

Dr. Luana Bagnoli

Researcher



Research topics

- 1) **Synthesis of heterocyclic compounds mediated by organoselenium chemistry**
 - a) New domino processes starting from vinyl selenones.
 - b) Synthetic processes for the production and analysis of molecules with biological interest.
 - c) Asymmetric syntheses.
- 2) **Green Chemistry and Catalysis:**
 - a) New organoselenium reagents for reactions in non-conventional medium.
 - b) Bio-inspired oxidations.
 - c) Design of new organoselenium catalysts for homogeneous and heterogeneous applications including flow systems.
 - d) Organocatalysis and Asymmetric catalysis.

Collaborations

Prof. Antonio Luiz Braga (Univ. Federal de Santa Catarina, BS)

Prof. Micho Iwaoka (Univ. Tokai, JP)

Prof. Lay Luigi (Univ. Milano, Dip. di Chimica e ISTM-CNR)

Prof. Eder Lenardao (Univ. Federal de Pelotas BS)

Prof. Iacek Scianowski (Univ. Torun PL)

Prof. Thomas Wirth (Univ. Cardiff, UK)

In the context of “SeS Redox and Catalysis” multidisciplinary network (Univ. Perugia):

Prof. F. Costantino, Prof. F. Galli, Prof. A. Gioiello, Prof. S. Giovagnoli, Prof. M. Moretti, Prof. M. Nocchetti, Prof. M. Pica, Prof. D. Pietrella, Prof. R. Sardella, Prof. O. Tabarrini, Prof. R. Vivani

Publications of the last 5 years (2009-2013)

1) *L. Bagnoli**, *S. Casini*, *F. Marini*, *C. Santi*, *L. Testaferri*

Vinyl selenones: annulation agents for the synthesis of 6-membered benzo-1,4heterocyclic compounds[†]

Tetrahedron 69, 481-486 (2013).

2) *P. Ronchi*, *C. Scarponi*, *M. Salvi*, *S. Fallarini*, *L. Polito*, *E. Caneva*, *L. Bagnoli** and *L. Lay**

Synthesis of a structural Analogue of the Repeating Unit from *Streptococcus pneumoniae* 19F Capsular Polysaccharide Based on the Cross-Methathesis-Selenocyclization Reaction Sequence.[†]

J. Org. Chem. 78, 5172-5183 (2013).

3) *K. Berrettoni, F. Marini, C. Santi, L. Bagnoli**

“An efficient cascade reaction for the synthesis of oxazino[4,3-a]indoles and pyrano[3,4-b]indoles and pyrano[3,4-b]indoles from vinyl selenones”

Proceeding of the 17th International Electronic Conference on Synthetic Organic Chemistry, ECSOC-17, (2013). Editors: Julio A. Seijas e M. Pilar Vazquez Tato. CD-ROM edition, ISBN 978-3-906980-43-0. MDPI, Basel, Switzerland (*electronic*).

4) *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”

Tetrahedro Lett. 54, 6755-6757 (2013).

5) *V. Frullini, S. Sternativo, L. Bagnoli, C. Santi, F. Marini**

“Stereoselective synthesis of cyclopropanes from vinyl selenones via Michael initiated cascade reactions”

Proceeding of the 17th International Electronic Conference on Synthetic Organic Chemistry, ECSOC-17, (2013). Editors: Julio A. Seijas e M. Pilar Vazquez Tato. CD-ROM edition, ISBN 978-3-906980-43-0. MDPI, Basel, Switzerland (*electronic*).

6) *S. Propersi, C. Tidei, L. Bagnoli, F. Marini, L. Testaferri and C. Santi**

“On water” thiolysis of epoxides promoted by PhSZnBr

Journal of Sulfur Chemistry 34, 671-676 (2013).

