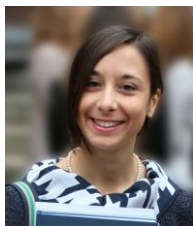


PERSONAL INFORMATION

Francesca Rinaldi



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Sex Female | *Date of birth* 26/07/1990 | *Nationality* Italian

Research fellow

WORK EXPERIENCE

- 2022-present **Research fellow (CHIM/08)**
Department of Drug Sciences, University of Pavia, Italy.
- 2021-2022 **Research grant (b type)**
Department of Drug Sciences, University of Pavia, Italy.
Program: "Sviluppo di supporti innovativi per l'estrazione selettiva di farmaci". Funding: CE4WE (Regione Lombardia, Call "Hub Ricerca e Innovazione"). Grant attributed by public competition (CHIM/08).
- 2020-2021 **Research grant (a type)**
Department of Drug Sciences, University of Pavia, Italy.
Program: "Monoclonal antibodies affinity isolation and remodelling: an integrated polyHIPEs-based platform". Funding: Fondo Ricerca Giovani MIUR. Grant attributed by public competition (CHIM/08).
- 2019-2020 **Research scholarship**
Department of Drug Sciences, University of Pavia, Italy.
Topic: "Messa a punto di metodiche analitiche per lo studio di macromolecole di interesse farmaceutico".
- 2017-2019 **Research scholarship**
Department of Drug Sciences, University of Pavia, Italy.
Topic: "BIOFLOW: an innovative platform for the in-flow biocatalytic preparation of high value chemicals" (2016-0731 project funded by Fondazione Cariplo).
- Teaching activity **Lectures** for the following courses: Drug discovery and biotechnological drugs (Medical and Pharmaceutical Biotechnologies), 2022/2023; Analisi dei Farmaci Biotecnologici (Biotecnologie), 2021/2022, 2020/2021
Training for the staff of Centro Nazionale per il Controllo e la Valutazione dei Farmaci dell'Istituto Superiore di Sanità (Roma): 2 seminars, 2021/2022
Seminars for laboratories within the following courses: Analisi Farmaceutica 2 (Farmacia), 2021/2022, 2020/2021; Analisi Farmaceutica 2 (CTF), 2020/2021, 2018/2019; Analisi Farmaceutica 1 (CTF), 2019/2020, 2018/2019
Co-supervisor of 6 thesis in the following degree programs: Chimica e Tecnologia Farmaceutiche 2021/2022, 2020/2021, 2019/2020; Biotecnologie Mediche e Farmaceutiche 2019/2020
Tutoring activity for laboratories within the following courses: Analisi Farmaceutica 2 (Farmacia), 2016/2017, 2015/2016, 2014/2015 (40 h/academic year); Chimica e Analisi Farmaceutica 3 (CTF), 2013/2014 (20 h)

EDUCATION AND TRAINING

- 2020 **Subject expert (CHIM/08)**
- 2014-2018 **PhD in Chemical and Pharmaceutical Sciences XXX cycle (Excellent)**
University of Pavia, Italy.
PhD Thesis: Innovative analytical methodologies for the development of new antitubercular agents.
Tutor: Prof. Enrica Calleri. Co-tutor: Prof. Caterina Temporini.

- 2016-2017 **Research stay in Germany within the PhD course**
Steinbeis Centre for Biopolymer Analysis and Biomedical Mass Spectrometry, Rüsselsheim Am Main, Germany. Supervisor: Prof. Michael Przybylski.
- 2012-2014 **Master Degree in Medical and Pharmaceutical Biotechnology (110/110 L)**
University of Pavia, Italy.
MSc. Thesis: Rational design, synthesis and structural characterization by LC-MS of a new glycovaccine against tuberculosis. Supervisor: Prof. Caterina Temporini. Co-supervisor: Dott. Luciano Piubelli.
- 2009-2012 **Bachelor Degree in Biotechnology (110/110L)**
University of Pavia, Italy.
Bc. Thesis: Test di biocompatibilità e di "wound healing" in vitro applicati alla valutazione di una formulazione gel. Supervisor: Prof. Maria Cristina Bonferoni.

WORK ACTIVITIES

- Awards and grants** Best poster award (2° APP-MS 2015) allowing the free participation to the practical session at the Shimadzu laboratories in Kyoto (Japan).
Conference fellowships (RDPA 2015; 9° MS Pharmaday 2016; 2nd IMaSS Network 2017; NMMC27 2022).
International mobility grant (University of Pavia) from September 2016 to February 2017.
Residential fellowship (Ghislieri College) from January 2017 to December 2017.
- Editorial activity** Reviewer for Analytical Biochemistry and the Journal of Pharmaceutical and Biomedical Analysis.
- Conferences** Presenter of 9 oral communications and 13 posters during national and international conferences.

