. EP3035967 (A1).
5. Diego Dolcetta, Stefano Giovagnoli, Alessandro Magini. Somministrazione di inibitori di mtor nel sistema nervoso centrale, Italian Patent application n 102020000007228, April 6th 2020.
6. Bertelli, Matteo; Manara, Elena; Maltese, Paolo Enrico; Cecchin, Stefano; Marceddu, Giuseppe; Anpilogov, Kyrylo; Paolacci, Stefano; Malacarne, Daniele; Zelante, Teresa; Giovagnoli, Stefano; Caricato, Debora; Brizzi, Leonardo Composizione per il trattamento delle mucositi orali radio-indotte. Italian Patent Application 102021000023381, 09.09.2021.
7. Giovagnoli Stefano, Pariano Marilena, Puccetti Matteo, Ricci Maurizio. Composizione farmaceutica inalabile comprendente la proteina anakinra per il trattamento dell'infiammazione nella fibrosi cistica. Italian Patent application n 102022000007844, April 21, 2022.
8. Katia Cappelli, Stefano Giovagnoli, Elisa Rampacci, Claudio Costantini, Claudia Stincardini, Samanta Mecocci. Procedimento di preparazione di una polvere secca di vescicole extracellulari (EVs) e polvere secca di EVs. 20 dicembre 2024, 102024000029490,
9. Simone FERLIN, Anna VIVIANI, Daniele CANESTRARI, Aurélie Marie-Madeleine Denise SCHOUBBEN, Desirée BARTOLINI, Vincenzo FALCONE, Stefano GIOVAGNOLI, Ganaloxone per la somministrazione naso-cervello e composizioni farmaceutiche, application n 102025000021271, August 11, 2025.

Publications (last 3 years)

See https://orcid.org/0000-0001-5043-7233 for a complete list of contributions

1. Muawiya M.A., Schiavi D., Rongai D., Giovagnoli S., Camaioni E., Balestra G.M. Pomegranate peel extract as a sustainable plant protection agent against Xanthomonas campestris pv. campestris: mechanisms and applications (2025) Journal of Plant Pathology, March 2025.
2. Arato I., Giovagnoli S., Roscini L., Calvitti M., Bellucci C., Lilli C., Eugeni E., Brancorsini S., Cardinali G., Luca G., Mancuso F. Exploring Sertoli Cells' Innate Bulwark Role Against Infections: In Vitro Performances on Candida tropicalis Biofilms. (2025) Cells, 14 (7), art. no. 495.
3. Urbanelli L., Delo F., Cerrotti G., Albertini E., Lucci J., Buratta S., Calzoni E., Giovagnoli S., Lugini L., Federici C., Fratini F., Mercati V., Emiliani C. Cross-Kingdom Communication via Plant-Derived Extracellular Vesicle Nucleic Acids in Genetically Engineered Nicotiana tabacum. (2025) Genes, 16 (3), art. no. 356.
4. Wojtyło, P.A.; Łapińska, N.; Bellagamba, L.; Camaioni, E.; Mendyk, A.; Giovagnoli, S. Initial Development of Automated Machine Learning-Assisted Prediction Tools for Aryl Hydrocarbon Receptor Activators. Pharmaceutics 2024, 16, 1456
5. Russo MA, Puccetti M, Costantini C, Giovagnoli S, Ricci M, Garaci E and Romani L (2024) Human and gut microbiota synergy in a metabolically active superorganism: a cardiovascular perspective. Front. Cardiovasc. Med. 11:1411306
6. Puccetti M, Costantini C, Schoubben A, Giovagnoli S and Ricci M (2024) Strategies and delivery systems for cell-based therapy in autoimmunity. Front. Drug Deliv. 4:1436842
7. Pariano M, Gidari A, Stincardini C, Pierucci S, Bastianelli S, Puccetti M, Giovagnoli S, Bellet MM, Fabi C, Castronari R, Antognelli C, Costantini C, Ricci M, Francisci D, Romani L. Protective Effect of Indole-3-Aldehyde in Murine COVID-19-Associated Pulmonary Aspergillosis. J Fungi (Basel). 2024 22;10(7):510

