

CURRICULUM VITAE

Prof. FRANCESCA MARINI

Dept. Pharmaceutical Sciences,
University of Perugia – Via del Liceo, 1 Perugia -06126, Italy
+39 075 5855105 (office)
francesca.marini@unipg.it

Educazione e prime attività di ricerca

- Marzo 1990 **Laurea in Chimica e Tecnologia Farmaceutiche (110/110 e lode)**, Università di Perugia
- Maggio-Ottobre 1990 **Borsa di studio Mediolanum Farmaceutici S.p.A.** "Sintesi di derivati eterociclici di interesse biologico", supervisore Prof. A. Fravolini.
- Novembre 1990-Ottobre 1993 **Studi di dottorato nel gruppo di ricerca del Prof. Tiecco**
Argomenti di ricerca: nuove metodologie per la sintesi di composti eterociclici.
- Sintesi di furani mediante ciclizzazioni di chetoni promosse dal selenio
- Ciclofunzionalizzazioni di alchenil ossime
- Ciclofunzionalizzazioni di acidi idrossammici
- Sintesi di furani, ossazoli e tiazoli attraverso reazioni di eliminazione di selenossidi
- Conversioni promosse dal selenio di beta-dichetoni e beta-chetoesteri
- Giugno 1994 **Ph.D in Scienze Chimiche**
Con una tesi dal titolo: "Ciclizzazioni promosse da composti selenorganici. Nuove sintesi di composti eterociclici."
Supervisore Prof. M. Tiecco
-

Posizione accademica

- Novembre 1994 - Ottobre 2006 **Ricercatore**
Facoltà di Farmacia, Università di Perugia
- Novembre 2006-ad oggi **Professore Associato**
Dipartimento di Scienze Farmaceutiche,
Università di Perugia
-

Attività di insegnamento

- aa 2009-10 – ad oggi **Chimica Organica I** (9 CFU), CdLM in Chimica e Tecnologia Farmaceutiche
- aa 2013-14 – ad oggi **"Chimica Bioorganica"** (6 CFU), CdLM in Biotecnologie Farmaceutiche
- aa 2012-13 **Chimica delle sostanze organiche naturali** (6 CFU), CdLM in Farmacia

aa 2006 – 2009	“Stereochimica ed elementi di sintesi asimmetrica” (modulo di corso integrato, 3 CFU), CdLM in Biotecnologie Farmaceutiche
aa 2001-2009	“Chimica Organica” (10 CFU), CdL triennale in Controllo di qualità nel settore industriale, farmaceutico ed alimentare – CQSIFA
aa 1998-2001	“Chimica dei composti eterociclici” , CdLM in Chimica e Tecnologia Farmaceutiche
aa 1997 – ad oggi	Relatore di tesi di laurea (più di 40) Supervisore di 4 Ph.D. Supervisore di 1 assegnista di ricerca.

Attività di coordinamento

Rappresentante di Ateneo nel consorzio interuniversitario CINMPIS (Consorzio Interuniversitario Nazionale di ricerca in Metodologie e Processi Innovativi di Sintesi)

Marzo 2013-Ottobre 2019.

Vice-coordinatore del corso di Dottorato in Scienze Farmaceutiche.

Attività Scientifica L'attività scientifica della Prof.ssa Marini è principalmente focalizzata sullo sviluppo di nuove metodologie sintetiche promosse o catalizzate da reagenti organici contenenti selenio, anche applicate alla sintesi di molecole di interesse biologico.

Le ricerche riguardano processi domino, processi organocatalizzati asimmetrici, metodologie chemo e stereo selettive e sintesi ecosostenibili. La prof.ssa Marini è coautore di 89 articoli pubblicati su riviste internazionali, 3 capitoli o monografie, e numerose comunicazioni a conferenze e meeting nazionali ed internazionali. È stata membro di progetti di ricerca nazionali e ha collaborato con numerosi gruppi di ricerca nazionali ed internazionali anche all'interno dell' International Network for Multidisciplinary Research on Selenium Sulfur and other Redox Catalysts (SeS Redox and Catalysis). La Prof.ssa Marini ha svolto funzioni di revisore di progetti di ricerca per il MIUR. Svolge funzioni di referee per riviste internazionali fra le quali Organic Letters, Advanced Synthesis & Catalysis, European Journal of Organic Chemistry, ChemCatChem, Organic and Biomolecular Chemistry, RSC Advances, Catalysis Science & Technology, Synthesis, Tetrahedron Lett., Symmetry, Molecules, etc.

