Dr. Beatrice Lace

Doctoral School of Sciences and Innovative Technologies

Ph.D. Program in Biology and Applied Biotechnologies

Department of Chemistry, University of Turin

Via Pietro Giuria 7, I-10125 Torino, ITALY

Tel: +39 011 670 7027

Mobile phone number: +39 3403318757

Email: beatrice.lace@unito.it

EDUCATION

Ph.D. Fellow in Biology and Applied Biotechnologies: expected February 2015.

Department of Chemistry, University of Turin, Italy

Project: Strigolactone analogues as molecular probes in chasing the receptor/s: design and synthesis of fluorescent labeled molecules

Supervisor: Prof. Cristina Prandi

Master's Degree (IInd level) in Plant Biology: graduation with 110/110, April 2010.

Department of Plant Biology, University of Turin, Italy

Dissertation: 2-DE gel electrophoresis and mass spectrometry techniques applied to the study of protein expressed during the mycorrhizal symbiosis of Orchids.

Supervisor: Prof. Silvia Perotto

Stage: 6 weeks at Institut National de Recherche Agronomique (INRA) in Sophia Antipolis, Antibes, France with Prof. Nicolas Pauly.

Bachelor's Degree (Ist level) in Biological Sciences: graduation with 110/110 *cum laude*, March 2006

University of Turin, Italy

Dissertation: 2-DE gel electrophoresis applied to the study of fungal proteome in presence/absence of heavy metals contamination.

High School Diploma in Biology: 100/100, June 2002

Liceo Scientifico C. Cattaneo, Turin, Italy

RESEARCH EXPERIENCE

PhD student with Prof. Cristina Prandi, Department of Chemistry, University of Turin, Italy.

January 2012 - expected February 2015.

Project: Strigolactone analogues as molecular probes in chasing the receptor/s: design and synthesis of fluorescent labeled molecules

- Performing multi-step synthesis of targets or intermediates
- Purification of reaction products by appropriate techniques, e.g., *via* column chromatography and flash column chromatography
- Characterization of compounds/intermediates using spectral techniques like UV, NMR
- Application of software such as ChemDraw.
- Performing biological activity tests on plants and fungi
- Visualization of BODIPY-functionalized plant hormones with confocal microscope in living cells of plants and fungi.

Short-term research contract with Prof. Paola Bonfante, Department of Plant Biology, University of Turin, Italy.

June 2010 - September 2011

Project: *In vivo* imaging of the tripartite interaction between *T. atroviride*, *M. truncatula* and its mychorrizal symbiont *G. gigantea*.

- Electrocompetence of *A. rhizogenes* cells
- Electroporation-mediated transformation of *A. rhizogenes*
- *A. rhizogenes*-mediated transformation of *D. carota* and *M. truncatula*
- Manteinance of GFP- tagged ROCs collections
- Harvesting and sterilization of fungal spores
- Set-up of *in vitro* mycorrhizal cultures

- *In vivo* cellular analysis with confocal microscope (Leica TCS-SP2)
- Performing FRET technique using a Cameleon calcium reporter to monitor the changes in nuclear Ca^{2+} level of *M. truncatula*
- PCR
- Mini-Prep

Undergraduate student/dissertation project with Prof. Silvia Perotto, Department of Plant Biology, University of Turin, Italy.

June 2009- April 2010

Project: 2-DE gel electrophoresis and mass spectrometry techniques applied to the study of protein expressed during the mycorrhizal symbiosis of Orchids

- Protein extraction, purification and quantification
- 2-DE gel electrophoresis
- 2-DE gel imaging (VersaDoc) and analysis (*PDquest* software)
- Western Blotting
- Tripsin digestion of proteins from 2-DE gels
- LC/MS-MS analysis of proteins (Agilent 6330 Ion Trap LC/MS)
- LC/MS-MS chromatograms filtration (DataAnalysis for 6300 Series Ion Trap LC/MS Version 4.0)
- Performing database analysis (MASCOT MS/MS Ion Search)

COURSES

- Selected for the EMBL Advanced Course on Imaging Techniques, June 24-28 2013, EMBL Meyerhofstraße 1, 69117 Heidelberg, Germany.
- Torino Imaging Open Days, July 10-12 2012, Neuroscience Institute Cavalieri Ottolenghi (NICO), Azienda Ospedaliero-Universitaria San Luigi Gonzaga, Regione Gonzole 10 - 10043 Orbassano, Torino, Italy
- Workshop on Molecular Plant-Microbe Interactions May 4-8 2012, Dpt. of Life Science and Systems Biology, Viale Mattioli 25 - 10125 Torino, Italy.

TEACHING EXPERIENCE

Department of Chemistry, University of Turin, Italy.

January 2012- present

- Organic chemistry lab (advanced organic synthesis)

Department of Plant Biology, University of Turin, Italy.

June 2010- September 2011

- Confocal microscopy lab
- Cellular biology lab

PUBLICATIONS

Prandi, C., Rosso, H., Lace, B., Occhiato, E.G., Oppedisano, A., Tabasso, S., Alberto, G., Blangetti, M. (2013). Strigolactone analogues as molecular probes in chasing the (SLs) receptor/s: design and synthesis of labeled molecules. Molecular Plant, 6, 113-127.

Beatrice Lace, cover image. Molecular Plant, Volume 6 Issue 1 January 2013.

CONFERENCES AND COMMUNICATIONS

"*Trichoderma and Gigaspora*: a cellular analysis of the interaction between a mycotrophic and a mycorrhizal fungus". Delivered at National Meeting of the Mycology Group (Illustrazione dei progetti di ricerca in itenere degli aderenti al Gruppo di Interesse per la Micologia), Turin, February 9, 2012.

Poster communication at International Plant Biology Congress 2012 - Freiburg, Germany. July 29 - august 3, 2012. Authors: Beatrice Lace, Andrea Genre, Sheridan Woo, Matteo Lorito & Paola Bonfante. Poster title: *Trichoderma and Gigaspora*: a cellular analysis of the interaction between a mycotrophic and a mycorrhizal fungus.

AWARDS

Poster Prize at the International Plant Biology Congress 2012 - Freiburg, Germany. July 29 - august 3, 2012.

COMPUTER SKILLS

ChemDraw, PDquest, Excel, PowerPoint, Word, Photoshop, Windows, Mac

FOREIGN LANGUAGES

English: excellent

French: good

Spanish: reading knowledge

REFERENCES

Prof. Cristina Prandi

Dipartimento di Chimica, Università di Torino

via P. Giuria 7 - 10125 Torino

Tel +39 011 670 7643/ Fax +39 011 670 7642

cristina.prandi@unito.it

Prof. Paola Bonfante

Dipartimento di Scienze della Vita e Biologia dei Sistemi, Università di Torino

Viale Mattioli 25 - 10125 Torino

Tel. +39 011 670 5965/ Fax +39 011 670 5962

paola.bonfante@unito.it

p.bonfante@ipp.cnr.it

Dr. Andrea Genre, PhD

Dipartimento di Scienze della Vita e Biologia dei Sistemi, Università di Torino

Laboratorio di Microscopie Avanzate

Viale P.A. Mattioli 25 - 10125 TORINO, Italy

Tel. +39 011 6705971/ Fax +39 011 6705962

andrea.genre@unito.it

Prof. Silvia Perotto

Dipartimento di Scienze della Vita e Biologia dei Sistemi, Università di Torino

Viale P.A. Mattioli 25 - 10125 TORINO, Italy

Tel. +39 011 670 5987/ Fax +39 011 670 5962

silvia.perotto@unito.it