8. Giorgia Renga, Marilena Pariano, Fiorella D'Onofrio, Giuseppe Pieraccini, Claudia Di Serio, Valeria Rachela Villella, Carlo Abbate, Matteo Puccetti, Stefano Giovagnoli, Claudia Stincardini, Marina Maria Bellet, Maurizio Ricci, Claudio Costantini, Vasileios Oikonomou, Luigina Romani The immune and microbial homeostasis determines the Candida–mast cells cross-talk in celiac diseaseLife Science Alliance. 2024, 7 (7) e202302441;
9. Matteo Puccetti, Marilena Pariano, Aurelie Schoubben, Maurizio Ricci, Stefano Giovagnoli, Engineering carrier nanoparticles with biomimetic moieties for improved intracellular targeted delivery of mRNA therapeutics and vaccines, Journal of Pharmacy and Pharmacology, 76, 6, 2024, 592–605
10. Costantini C, Pariano M, Puccetti M, Giovagnoli S, Pampalone G, Dindo M, Cellini B and Romani L (2024) Harnessing inter-kingdom metabolic disparities at the human-fungal interface for novel therapeutic approaches. Front. Mol. Biosci. 11:1386598
11. Zelante, T., Paolicelli, G., Fallarino, F. et al. A microbially produced AhR ligand promotes a Tph1-driven tolerogenic program in multiple sclerosis. Sci Rep 14, 6651 (2024)
12. Matteo Puccetti, Marilena Pariano, Aurélie Schoubben, Stefano Giovagnoli, Maurizio Ricci, Biologics, theranostics, and personalized medicine in drug delivery systems, Pharmacological Research, 201,2024,107086,
13. Arato I, Giovagnoli S, Di Michele A, Bellucci C, Lilli C, Aglietti MC, Bartolini D, Gambelunghe A, Muzi G, Calvitti M, Eugeni E, Gaggia F, Baroni T, Mancuso F and Luca G (2023) Nickel oxide nanoparticles exposure as a risk factor for male infertility: "In vitro" effects on porcine pre-pubertal Sertoli cells. Front. Endocrinol. 14:1063916
14. Gianessi, L.; Magini, A.; Dominici, R.; Giovagnoli, S.; Dolcetta, D. A Stable Micellar Formulation of RAD001 for Intracerebroventricular Delivery and the Treatment of Alzheimer's Disease and Other Neurological Disorders. Int. J. Mol. Sci. 2023, 24, 17478
15. Cellini, Barbara; Pampalone, Gioena; Camaioni, Emidio; Pariano, Marilena; Catalano, Flavia; Zelante, Teresa; Dindo, Mirco; Macchioni, Lara; Di Veroli, Alessandra; Galarini, Roberta; Paoletti, Fabiola; Davidescu, Magdalena; Stincardini, Claudia; Vascelli, Gianluca; Bellet, Marina Maria; Saba, Julie; Giovagnoli, Stefano; Giardina, Giorgio; Romani, Luigina; Costantini, Claudio. Dual species sphingosine-1-phosphate lyase inhibitors to combine antifungal and anti-inflammatory activities in cystic fibrosis: a feasibility study. Scientific Reports, 2023, 13, 22692.
16. Francesconi, S.; Ronchetti, R.; Camaioni, E.; Giovagnoli, S.; Sestili, F.; Palombieri, S.; Balestra, G.M. Boosting Immunity and Management against Wheat Fusarium Diseases by a Sustainable, Circular Nanostructured Delivery Platform. Plants 2023, 12, 1223.
17. Schiavi D, Ronchetti R, Di Lorenzo V, Vivani R, Giovagnoli S, Camaioni E, Balestra GM. Sustainable Protocols for Cellulose Nanocrystals Synthesis from Tomato Waste and Their Antimicrobial Properties against Pseudomonas syringae pv. tomato. Plants 2023 18;12(4):939.
18. Manni G, Buratta S, Pallotta MT, Chiasserini D, Di Michele A, Emiliani C, Giovagnoli S, Pascucci L, Romani R, Bellezza I, Urbanelli L, Fallarino F. Extracellular Vesicles in Aging: An Emerging Hallmark? Cells. 2023 6;12(4):527.
19. Puccetti M, Schoubben A, Giovagnoli S, Ricci M. Biodrug Delivery Systems: Do mRNA Lipid Nanoparticles Come of Age? Int J Mol Sci. 2023 22;24(3):2218.
20. Puccetti M, Pariano M, Wojtylo P, Schoubben A, Giovagnoli S, Ricci M. Turning Microbial AhR Agonists into Therapeutic Agents via Drug Delivery Systems. Pharmaceutics. 2023 3;15(2):506.
21. Puccetti, M., Pariano, M., Stincardini, C., Wojtylo, P., Schoubben, A., Nunzi, E., Ricci, M., Romani, L., Giovagnoli, S. Pulmonary drug delivery technology enables anakinra repurposing in cystic fibrosis. (2023) Journal of Controlled Release, 353, pp. 1023-1036.
22. Xiroudaki, S., Sabbatini, S., Pecoraro, C., Cascioferro, S., Diana, P., Wauthoz, N., Antognelli, C., Monari, C., Giovagnoli, S., Schoubben, A. Development of a new indole derivative dry powder for inhalation for the treatment of biofilm-associated lung infections. (2023) International Journal of Pharmaceutics, 631, art. no. 122492.
23. Chiaradia E, Sansone A, Ferreri C, Tancini B, Latella R, Tognoloni A, Gambelunghe A, dell'Omo M, Urbanelli L, Giovagnoli S, Pellegrino RM, Cerrotti G, Emiliani C, Buratta S. Phospholipid fatty acid remodeling and carbonylated protein increase in extracellular vesicles released by airway epithelial cells exposed to cigarette smoke extract. Eur J Cell Biol. 2023 102(1):151285.
24. Pariano M, Puccetti M, Stincardini C, Napolioni V, Gatticchi L, Galarini R, Renga G, Barola C, Bellet MM, D'Onofrio F, Nunzi E, Bartoli A, Antognelli C, Cariani L, Russo M, Porcaro L, Colombo C, Majo F, Lucidi V, Montemitro E, Fiscarelli E, Ellemunter H, Lass-Flörl C, Ricci M, Costantini C, Giovagnoli S,