Attività editoriale. È Section member della rivista Molecules (Sezione di Chimica Organica) e editor di due Special Issue nello stessa rivista.

Premi e citazioni

(vedi lista delle pubblicazioni)

Citazione in Synfacts "Highlights in Current Synthetic Organic Chemistry" 2011, 12, 1349.

Citazione in Synfacts "Highlights in Current Synthetic Organic Chemistry" 2008, 7, 728.

Citazione in Organic Chemistry Highlights-Organic Chemistry Portal, February, 8, 2010, www.organic-chemistry.org/Highlights.

Tetrahedron Asymmetry: Most Cited Paper 2004-2007.

Indicatori bibliometrici aggiornati Giugno/2021

96 pubblicazioni (WOS); 94 pubblicazioni (SCOPUS)

Total number of citations: 2442 (WOS); Total number of citations: 2453 (SCOPUS)

H-index: 32 (WOS); H-index: 31 (SCOPUS)

Lista delle Pubblicazioni

96) Mangiavacchi, F., Botwina, P., Menichetti, E., Bagnoli, L.; Rosati, O.; Marini, F.; Fonseca, S. F.; Abenante, L.; Alves, D.; Dabrowska, A.; Kula-Pacurar, A.; Ortega-Alarcon, D.; Jimenez-Alesanco, A.; Ceballos-Laita, L.; Vega, S.; Rizzuti, B.; Abian, O.; Lenardão, E. J.; Velazquez-Campoy, A.; Pyrc, K.; Sancineto, L., Santi, C.

Seleno-Functionalization of Quercetin Improves the Non-Covalent Inhibition of Mpro and Its Antiviral Activity in Cells against SARS-CoV-2

International Journal of Molecular Sciences, **2021**, 22(13), 704895.

95) Palomba, M.; Franco Coelho Dias, I.; Rosati, O.; Marini, F.*

Modern Synthetic Strategies with Organoselenium Reagents: A Focus on Vinyl Selenones.

Molecules **2021**, 26, 3148.

94) Palomba, M.; De Monte, E.; Mambrini, A.; Bagnoli, L.; Santi, C.; Marini, F.*

A three component [3 + 2]-cycloaddition/elimination cascade for the synthesis of spirooxindolepyrrolizines.

Org. Biomol.Chem., **2021**, 19, 667–676.

93) Mangiavacchi, F.; Dias, I. F. C.; Di Lorenzo, I.; Grzes, P.; Palomba, M.; Rosati, O.; Bagnoli, L.; Marini, F.; Santi, C.; Lenardao, E. J.; Sancineto, L.

Sweet Selenium: Synthesis and Properties of Selenium-Containing Sugars and Derivatives.

Pharmaceuticals **2020**, 13 (9), 1–28.

92) Mangiavacchi, F.; Crociani, L.; Sancineto, L.; Marini, F.; Santi, C.

Continuous Bioinspired Oxidation of Sulfides.

Molecules **2020**, 25, (11), 2711.

91) Nascimento, V.; Cordeiro, P. S.; Arca, M.; Marini, F.; Sancineto, L.; Braga, A. L.; Lippolis, V.; Iwaoka, M.; Santi, C.

Fast and Easy Conversion Of orthoamidoaryldiselenides into the Corresponding Ebselen-like Derivatives Driven by Theoretical Investigations.

New Journal of Chemistry **2020**, 44 (22), 9444–9451.

