

## CURRICULUM VITAE

### Prof. FRANCESCA MARINI

Dept. Pharmaceutical Sciences,  
University of Perugia – Via del Liceo, 1 Perugia -06126, Italy  
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#### Education and early research activity

- March 1990 **Master degree (summa cum laude) in Pharmaceutical Chemistry and Technology**, University of Perugia
- May-October 1990 **Fellowship Mediolanum Farmaceutici S.p.A.** Research topic: "Synthesis of Heterocyclic Derivatives of Biological Interest", supervisor Prof. A. Fravolini.
- November 1990-October 1993 **Doctoral studies in the Prof. Tiecco's research group**  
Research topics: new synthetic methodologies for the synthesis of heterocyclic compounds.  
-Synthesis of furans via selenium promoted cyclizations of ketones  
- Cyclofunctionalizations of alkenyl oximes  
- Cyclofunctionalizations of hydroxamic acids  
- Synthesis of furans, oxazoles and thiazoles via elimination reactions of terminal beta-oxy selenoxides  
- Selenium-promoted conversion of beta-diketones and beta-ketoesters
- June 1994 **Ph.D degree in Chemical Sciences**  
with a Doctoral Thesis titled: "Cyclization reactions promoted by organoselenium compounds. New syntheses of heterocyclic compounds."  
Supervisor Prof. M. Tiecco
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#### Position in Academy

- November 1994 - October/2006 **Assistant Professor**  
Faculty of Pharmacy, University of Perugia
- November 2006-present **Associate Professor**  
Department of Pharmaceutical Science,  
University of Perugia
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#### Teaching and training activities

- 2009 - present **Organic Chemistry I** (9 CFU), Master degree in Pharmaceutical Chemistry and Technology
- 2013 - present **"Bioorganic Chemistry"** (6 CFU), Master degree in Pharmaceutical Biotechnologies

2012-13	<b>Organic Chemistry of Natural Compounds</b> (6 CFU), Master degree in Pharmacy
2006 – 2009	<b>“Stereochemistry and Fundamentals of Asymmetric Synthesis”</b> (3 CFU), Master degree in Pharmaceutical Biotechnology
2001-2009	<b>“Organic Chemistry”</b> (10 CFU), bachelor degree in Quality Control – CQSIFA
1998-2001	<b>“Heterocyclic Chemistry”</b> , Master degree in Pharmaceutical Chemistry and Technology
1994-2001	Teaching assistant for “Organic Chemistry 1” “Organic Chemistry 2” and “Physical Methods for Organic Chemistry”, Master degree in Pharmaceutical Chemistry and Technology
1997 - present	Advisor/co-advisor for experimental diploma thesis work (more than 40) Supervisor of 4 Ph.D students Supervisor of 1 post-doc researcher.

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### Coordination Activity

Delegate Member of the board of Interuniversity Consortium CINMPIS (National Interuniversity Consortium for Innovative Methodologies and Processes of Synthesis) (Marzo 2013-Ottobre 2019);  
Vice-coordinator of the PhD Program in Pharmaceutical Sciences;

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**Scientific Activity** The scientific interest of Prof. Marini is mainly focused on the development of new synthetic methodologies promoted or catalyzed by organoselenium reagents and their applications to the synthesis of molecules of biological significance. Her research activities concern domino reactions, asymmetric organocatalysis, chemo and stereoselective methodologies and eco-sustainable syntheses. Prof. Marini is co-author of 89 scientific articles published in International Journals, 3 chapters and monographies, and several communications at national and international congresses and meetings. She has been member of national research projects and has linked collaborations with several national and international research groups, also in the framework of the International Network for Multidisciplinary Research on Selenium Sulfur and other Redox Catalysts (SeS Redox and Catalysis).

Prof. Marini has been application reviewer for MIUR-Italian Ministry of University and Research. She serves as reviewer for several international scientific journals such as 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.

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**Editorial activity** She is section board member of Molecules (section Organic Chemistry) and Guest editor of two Special Issues in the same journal.

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### Awards and citations

Citation in Synfacts “Highlights in Current Synthetic Organic Chemistry” 2011, 12, 1349.

Citation in Synfacts “Highlights in Current Synthetic Organic

Chemistry" 2008, 7, 728.

Citation in Organic Chemistry Highlights-Organic Chemistry Portal, February, 8, 2010, [www.organic-chemistry.org/Highlights](http://www.organic-chemistry.org/Highlights).

Tetrahedron Asymmetry: Most Cited Paper 2004-2007.  
(see list of publications)

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## BIBLIOMETRIC INDICATORS at June/2021

96 publications (WOS); 94 publications (SCOPUS)