PERSONAL SKILLS

- Mother tongue(s)** Italian
- Other language(s)** English: intermediate level. Preliminary English Test (11/2007)
French: basic level
- Job-related skills** Solid expertise in the use of HPLC-UV and HPLC-DAD (Agilent HP-1100 and 1200 series, Thermo Scientific Dionex-UltiMate 3000), MS and MS/MS (Thermo Scientific LTQ, Bruker Autoflex III Smartbeam). Good knowledge of the use of SPR instrumentation (Reichert SR7500DC).
- Digital skills** Google Chrome, Internet Explorer, Firefox; Microsoft Office™; ChemStation (Agilent), Chromeleon (Thermo Scientific), Xcalibur software (Thermo Scientific), flexControl (Bruker), mMass - Open Source Mass Spectrometry Tool, TraceDrawer (Ridgeview Instruments AB); PubMed, Google Scholar.

ADDITIONAL INFORMATION

- Statement of Research Interests** My scientific and research activity is based on the use of both established analytical techniques and innovative experimental approaches, which are applied to research lines addressing different analytical-pharmaceutical issues which come along the entire drug discovery and development process. I have been involved in different projects ranging from the development and characterization of glycoproteins for the design of TB vaccines by applying complementary LC-UV, LC-MS and SPE-MS methodologies, to the characterization of drugs (small molecules and biopharmaceuticals), the set-up of biochromatographic systems by enzyme immobilization for different medicinal chemistry applications and the investigation of innovative solid supports (polymerized High Internal Phase Emulsions - polyHIPEs) for applications in the pharmaceutical field.

- Publications** total number of publications in peer-review journals: 15
total Impact Factor (IF) (average IF/paper): 4,617
total number of citations: 140
H index (Scopus): 7

P1. *Application of a rapid HILIC-UV method for synthesis optimization and stability studies of immunogenic neo-glycoconjugates.* Rinaldi F., Tengattini S., Calleri E., Bavaro T., Piubelli L., Pollegioni L., Massolini G., Temporini C. Journal of Pharmaceutical and Biomedical Analysis 2017, 144, 252-262. Quartile (2017): Q1, Analytical Chemistry/Pharmaceutical Science (Scimago). IF (2017): 2,831 (Journal Citation Reports).

P2. *Hydrophilic interaction liquid chromatography-mass spectrometry as a new tool for the characterization of intact semi-synthetic glycoproteins.* Tengattini S., Domínguez-Vega E., Temporini C., Bavaro T., Rinaldi F., Piubelli L., Pollegioni L., Massolini G., Somsen G.W. Analytica Chimica Acta 2017, 981, 94-105. Quartile (2017): Q1, Analytical Chemistry (Scimago). IF (2017): 5,123 (Journal Citation Reports).