90) M. Palomba, F. Mangiavacchi, F. Marini*

Recent advances in selenium promoted or catalyzed electrophilic aminations of alkenes and alkynes

Arkivoc **2019**, part ii, 114-143.

89) M. Palomba, E. Scarcella, L. Sancineto, L. Bagnoli, C. Santi, F. Marini*.

Synthesis of Spirooxindole Oxetanes Through a Domino Reaction of 3-Hydroxyoxindoles and Phenyl Vinyl Selenone.

Eur. J. Org. Chem., **2019**, 31-32, Special Issue, 5396-5401.

88) V. Mimini, F. Ianni, F. Marini, H. Hettegger, R. Sardella, W. Lindner,

Electrostatic attraction-repulsion model with Cinchona alkaloid-based zwitterionic chiral stationary phases exemplified for zwitterionic analytes.

Analytica Chimica Acta, 1078, **2019**, 212-220.

87) M. Palomba, L. Sancineto, F. Marini, C. Santi, L. Bagnoli

A domino approach to pyrazino- indoles and pyrroles using vinyl selenones.

Tetrahedron, **2018**, 74, 7156-7163, doi.org/10.1016/j.tet.2018.10.044.

86) M. Palomba, F. Trappetti, L. Bagnoli, C. Santi, F. Marini*.

Oxone mediated oxidation of vinyl selenides in water.

