

BIOGRAPHICAL SKETCH

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NAME: Oliviero, Francesca

eRA COMMONS USER NAME (credential, e.g., agency login):

POSITION TITLE: Member of the school board of PhD program in Clinical and Experimental Sciences

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date YYYY	FIELD OF STUDY
University of Padova, Padova, Italy	OTH	1998	Degree in Chemistry and pharmaceutical techniques
University of Padova, Padova, Italy	PHD	2002	PhD in Rheumatology, Molecular mechanisms in crystal-induced arthritis
University of Padova, Padova, Italy	Specialization	2006	Specialization School, Influence of bioactive components in inflammation 70/70 and laude

A. Personal Statement

My research pivot around inflammatory mechanisms underlying rheumatic diseases, with a particular focus on crystal-induced inflammation and its molecular mediators. I have gained expertise in analyzing synovial fluid composition and identifying disease biomarkers across multiple rheumatic conditions. My technical skills include electron microscopy analysis of pathogenic microcrystals, primary culture of synoviocytes from synovial fluid, and characterization of lipoproteins and apolipoproteins in both synovial fluid and serum from affected patients.

I have established both in vitro and in vivo models of acute microcrystal-induced inflammation (monosodium urate and calcium pyrophosphate) to investigate the mechanisms governing onset and resolution of inflammatory episodes. This includes detailed analysis of IL-1 β signaling, crystal phagocytosis, and innate immune receptor involvement.

A distinctive aspect of my research involves exploring natural bioactive compounds—green tea polyphenols, resveratrol, and its precursor polydatin—as modulators of crystal-induced inflammation. I have also investigated hyaluronic acid of different molecular weights in in vitro models of osteoarthritis-associated inflammation to clarify its mechanism of action.

Additional research areas include diagnostic and activity biomarkers in psoriatic arthritis, and functional assays using mononuclear cells from patients with autoinflammatory diseases such as familial Mediterranean fever. My integrated approach aims to define molecular pathways linking crystals, inflammation, and tissue damage while exploring innovative anti-inflammatory strategies of natural origin.

I have recently taken over a project on SERPINB3 (SCCA1), a serine protease inhibitor implicated both in cancer and in disorders of immune regulation. This work aims to develop sensitive recombinant

antibody probes for SERPINB3 detection as a potential biomarker and pharmacological targeting. Integrating this biochemical project with my established expertise in inflammatory mechanisms will help clarify how SERPINB3 contributes to immune-mediated pathology and may identify new theragnostic opportunities.

1. Oliviero F, Scanu A, Zamudio-Cuevas Y, Punzi L, Spinella P. Anti-inflammatory effects of polyphenols in arthritis. **J Sci Food Agric.** 2018;98:1653-1659. [Top-cited article]
2. Oliviero F, Mandell BF. Synovial fluid analysis: Relevance for daily clinical practice. **Best Pract Res Clin Rheumatol.** 2023;37:101848.
3. Oliviero F, Zamudio-Cuevas Y, Belluzzi E, Andretto L, Scanu A, Favero M, et al. Polydatin and resveratrol inhibit the inflammatory process induced by urate and pyrophosphate crystals in THP-1 cells. **Foods.** 2019;8(11):E560.
4. Scanu A, Luisetto R, Oliviero F, Gruaz L, Sfriso P, Burger D, Punzi L. High-density lipoproteins inhibit urate crystal-induced inflammation in mice. **Ann Rheum Dis.** 2015;74:587-594.
5. Oliviero F, Scanu A, Dayer JM, Fiocco U, Sfriso P, Punzi L. How factors involved in the resolution of crystal-induced inflammation target IL-1 β . **Front Pharmacol.** 2017;8:164.