7) *S. Propersi, C. Tidei, L. Sancineto, L. Bagnoli, F. Marini, C. Santi*

“PhSZn- halides: new green thiolates”

Proceeding of the 17th International Electronic Conference on Synthetic Organic Chemistry, ECSOC-17, (2013). Editors: Julio A. Seijas e M. Pilar Vazquez Tato. CD-ROM edition, ISBN 978-3-906980-43-0. MDPI, Basel, Switzerland (*electronic*).

8) *C. Santi*^a, R. Di Lorenzo^a, C. Tidei^a, L. Bagnoli^a, and T. Wirth^b*

Stereoselective selenium catalyzed dihydroxylation and hydroxymethoxylation of alkenes.[†]

Tetrahedron 68, 10530-10535 (2012).

9) *L. Incipini, E. Rongoni, L. Bagnoli, F. Marini, C. Santi*

“New chiral electrophilic selenium reagents: synthesis and structural investigation”

Proceeding of the 16th International Electronic Conference on Synthetic Organic Chemistry, ECSOC-16, (2012). Editors: Julio A. Seijas e M. Pilar Vazquez Tato. CD-ROM edition, ISBN: 3-906980-26-X. MDPI, Basel, Switzerland (*electronic*).

10) *C. Tidei, V. Saccomandi, L. Bagnoli, F. Marini, C. Santi*

“Green Oxidations of Aldehydes to Carboxylic Acids and Esters”

Proceeding of the 16th International Electronic Conference on Synthetic Organic Chemistry, ECSOC-16, (2012). Editors: Julio A. Seijas e M. Pilar Vazquez Tato. CD-ROM edition, ISBN: 3-906980-26-X. MDPI, Basel, Switzerland (*electronic*).

11) *L. Bagnoli*[†], C. Scarponi, M. G. Rossi, L. Testaferri, M. Tiecco.*

Synthesis of enantiopure 1,4-dioxanes, morpholines and piperazines from the reaction of chiral 1,2-diols, amino alcohols and diamines with vinyl selenones.

Chem. Eur. J. 17, 993-999 (2011).

12) L. Bagnoli*, C. Scarponi, L. Lay, P. Ronchi

“Synthesis of enantiopure pseudo oligosaccharides using selenium”

Proceeding of the 15th International Electronic Conference on Synthetic Organic Chemistry, ECSOC-15, (2011). Editors: Julio A. Seijas e M. Pilar Vazquez Tato. CD-ROM edition, ISBN: 3-906980-25-1. MDPI, Basel, Switzerland (*electronic*).

13) L. Bagnoli *, C. Scarponi , L. Testaferri , M. Tiecco

Preparation of both enantiomers of cyclopropane derivatives from the reaction of vinyl selenones with di (-)-bornyl malonate.

Tetrahedron: Asymmetry, 20, 1506-1514 (2009).

14) L. Bagnoli*, C. Scarponi, L. Testaferri, M. Tiecco

“Synthesis of enantiopure substituted 1,4-dioxanes by Michael initiated ring closure reactions”

Proceeding of the 13th International Electronic Conference on Synthetic Organic Chemistry, ECSOC-13 (2009). Editors: Julio A. Seijas e M. Pilar Vazquez Tato. CD-ROM edition. ISBN: 3-906980-23-5. MDPI, Basel, Switzerland. (*electronic*).

15) L. Bagnoli , S. Cacchi, G. Fabrizi , A. Goggiomani , C. Scarponi, M. Tiecco.

Diastereoselective Synthesis of Hexahydro-3H-pyrrolizin-3-ones through Pd-catalyzed Carboamination.

J. Org. Chem., 75, 2134-2137 (2010).

Communications (oral, poster) of the last 5 years (2009-2013)

1) K. Berettoni, F. Mangiavacchi, F. Marini, C. Santi, L. Bagnoli*

“Synthesis of oxazino [4,3-a]indoles and pyrano[3,4-b]indoles by cascade addition-cyclization reactions of (1*H*-indol-2-yl) methanols and vinyl selenones”

12th International Conference on the Chemistry of Selenium and Tellurium, ICCST-12, July 22-26, 2013. Cardiff, Wales, United Kingdom.