- Eur. J. Org. Chem.*, **2018**, 3914-3919..
- 85) Mangiavacchi, Francesca; Mollari, Leonardo; Bagnoli, Luana, Francesca Marini, Claudio Santi
Condensation of 2-aminomethylaniline with aldehydes and ketones for the fast one-pot synthesis of a library of 1,2,3,4-tetrahydroquinazolines under flow conditions
Chem. Heterocycl. Compd., **2018**, *54*, 478-481.
- 84) L. Sancineto, F. Mangiavacchi, C. Tidei, L. Bagnoli, F. Marini, A. Gioiello, J. Scianowski, C. Santi
Selenium-Catalyzed Oxacyclization of Alkenoic Acids and Alkenols
Asian J. Org. Chem. **2017**, *6*, 988 -992.
- 83) G. Mazzeo, G. Longhi, S. Abbate, M. Palomba, L. Bagnoli, F. Marini, C. Santi, J.L. Han, V.A. Soloshonok, E. Di Crescenzo, R. Ruzziconi
Solvent-free, uncatalyzed asymmetric "ene" reactions of N-tert-butylsulfinyl-3,3,3-trifluoroacetaldimines: a general approach to enantiomerically pure α -(trifluoromethyl) tryptamines
Org. Biomol. Chem. **2017**, *15*, 3930-3937.
- 82) E. J. Lenardão,, E. L. Borges , G. Stach, L. K. Soares , D. Alves, R. F. Schumacher, L. Bagnoli, F. Marini, G. Perin
Glycerol as Precursor of Organoselanyl and Organotellanyl Alkynes
Molecules **2017**, *22*(3), 391;
- 81) B. Monti, C. Santi, L. Bagnoli, F. Marini, L. Sancineto
Zinc Chalcogenolates As Green Reagents
Curr. Green Chem., **2017**, *3*, 68 - 75 (Thematic Issue: Organochalcogens in Green Chemistry).
- 80) C. Tomassini, F. Di Sarra, B. Monti, L. Sancineto, L. Bagnoli, F. Marini, C. Santi
Kinetic resolution of 2-carbomethoxy-3-alkenols through a stereoselective cyclofunctionalization promoted by an enantiomerically pure electrophilic selenium reagent
Arkivoc, **2017**, published on line Sep 29 2016, 303-312.
- 79) G. Perin, A. M. Barcellos, T. J. Peglow, P. C. Nobre, R. Cargnelutti, E. J. Lenardao, F. Marini, C. Santi
Tellurium-promoted stereoselective hydrodebromination of 1,1-dibromoalkenes: synthesis of (E)-bromoalkenes
RSC Adv. **2016**, *6*, 103657-103661.
- 78) M. Palomba, E. Vinti, F. Marini, C. Santi, L. Bagnoli
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Tetrahedron, **2016**, *72*, 7059-7064.
- 77) G. Bellino, M. Scisciani, J. P. Vargas, L. Sancineto, L. Bagnoli, F. Marini, D. S. Ludtke, E. J. Lenardao, C. Santi
Reaction of Acyl Chlorides with In Situ Formed Zinc Selenolates: Synthesis of Selenoesters versus Ring-Opening Reaction of Tetrahydrofuran
Journal of chemistry, **2016**, DOI: 10.1155/2016/284914
- 76) M. Palomba, L. Rossi, L. Sancineto, E. Tramontano, A. Corona, L. Bagnoli, C. Santi, C. Pannecouque, O. Tabarrini, F. Marini*
A New Vinyl Selenone-Based Domino Approach to Spirocyclopropyl Oxindoles Endowed with Anti-HIV RT Activity
Organic & Biomolecular Chemistry, **2016**, *14*, 2015-2024.
- 75) L. Sancineto, C. Tidei, L. Bagnoli, F. Marini, V. Lippolis, M. Arca, E. J. Lenardão, C. Santi
Synthesis of Thiol Esters Using PhSZnBr as Sulfenylating Agent: A DFT-Guided Optimization of Reaction Conditions
Eur. J. Org. Chem., **2016**, 2999-3005
- 74) L. Sancineto, M. Palomba, L. Bagnoli, F. Marini, C. Santi
Advances in Electrophilic Organochalcogen Reagents
Curr. Org. Chem. **2016**, *20*, 122-135.
- 73) M. Palomba, L. Bagnoli, F. Marini, C. Santi, L. Sancineto
Recent Advances in the Chemistry of Vinyl Chalcogenides
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- 72) L. Sancineto, A. Mariotti, L. Bagnoli, F. Marini, J. Desantis, N. Iraci, C. Santi, C. Pannecouque, O. Tabarrini
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- 71) L. Sancineto, C. Tidei, L. Bagnoli, F. Marini, E. J Lenardão, C. Santi
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Molecules, **2015**, 20 (6), 10496-10510.
- 70) C. Tidei, L. Sancineto, L. Bagnoli, B. Battistelli, F. Marini, C. Santi
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Eur. J. Org. Chem., **2014**, 5968-5975.
- 69) R. Sardella, F. Ianni, A. Lisanti, S. Scorzoni, F. Marini, S. Sternativo, B. Natalini
Direct Chromatographic Enantioresolution of Fully Constrained β -Amino Acids: Exploring the Use of High-molecular Weight Chiral Selectors
Amino Acids **2014**, 46, 1235-1242
- 68) S. Sternativo, B. Battistelli, L. Bagnoli, C. Santi, L. Testaferri, F. Marini*
Synthesis of γ -Lactams via a Domino Michael Addition/Cyclization Reaction of Vinyl Selenone with Substituted Amides
Tetrahedron Lett. **2013**, 54, 6755-6757.
- 67) S. Propersi, C. Tidei, L. Bagnoli, F. Marini, L. Testaferri, C. Santi
On Water Thiolysis of Epoxides Promoted by PhSZnBr
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- 66) L. Bagnoli, S. Casini, F. Marini, C. Santi, L. Testaferri
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Tetrahedron **2013**, 69, 481-486
- 65) F. Marini,* S. Sternativo
Organocatalytic Asymmetric Synthesis and Use of Organoselenium Compounds
Synlett. **2013**, 24, 11-19 (invited Account).
- 64) S. Sternativo, O. Walczak, B. Battistelli, L. Testaferri, F. Marini*
Organocatalytic Michael addition of indanone carboxylates to vinyl selenone for the asymmetric synthesis of polycyclic pyrrolidines
Tetrahedron **2012**, 68, 10536-10541. (invited article).
- 63) S. Sternativo, A. Calandriello, F. Costantino, L. Testaferri, M. Tiecco, F. Marini*
A Highly Enantioselective One-pot Synthesis of Spirolactones by an Organocatalyzed Michael Addition/Cyclization Sequence.
Angewandte Chemie, **2011**, 12, 9554, *Angew. Chem. Int. Ed.* **2011**, 50, 9382-9385.
Citato su Synfacts "Highlights in Current Synthetic Organic Chemistry" 2011, 12, 1349.
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Asymmetric Synthesis of α -Alkyl α -Seleno Carbonyl Compounds Catalyzed by Bifunctional Organocatalysts.
Org. Lett. **2011**, 13, 3052-3055.
- 61) S. Sternativo, F. Marini,* F. Del Verme, A. Calandriello, L. Testaferri, M. Tiecco
One-pot synthesis of aziridines from vinyl selenones and variously functionalized primary amines
Tetrahedron **2010**, 66, 6851-6857.
- 60) F. Marini,* S. Sternativo, F. Del Verme, L. Testaferri, M. Tiecco
A New Stereoselective Synthesis of Cyclopropanes Containing Quaternary Stereocentres via Organocatalytic Michael Addition to Vinyl Selenones.
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- 59) O. A. Attanasi, L. De Crescentini, F. Mantellini, F. Marini, S. Nicolini, S. Sternativo, M. Tiecco.
Synthesis of Selenium-Substituted Pyrroles and Pyrazol-3-ones.
Synlett. **2009**, 1118-1122.
- 58) F. Marini,* S. Sternativo, F. Del Verme, L. Testaferri, M. Tiecco
Enantioselective Organocatalytic Michael Addition of α -Substituted Cyanoacetates to α,β -Unsaturated Selenones.
Adv. Synth. Catal. **2009**, 351,103-106.
Organic Chemistry Highlights February, 8, 2010.
- 57) M. Tiecco,* L. Testaferri, F. Marini,* S. Sternativo, F. Del Verme, C. Santi, L. Bagnoli, A. Temperini
Synthesis of Enantiomerically Enriched β -Hydroxy selenides by Catalytic Asymmetric Ring