Romani L. Aryl Hydrocarbon Receptor Agonism Antagonizes the Hypoxia-driven Inflammation in Cystic Fibrosis. Am J Respir Cell Mol Biol. 2023 68(3):288-301.
25. Pacławski, A., Politis, S., Balafas, E., Mina, E., Papakyriakopoulou, P., Christodoulou, E., Kostomitsopoulos, N., Rekkas, D.M., Valsami, G., Giovagnoli, S. Development and Pharmacokinetics of a Novel Acetylsalicylic Acid Dry Powder for Pulmonary Administration. (2022) Pharmaceutics, 14 (12), art. no. 2819.
26. Puccetti, M., Pariano, M., Costantini, C., Giovagnoli, S., Ricci, M. Pharmaceutically Active Microbial AhR Agonists as Innovative Biodrugs in Inflammation. (2022) Pharmaceuticals, 15 (3), art. no. 336.
27. Schiavi, D., Ronchetti, R., Di Lorenzo, V., Salustri, M., Petrucci, C., Vivani, R., Giovagnoli, S., Camaioni, E., Balestra, G.M. Circular Hazelnut Protection by Lignocellulosic Waste Valorization for Nanopesticides Development. (2022) Applied Sciences (Switzerland), 12 (5), art. no. 2604.
28. Renga, G., Nunzi, E., Pariano, M., Puccetti, M., Bellet, M.M., Pieraccini, G., D'Onofrio, F., Santarelli, I., Stincardini, C., Aversa, F., Riuzzi, F., Antognelli, C., Gargaro, M., Bereshchenko, O., Ricci, M., Giovagnoli, S., Romani, L., Costantini, C. Optimizing therapeutic outcomes of immune checkpoint blockade by a microbial tryptophan metabolite. (2022) Journal for immunotherapy of cancer, 10 (3).
29. van de Veerdonk, F.L., Renga, G., Pariano, M., Bellet, M.M., Servillo, G., Fallarino, F., de Luca, A., Iannitti, R.G., Piobbico, D., Gargaro, M., Manni, G., D'Onofrio, F., Stincardini, C., Sforna, L., Borghi, M., Castelli, M., Pieroni, S., Oikonomou, V., Villella, V.R., Puccetti, M., Giovagnoli, S., Galarini, R., Barola, C., Maiuri, L., della Fazia, M.A., Cellini, B., Talesa, V.N., Dinarello, C.A., Costantini, C., Romani, L. Anakinra restores cellular proteostasis by coupling mitochondrial redox balance to autophagy. (2022) Journal of Clinical Investigation, 132 (2), art. no. 144983.
30. Mancuso, F., Arato, I., Di Michele, A., Antognelli, C., Angelini, L., Bellucci, C., Lilli, C., Boncompagni, S., Fusella, A., Bartolini, D., Russo, C., Moretti, M., Nocchetti, M., Gambelunghe, A., Muzi, G., Baroni, T., Giovagnoli, S., Luca, G. Effects of Titanium Dioxide Nanoparticles on Porcine Prepubertal Sertoli Cells: An "In Vitro" Study. (2022) Frontiers in Endocrinology, 12, art. no. 751915

Research Support

Grant History (last 5 years)

1. HORIZON-HLTH-2023-DISEASE-03-04- Grant # 101137192. Antiviral therapeutics for rapid response against pandemic infectious diseases (AVITHRAPID). 2023-2028
2. PRIN 2022 Project# P2022CCJAE. Valorising milk as natural resource for therapeutic purpose: bovine milk Extracellular Vesicles (mEVs) as anti-inflammatory and immunomodulatory agents (MilkEVia). 2023-2025.
3. MIPAAF grant - ANCOSIX-Nanotechnology approaches for innovative and sustainable control of Xylella. 2023-2027
4. US Cystic Fibrosis Foundation Grant #004002G222- Host and microbial sphingosine-1-phosphate lyase as novel drug targets, Grant 2022-2024.
5. FFC#17/2020 Italian Cystic Fibrosis Foundation- Oral and pulmonary delivery platforms for anakinra repurposing in cystic fibrosis. 2020-2022
6. FFC#16/2020 -Italian Cystic Fibrosis Foundation Grant: - Exploring the dual targeting of host and microbial sphingosine-1-phosphate lyase as antimicrobial strategy in cystic fibrosis. 2020 -2021