2) L. Sancineto, A. Mariotti, C. Tidei, L. Bagnoli, F. Marini, O. Tabarrini, C. Santi

“Design and synthesis of new biologically active diselenides”

12th International Conference on the Chemistry of Selenium and Tellurium, ICCST-12, July 22-26, 2013, Cardiff, Wales, United Kingdom.

3) C. Tidei, I. Pitotti, L. Bagnoli., F. Marini, L. Testaferri, C. Santi

“Eco-friendly Synthesis of vinyl selenides “

ICCST12– International Conference on the Chemistry of Selenium and Tellurium - July 22-26, 2013, Cardiff, Wales, United Kingdom

4) S. Propersi, L. Ricciardella, C. Tidei, L. Bagnoli, Marini, F.; Testaferri, L.; Santi, C.

“Synthesis of Seleno- and Thio- esters in water and in solvent free conditions”

ICCST12– International Conference on the Chemistry of Selenium and Tellurium - July 22-26, 2013, Cardiff, Wales, United Kingdom

5) B. Battistelli, S. Sternativo, L. Bagnoli, C. Santi, L. Testaferri, F. Marini

“Synthesis of Spirocyclic compounds via Organocatalytic Michael Addition to Vinyl Selenones”

XXXIV Convegno della Divisione di Chimica Organica, Pavia, 10-14 Settembre 2012.

6) C. Santi, C. Tidei, C. Scalera, L. Incipini, F. Marini, L. Bagnoli, L. Testaferri

“Bioinspired catalytic Oxidation Reactions in Water: Not Simply Green Chemistry”
XXXIV Convegno della Divisione di Chimica Organica, Pavia, 10-14 Settembre **2012**.

7) *L. Bagnoli**, *M. G. Rossi*, *L. Testaferri*, *M. Tiecco*

“Sintesi Asimmetrica di Composti Eterociclici Biologicamente Attivi”

XXX Convegno Interregionale delle Sezioni Toscana Umbria Marche Abruzzo della Società Chimica Italiana TUMA, Perugia, 30 Giugno-1 Luglio **2011**.

8) *L. Bagnoli**, *C. Scarponi*, *M. G. Rossi*, *L. Testaferri*, *M. Tiecco*.

“Synthesis of Enantiopure Morpholines and Piperazines from Vinyl Selenones and Chiral β -Heteroatom Amino Compounds ”

SISOC VIII 8th Spanish-Italian Symposium on Organic Chemistry. Padova, Italy July 03-06, **2010**.

9) *L. Bagnoli**, *C. Scarponi*, *M. G. Rossi*, *L. Testaferri*, *M. Tiecco*

“Asymmetric Synthesis of Cyclopropanes and Heterocyclic compounds by vinyl Selenones”

1th Electronic Symposium on Selenium Chemistry eSeS-1, Published on line: 10 December **2010** (*electronic*)

10) *C. Scarponi*, *L. Bagnoli*, *L. Testaferri*, *M. Tiecco*

“Enantioenriched cyclopropane derivatives from vinyl selenones and di(-)-bornyl malonate”

XXIII Congresso Nazionale della Società Chimica Italiana, Sorrento, 5-10 luglio, **2009**.

11) *L. Bagnoli**, *C. Scarponi*, *L. Testaferri*, *M. Tiecco*

“Use of alkyl and vinyl selenones in asymmetric synthesis”

XXIII Congresso Nazionale della Società Chimica. Sorrento, 5-10 Luglio, **2009**

Didactic activity (A.A. 2013-2014)

- **Analysis of Drugs I** (M/Z) (6 CFU) for the Master’s Degree of Pharmacy, University of Perugia
- Supplementary teaching activities: **Organic Chemistry I** for the Master’s Degree in Chemistry and Pharmaceutical Technology (CTF) University of Perugia
- Supervisor of 5 diploma work thesis for A.A. 2013-2014.