- P3. *Enterokinase monolithic bioreactor as an efficient tool for biopharmaceuticals preparation: on-line cleavage of fusion proteins and analytical characterization of released products.* Tengattini S., Rinaldi F., Piubelli L., Kupfer T., Peters B., Bavaro T., Calleri E., Massolini G., Temporini C.
Journal of Pharmaceutical and Biomedical Analysis 2018, 157, 10-19. Quartile (2018): Q1, Analytical Chemistry/Pharmaceutical Science (Scimago). IF (2018): 2,983 (Journal Citation Reports).
- P4. *Rational design, preparation and characterization of recombinant Ag85B variants and their glycoconjugates with T-cell antigenic activity against Mycobacterium tuberculosis.* Rinaldi F., Tengattini S., Piubelli L., Bernardini R., Mangione F., Bavaro T., Paone G., Mattei M., Pollegioni L., Filice G., Temporini C., Terreni M.
RSC Advances 2018, 8, 23171-23180. Quartile (2018): Q1, Chemistry (miscellaneous) (Scimago). IF (2018): 3,049 (Journal Citation Reports).
- P5. *Epitope and affinity determination of recombinant Mycobacterium tuberculosis Ag85B antigen towards anti-Ag85 antibodies using proteolytic affinity-mass spectrometry and biosensor analysis.* Rinaldi F., Lupu L., Rusche H., Kukačka Z., Tengattini S., Bernardini R., Piubelli L., Bavaro T., Maeser S., Pollegioni L., Calleri E., Przybylski M., Temporini C.
Analytical and Bioanalytical Chemistry 2019, 411, 439-448. Quartile (2019): Q1, Analytical Chemistry (Scimago). IF (2019): 3,637 (Journal Citation Reports).
- P6. *Development of an integrated chromatographic system for ω-transaminase-IMER characterization useful for flow-chemistry applications.* Corti M., Rinaldi F., Monti D., Ferrandi E.E., Marrubini G., Temporini C., Tripodo G., Kupfer T., Conti P., Terreni M., Massolini G., Calleri E.
Journal of Pharmaceutical and Biomedical Analysis 2019, 169, 260-268. Quartile (2019): Q1, Analytical Chemistry/Pharmaceutical Science (Scimago). IF (2019): 3,209 (Journal Citation Reports).
- P7. *An enzymatic flow-based preparative route to vidarabine.* Tamborini L., Previtali C., Annunziata F., Bavaro T., Terreni M., Calleri E., Rinaldi F., Pinto A., Speranza G., Ubiali D., Conti P.
Molecules 2020, 25, 1223. Quartile (2020): Q1, Pharmaceutical Science; Q2, Analytical Chemistry (Scimago). IF (2020): 4,412 (Journal Citation Reports).
- P8. *Immobilized enzyme reactors based on nucleoside phosphorylases and 2'-deoxyribosyltransferase for the in-flow synthesis of pharmaceutically relevant nucleoside analogues.* Rinaldi F., Fernández-Lucas J., de la Fuente D., Zheng C., Bavaro T., Peters B., Massolini G., Annunziata F., Conti P., de la Mata I., Terreni M., Calleri E.
Bioresource Technology 2020, 307, 123258. Quartile (2020): Q1, Medicine (miscellaneous) (Scimago). IF (2020): 9,642 (Journal Citation Reports).
- P9. *Discovery of a novel inhibitor of human purine nucleoside phosphorylase by a simple hydrophilic interaction liquid chromatography enzymatic assay.* Rabuffetti M., Rinaldi F., Lo Bianco A., Speranza G., Ubiali D., de Moraes M.C., Rodrigues Pereira da Silva L.C., Massolini G., Calleri E., Lavecchia A.
ChemMedChem 2021, 16, 1325-1334. Quartile (2021): Q1, Pharmacology, Toxicology and Pharmaceutics (miscellaneous) (Scimago). IF (2020): 3,466 (Journal Citation Reports).
- P10. *Monolithic papain-immobilized enzyme reactors for automated structural characterization of monoclonal antibodies.* Rinaldi F., Tengattini S., Brusotti G., Tripodo G., Peters B., Temporini C., Massolini G., Calleri E.
Frontiers in Molecular Biosciences 2021, 8, 765683. Quartile (2021): Q1, Biochemistry (Scimago). IF (2020): 5,246 (Journal Citation Reports).
- P11. *Carbon nanotubes-modified poly-high internal phase emulsions for pharmaceuticals pre-concentration and determination.* Speltini A., Tripodo G., Rinaldi F., Massolini G., Profumo A., Calleri E.
Journal of Pharmaceutical and Biomedical Analysis 2022, 207, 114391. Quartile (2021): Q2, Analytical Chemistry/Pharmaceutical Science (Scimago). IF (2020): 3,935 (Journal Citation Reports).
- P12. *Multi-approach LC-MS methods for the characterization of species-specific attributes of monoclonal antibodies from plants.* Tengattini S., Rinaldi F., Perez-Fernandez V., Fabbri A., Donini M., Marusic C., Sferrazza G., Pierimarchi P., Zonfrillo M., Calleri E., Massolini G., Pisano C., Temporini C.
Journal of Pharmaceutical and Biomedical Analysis 2022, 216, 114796. Quartile (2021): Q2, Analytical Chemistry/Pharmaceutical Science (Scimago). IF (2020): 3,935 (Journal Citation Reports).
- R1. *Advances on size exclusion chromatography and applications on the analysis of protein biopharmaceuticals and protein aggregates: a mini review.* Brusotti G., Calleri E., Colombo R., Massolini G., Rinaldi F., Temporini C.
Chromatographia 2018, 81, 3-23. Quartile (2018): Q3, Analytical Chemistry (Scimago). IF (2018): 1,552 (Journal Citation Reports).
- R2. *Chromatographic tools for plant-derived recombinant antibodies purification and characterization.* Temporini C., Colombo R., Calleri E., Tengattini S., Rinaldi F., Massolini G.
Journal of Pharmaceutical and Biomedical Analysis 2020, 179, 112920. Quartile (2020): Q1, Pharmaceutical Science; Q2, Analytical Chemistry (Scimago). IF (2020): 3,935 (Journal Citation Reports).
- R3. *Analytical settings for in-flow biocatalytic reaction monitoring.* Calleri E., Temporini C., Colombo R., Tengattini S., Rinaldi F., Brusotti G., Furlanetto S., Massolini G.
Trends in Analytical Chemistry 2021, 143, 116348. Quartile (2021): Q1, Analytical Chemistry (Scimago). IF (2020): 12,296 (Journal Citation Reports).