



**Prof. Andrea Temperini,**  
**Associate Professor of Organic Chemistry**

### **Research Topics**

- 1- New synthetic methodology for the conversion of functional groups
- 2- Synthesis of new organoselenium intermediates and their use in stereospecific cyclization reactions: formation of carbon-oxygen and carbon-nitrogen bonds
- 3- Synthesis of saturated heterocyclic compounds with potential biological activity
- 4- Synthesis of unnatural  $\beta$ - and  $\gamma$ -aminoacids with potential biological activity and their use in the synthesis of oligopeptides
- 5- High-pressure Diels-Alder reactions as ecofriendly tool for the synthesis of biologically active biphenyls

### **Collaboration**

- Dipartimento di Chimica, Biologia e Biotecnologie – Università di Perugia
- Dipartimento di Scienze Chimiche- Università di Messina
- Dipartimento di Chimica Organica- Università di Firenze
- Dipartimento di Farmacia e Scienze della Salute e della Nutrizione- Università di Cosenza
- Sterling S.p.a. (Corciano, PG)

### **Publications 2009-2013**

- 1) Temperini A., Tiecco M., Testaferri L., Terlizzi R.  
Novel stereoselective synthesis of (*R*)-3-aminotetradecanoic acid (Iturinic acid).  
*Lett. Org. Chem.* **2009**, 6, 22-24.
- 2) Temperini A., Terlizzi R., Testaferri L., Tiecco M.  
Stereospecific synthesis of  $\beta^3$ -amino acid derivatives from propargylic alcohols: efficient solution-phase synthesis of oligopeptides without coupling agents.

*Chem. Eur. J.* **2009**, 15, 7883-7895. Questo lavoro è stato classificato come VIP (Very Important Paper).

- 3) Temperini A., Terlizzi R., Testaferri L., Tiecco M.  
2-(Phenylseleno)-1,4-dioxane as a convenient reagent for the selective protection of alcohols as 1,4-dioxan-2-yl ethers.  
*Synlett*, **2009**, 2429-2432.
- 4) Temperini A., Terlizzi R., Testaferri L., Tiecco M.  
Additive-free chemoselective acylation of amines.  
*Synth. Commun.* **2010**, 40, 295-302.
- 5) Temperini A., Capperucci A., Degl'Innocenti A., Terlizzi R., Tiecco M.  
A reasonably stereospecific multistep conversion of Boc-protected  $\alpha$ -amino acids to Phth-protected  $\beta^3$ -amino acids.  
*Tetrahedron Lett.*, **2010**, 51, 4121-4124.
- 6) Temperini A., Annesi D., Testaferri L., Tiecco M.  
A simple acylation of thiols with anhydrides  
*Tetrahedron Lett.*, **2010**, 51, 5368-5371.
- 7) Aversa M. C., Barattucci A., Bonaccorsi P., Temperini A.  
Regio- and Stereo-controlled Synthesis of (*Z*)- $\alpha$ -(Phenylseleno)-Sulfinyl and -Sulfonyl Alkenes, via Sulfenic acids, and Study of their Reactivity  
*Eur. J. Org. Chem.*, **2011**, 5668-5673.
- 8) Temperini A., Annesi D., Testaferri L., Tiecco M.  
MON-, MEM- and SEM-phenyl selenides as reagents for the protection of alcohols as alkoxyethyl ethers  
*Tetrahedron Lett.*, **2011**, 52, 3179-3182.
- 9) Temperini A., Capperucci A., Degl'Innocenti A., Terlizzi R., Tiecco M.  
Stereoselective Synthesis of  $\beta^3$ -Amino Acids and  $\beta$ -Oligopeptides by Organoselenium Intermediates.  
*Phosphorus, Sulphur and Silicon*, **2011**, 186, 1137-1143.
- 10) Temperini A., Minuti L.  
N-(Phenylselenomethyl)phthalimide as new reagent for mild protection of alcohols as Pim-ethers  
*Tetrahedron Lett.*, **2012**, 53, 2709-2711.
- 11) Minuti L., Temperini A., Ballerini E.  
High-Pressure-Promoted Diels–Alder Approach to Biaryls: Application to the Synthesis of the Cannabinols Family  
*J. Org. Chem.*, **2012**, 77, 7923-7931.
- 12) Minuti L., Barattucci A., Bonaccorsi P. M., Di Gioia M. L., Leggio A., Siciliano C., Temperini A.  
Intramolecular Displacement of Phenylselenone by a Hydroxy Group: Stereoselective Synthesis of 2-Substituted Tetrahydrofurans  
*Org. Lett.*, **2013**, 15, 3906-3909.

- 13) Bonaccorsi P. M., Di Gioia M. L., Leggio A., Minuti L., Papalia T., Siciliano C., Temperini A., Barattucci A.  
Synthesis of Enantiopure Sugar-decorated Six-armed Triptycene derivatives  
*Beilstein J. Org. Chem.*, **2013**, *9*, 2410-2416.

### Communications to congress 2009-2013

- 1) A. Temperini, R. Terlizzi, L. Testaferri, M. Tiecco.  
Stereospecific synthesis of  $\beta^3$ -amino acid derivatives from propargylic alcohols: efficient solution-phase synthesis of oligopeptides without coupling agents (Poster)  
9<sup>th</sup> Deutsches Peptidsymposium. Gottingen- Germany, March 11-14, 2009.
- 2) Temperini A., Capperucci A., Degl'Innocenti A., Terlizzi R., Tiecco M.  
Stereoselective Synthesis of  $\beta^3$ -Amino Acids and  $\beta$ -Oligopeptides Promoted by Organoselenium Intermediates Invited Lecture  
24<sup>th</sup> International Symposium on the Chemistry of Sulfur ISOCS-24. Florence- Italy, July 25-30. 2010.
- 3) A. Temperini, D. Annesi, L. Testaferri, M. Tiecco.  
O, Se Acetals as Reagents for the Protection of Alcohols (Poster)  
XXIV Congresso Nazionale della Società Chimica Italiana  
Lecce, 11-16 Settembre 2011.
- 4) Messina F., Marcotullio M. C., Rosati O., Temperini A., Loizzo M. R., Tundis R., Menichini F.  
Phytochemical analysis and anticancer activity evaluation of *Euphrasia Pectinata* Ten (Oral communication)  
XXI Italo-LatinAmerican Congress of Ethnomedicine.  
Salerno, 25-29 Settembre 2012
- 5) Aversa M. C., Barattucci A., Di Gioia M. L., Leggio A., Minuti L., Papalia T., Siciliano C., Temperini A., Bonaccorsi P. M.  
New Planar and Centrally Chiral Sulfinylcyclophanes (Poster)  
XXXV Convegno Nazionale della Divisione di Chimica Organica  
Sassari, 9-13 Settembre 2013
- 6) Minuti L., Pesaresi M., Temperini A.  
New synthetic approaches to *o*-substituted 4-Aryl[2,2]paracyclophanes Based on High-Pressure-Promoted Diels–Alder Reaction ( Oral communication)  
XV Convegno Nazionale sulle Reazioni Pericicliche e Sintesi di Etero e Carbocicli  
Perugia, 28-29 Giugno 2013

### Teaching 2013-2014

Organic Chemistry 2 course. Master's degree in Pharmaceutical chemistry and technology.