B. Positions, Scientific Appointments, and Honors

Current Position

2024- Associate professor, Dept. of Medicine, Univ. of Padova, Padova

Previous Positions

2016–2024	Assistant Professor, Dept. of Medicine, Univ. of Padova, Padova,
2014–2016	Senior Research Fellow, Dept. of Medicine, Univ. of Padova
2011–2013	Senior Research Fellow, Dept. of Clinical and Experimental Medicine, Univ. of Padova
2003–2009	Research Associate/Collaborator, Dept. of Rheumatology, Univ. of Padova
1999–2002	Ph.D. Student, Doctorate in Experimental and Clinical Rheumatology and Gerontology, Univ. of Padova, Padova
1999–2000	Research Visit, Laboratory of Articular Pathophysiology, Institut de Rhumatologie, Hôpital Lariboisière, Paris, France
1998–1999	Research Fellow, Dept. of Rheumatology, Univ. of Padova, Padova

Honors

2017	National Scientific Habilitation (ASN) in Sector 06/N1 - Health Professions Sciences and Applied Medical Technologies, SSD MED/46 (Laboratory Medicine Technical Sciences)
2017	FFABR Award (Basic Research Activities Funding), Italian Ministry for Education, University and Research
2002	Scientific Award "Artriti," Italian Society of Rheumatology
2002	Scientific Award "Artriti," Aventis Foundation
2018–2019	Recognition for "Top Cited Article," <i>*Journal of The Science of Food and Agriculture*</i>

Editorial Leadership

2001-2011	Managing Editor, "Reumatismo" (Official Journal, Italian Society of Rheumatology)
2011-	Scientific Committee Member, "Reumatismo"
2013-	Editorial Board Member, "Frontiers in Pharmacology" - Inflammation Section
2020-	Associate Editor, "International Journal of Molecular Sciences"
2021-	Associate Editor, "Rheumato"

C. Contributions to Science

Summary of Research Output

- Scopus Publications: 136
- H-index: 34
- Total Citations (Scopus): 3,059
- Publications with Impact Factor: 110 (peer-reviewed)
- Publications without Impact Factor: 14 (peer-reviewed)
- Book Chapters: 9
- Online Scientific Contributions: 14
- Congress Presentations: >120 abstracts

Representative Publications

1. Oliviero F, Scanu A, Zamudio-Cuevas Y, Punzi L, Spinella P. Anti-inflammatory effects of polyphenols in arthritis. *J Sci Food Agric*. 2018;98:1653-1659. [Top-cited article, 2018-2019]
2. Scanu A, Luisetto R, Oliviero F, Gruaz L, Sfriso P, Burger D, Punzi L. High-density lipoproteins inhibit urate crystal-induced inflammation in mice. *Ann Rheum Dis*. 2015;74:587-594.
3. Oliviero F, Scanu A, Dayer JM, Fiocco U, Sfriso P, Punzi L. How factors involved in the resolution of crystal-induced inflammation target IL-1 β . *Front Pharmacol*. 2017;8:164.
4. Raghu H, Lepus CM, Wang Q, Wong HH, Lingampalli N, Oliviero F, Punzi L, et al. CCL2/CCR2, but not CCL5/CCR5, mediates monocyte recruitment, inflammation and cartilage destruction in osteoarthritis. *Ann Rheum Dis*. 2016;72(12). pii: annrheumdis-2016-210426.
5. Oliviero F, Galozzi P, Ramonda R, de Oliveira FL, Schiavon F, Scanu A, Punzi L. Unusual findings in synovial fluid analysis: A review. *Ann Clin Lab Sci*. 2017;47:253-259.
6. Oliviero F, Zamudio-Cuevas Y, Belluzzi E, Andretto L, Scanu A, Favero M, et al. Polydatin and resveratrol inhibit the inflammatory process induced by urate and pyrophosphate crystals in THP-1 cells. *Foods*. 2019;8(11):E560.
7. Punzi L, Scanu A, Spinella P, Galozzi P, Oliviero F. One year in review 2018: gout. *Clin Exp Rheumatol*. 2019;37:1-11.
8. Oliviero F, Mandell BF. Synovial fluid analysis: Relevance for daily clinical practice. *Best Pract Res Clin Rheumatol*. 2023;37:101848.