Opening of *meso*-Epoxides with (Phenylseleno)silanes
Tetrahedron **2008**, *64*, 3337-3342.

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- 56) M. Tiecco, L. Testaferrri, L. Bagnoli, C. Scarponi, A. Temperini, F. Marini, C. Santi
Selenium Promoted Synthesis of Enantiopure Pyrrolidines Starting from Chiral Aminoalcohols
Tetrahedron Asymmetry, **2007**, *18*, 2758-2767.
- 55) M. Tiecco, L. Testaferrri, C. Santi, C. Tomassini, S. Santoro, F. Marini, L. Bagnoli, A. Temperini.
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Arylsulfonamides
Org. Biomol. Chem., **2007** *5*, 3510-3519.
- 53) M. Tiecco; A. Carlone, S. Sternativo, F. Marini,* G. Bartoli, P. Melchiorre*
Organocatalytic Asymmetric α -Selenenylation of Aldehydes.
Angew. Chem. Int. Ed. **2007**, *42*, 6882-6885.
- 52) M. Tiecco, L. Testaferrri, A. Temperini, R. Terlizzi, L. Bagnoli, F. Marini, C. Santi
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Arkivoc, **2006**, 186-206.
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Tomassini
Asymmetric Syntheses Promoted by Organoselenium Reagents
Phosphorus, Sulphur and Silicon, **2005**, *180*, 729-740.
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Santi
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nitrobenzenesulfonyl chloride
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 δ -Oxo- α -Seleno Esters and Their Facile Transformations.
Eur. J. Org. Chem., **2005**, 543-551.
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Short Synthesis of (R)- and (S)-4-Amino-3-Hydroxybutyric Acid (GABOB).
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Synthesis of Enantiomerically Pure Substituted Tetrahydrofurans from Epoxides and Phenylselenium Reagents.
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Selenium-promoted Synthesis of Enantiomerically Pure Substituted Morpholines Starting from Alkenes and Chiral Aminoalcohols.
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Tetrahedron: Asymmetry **2002**, *13*, 429-435.
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