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

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

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## List of publications

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  $\alpha$ -(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 Synthesis of oxazino[4,3-a]indoles by domino addition-cyclization reactions of (1H-indol-2-yl)methanols and vinyl selenones in the presence of 18-crown-6  
*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  
*Phosphorus Sulfur Silicon & rel. el.* **2016**, 191, Issue 2, 235-244.
- 72) L. Sancineto, A. Mariotti, L. Bagnoli, F. Marini, J. Desantis, N. Iraci, C. Santi, C. Pannecoque, O. Tabarrini  
Design and Synthesis of DiselenoBisBenzamides (DISEBAs) as Nucleocapsid Protein 7 (NCp7) Inhibitors with anti-HIV Activity  
*J. Med. Chem.*, **2015**, 58, 9601-9614.
- 71) L. Sancineto, C. Tidei, L. Bagnoli, F. Marini, E. J Lenardão, C. Santi  
Selenium Catalyzed Oxidation of Aldehydes: Green Synthesis of Carboxylic Acids and Esters  
*Molecules*, **2015**, 20 (6), 10496-10510.
- 70) C. Tidei, L. Sancineto, L. Bagnoli, B. Battistelli, F. Marini, C. Santi  
A Recyclable Biphasic System for Stereoselective and Easily Handled Hydrochalcogenations  
*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  $\beta$ -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  $\gamma$ -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 Thiolytic of Epoxides Promoted by PhSZnBr  
*Journal of Sulfur Chemistry*, **2013**, 34, 671-676.
- 66) L. Bagnoli, S. Casini, F. Marini, C. Santi, L. Testaferri  
Vinyl selenones: annulation agents for the synthesis of six-membered benzo-1,4-heterocyclic compounds.  
*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.**
- 62) V. Marcos, J. Aleman,\* J. L. Garcia Ruano, F. Marini,\* M. Tiecco  
Asymmetric Synthesis of  $\alpha$ -Alkyl  $\alpha$ -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.  
*Adv. Synth. Catal.* **2009**, 351, 1801-1806.
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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  $\alpha$ -Substituted Cyanoacetates to  $\alpha,\beta$ -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  $\beta$ -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. Testaferri, 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. Testaferri, C. Santi, C. Tomassini, S. Santoro, F. Marini, L. Bagnoli, A. Temperini.  
Synthesis of Enantiomerically Pure  $\beta$ -Azidoselenides Starting from Natural Terpenes.  
*Tetrahedron*, **2007** 12373-12378.
- 54) M. Tiecco, L. Testaferri, A. Temperini, R. Terlizzi, L. Bagnoli, F. Marini, C. Santi.  
Stereocontrolled Synthesis of Substituted N-Arenesulfonyl Azetidines from  $\gamma$ -(Phenylseleno)alkyl Arylsulfonamides  
*Org. Biomol. Chem.*, **2007** 5, 3510-3519.
- 53) M. Tiecco; A. Carlone, S. Sternativo, F. Marini,\* G. Bartoli, P. Melchiorre\*  
Organocatalytic Asymmetric  $\alpha$ -Selenenylation of Aldehydes.  
*Angew. Chem. Int. Ed.* **2007**, 42, 6882-6885.
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*Tetrahedron Lett.* **2007**, 48, 4343-4345.
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*Tetrahedron*, **2007** 63, 5482-5489.
- 50) M. Tiecco, L. Testaferri, L. Bagnoli, C. Scarponi, A. Temperini, F. Marini, C. Santi  
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*Tetrahedron: Asymmetry*, 17, **2006**, 2768-2774.
- 49) M. Tiecco, L. Testaferri, C. Santi, C. Tomassini, S. Santoro, F. Marini, L. Bagnoli, A. Temperini  
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*Eur. J. Org. Chem.*, **2006**, 4867-4873.
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*Synlett*, **2006**, 587-590.
- 47) M. Tiecco, L. Testaferri, L. Bagnoli, F. Marini, C. Santi, A. Temperini, C. Scarponi, S. Sternativo R. Terlizzi and C. Tomassini  
Enantioselective Synthesis of Heterocyclic Compounds Mediated by Organoselenium Reagents.  
*Arkivoc*, **2006**, 186-206.
- 46) C. Santi, M. Tiecco, L. Testaferri, C. Tomassini, F. Marini, L. Bagnoli, A. Temperini  
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*Phosphorus, Sulphur and Silicon*, **2005**, 180, 1071-1075.
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Asymmetric Syntheses Promoted by Organoselenium Reagents  
*Phosphorus, Sulphur and Silicon*, **2005**, 180, 729-740.
- 44) M. Tiecco, L. Testaferri, L. Bagnoli, C. Scarponi, V. Purgatorio, A. Temperini, F. Marini, and C. Santi  
Synthesis of enantiomerically pure perhydro furo[2,3-b]furans.  
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Synthesis of selenoxides by oxidation of selenides with superoxide radical anions and 2-nitrobenzenesulfonyl chloride  
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Conjugated Additions of Selenium Containing Enolates to Enones. Enantioselective Synthesis of  $\delta$ -Oxo- $\alpha$ -Seleno Esters and Their Facile Transformations.  
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A Chiral Electrophilic Selenium Reagent to Promote the Kinetic Resolution of Racemic Allylic Alcohols.  
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- 37) M. Tiecco, L. Testaferri, A. Temperini, L. Bagnoli, F. Marini, C. Santi  
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Selenium-promoted Synthesis of Enantiomerically Pure Substituted Morpholines Starting from Alkenes and Chiral Aminoalcohols.  
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- 33) M. Tiecco, L. Testaferri, F. Marini, S. Sternativo, C. Santi, L. Bagnoli, A. Temperini  
Synthesis of Enantiomerically Pure 1,4-Dioxanes from Alkenes Promoted by Organoselenium Reagents.  
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A New Synthesis of  $\alpha$ -Phenylseleno  $\gamma$ - and  $\delta$ -Lactones from Terminal Alkynes.  
*Synlett.* **2003**, 655-658.
- 30) M. Tiecco, L. Testaferri, C. Santi, C. Tomassini, F. Marini, L. Bagnoli, A. Temperini  
Asymmetric Synthesis of Thioamido Selenides. A Simple Synthetic Route to Enantiopure Thiazolines.  
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Preparation of a New Chiral non Racemic Sulfur-Containing Diselenide and Applications in Asymmetric Synthesis.  
*Chem. Eur J.* **2002**, 8, 1118-1124
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