

BETTI CAMILLA

RTD-B (BIO/01), DEP. OF BIOSCIENCES, UNIVERISTY OF MILAN, ITALY

PUBLICATIONS

1. Della Rovere F., Piacentini D., Fattorini L., Girardi N., Bellanima D., Falasca G., Altamura M.M., **Betti C.*** (2022). Brassinosteroids Mitigate Cadmium Effects in Arabidopsis Root System without Any Cooperation with Nitric Oxide. *International Journal of Molecular Sciences*. Section: Molecular Plant Sciences, Special Issue: *Plant Hormones Brassinosteroids and Its Actions in Plants*. 23(2), 825; (<https://doi.org/10.3390/ijms23020825>). ***Corresponding author.**
2. Bellini E., **Betti C.***, Sanità di Toppi L. (2021). Responses to Cadmium in Early-Diverging Streptophytes (Charophytes and Bryophytes): Current views and Potential Applications. *Plants – Special Issue Plant Anatomy and Biochemistry 2021* 10(4):770. (doi: 10.3390/plants10040770). ***Corresponding author.**
3. **Betti C.***, Della Rovere F, Piacentini D, Fattorini L, Falasca G, Altamura M.M. (2021) Jasmonates, Ethylene and Brassinosteroids Control Adventitious and Lateral Rooting as Stress Avoidance Responses to Heavy Metals and Metalloids. *Biomolecules – Special Issue Phytohormones 2020* 11(1):77 (doi: 10.3390/biom11010077). ***Corresponding author.**
4. Sportoletti P, Sorcini D, Guzman AG, Reyes JM, Stella A, Marra A, Sartori S, Brunetti L, Rossi R, Papa BD, Adamo FM, Pianigiani G, **Betti C.**, Scialdone A, Guarente V, Spinozzi G, Tini V, Martelli MP, Goodell MA, Falini B. (2020). Bcor deficiency perturbs erythro-megakaryopoiesis and cooperates with Dnmt3a loss in acute erythroid leukemia onset in mice. *Leukemia* 35, 1949–1963 (doi:10.1038/s41375-020-01075-3).
5. Grinzato A., Kandiah E., Lico C., **Betti C.**, Baschieri S., Zanotti G. (2020). Atomic structure of potato virus X, the prototype of the *Alphaflexviridae* virus family. *Nature Chemical Biology* 16, 564–569 (<https://doi.org/10.1038/s41589-020-0502-4>).
6. Pianigiani G., **Betti C.**, Brunetti L. (2020). Response to: Cytoplasmic dislocation of NPM1 and PU.1 in NPM1-mutated leukemia is obscured by paraformaldehyde fixation. *British Journal of Haematology* 189(3), 578-581 (DOI: 10.1111/bjh.16544).
7. Bellini E.*, Maresca V.*, **Betti C.**, Ruffini Castiglione M., Fontanini D., Capocchi A., Borsò M., Bruno L., Sorbo S., Basile A. and Sanità di Toppi L. (2020). The moss *Leptodictyum riparium* can counteract severe cadmium stress by activation of glutathione transferase and phytochelatin synthase, but slightly by phytochelatin. *International Journal of Molecular Sciences* 21, 1583; (DOI:10.3390/ijms21051583). *co-first authors. IF: 4.556; Citations Scopus: 4; WOS: 3.
8. Pianigiani G.*, **Betti C.***, Bigerna B., Rossi R., Brunetti L. (2019). PU.1 subcellular localization in acute myeloid leukaemia with mutated *NPM1*. *British Journal of Haematology* 188(1): 184-187 (DOI: 10.1111/bjh.16344). *co-first authors.
9. Della Rovere F., Fattorini L., Ronzan M., Falasca G., Altamura M.M.*, **Betti C.*** (2019). Jasmonic acid methyl ester induces xylogenesis and modulates auxin-induced xylary cell identity with NO involvement. *International Journal of Molecular Sciences* 20(18): 4469 (DOI: 10.3390/ijms20184469). ***Corresponding author.**
10. Bellini E, Borsò M, **Betti C**, Bruno L, Andreucci A, Ruffini Castiglione M, Saba A, Sanità di Toppi L (2019). Characterization and quantification of thiol-peptides in Arabidopsis thaliana using combined

dilution and high sensitivity HPLC-ESI-MS-MS. *Phytochemistry* 164: 215-222 (DOI: 10.1016/j.phytochem.2019.05.007).

11. **Betti C.**, Della Rovere F., Ronzan M., Fattorini L. (2019). EIN2 and CO11 control the antagonism between ethylene and jasmonate in adventitious rooting of *Arabidopsis thaliana* thin cell layers. *Plant Cell, Tissue and Organ Culture* 138: 41-51 (DOI: 10.1007/s11240-019-01601-x).
12. Ronzan M., Piacentini D., Fattorini L., Della Rovere F., Caboni E., Eiche E., Ziegler J., Hause B., Riemann M., **Betti C.**, Altamura M. M., Falasca G. (2019). Auxin-jasmonate crosstalk in *Oryza sativa* L. root system formation after cadmium and/or arsenic exposure. *Environmental and Experimental Botany* 165: 59-69 (DOI: 10.1016/j.envexpbot.2019.05.013).
13. Houbaert A., Zhang C., Tiwari M., Wang K., De Marcos Serrano A., Savatin D.V., Urs M.J., Zhiponova M.K., Gudesblat G.E., Vanhoutte I., Eeckhout D., Boeren S., Karimi M., **Betti C.**, Jacobs T., Fenoll C., Mena M., De Vries S., Geert De Jaeger G., Russinova E. (2018). POLAR-guided signalling complex assembly and localization drive asymmetric cell division. *Nature* 563: 574-578 (DOI: 10.1038/s41586-018-0714-x).
14. **Betti C.***, Schymkowitz J., Rousseau F., Russinova E. (2018). Selective knockdowns in maize by sequence-specific protein aggregation. *Methods in Molecular Biology* "MAIZE" 1676:109-127. (DOI: 10.1007/978-1-4939-7315-6_6.). *Corresponding author.
15. Velocchia A., Fattorini L., Della Rovere F., Sofo A., D'Angeli S., **Betti C.**, Falasca G., Altamura M.M. (2016). Ethylene and auxin interaction in the control of adventitious rooting in *Arabidopsis thaliana*. *Journal of Experimental Botany* 67(22):6445-6458. (DOI:10.1093/jxb/erw415).
16. **Betti C.**, Van Houtte I., Coutuer S., De Rycke, R., Xu J., Mishev K., Vuylsteke M., Aesaert S., Rombaut D., Gallardo R., De Smet F., Xu J., Van Lijsebettens M., Van Breusegem F., Inzé D., Rousseau F., Schymkowitz J., Russinova E. (2016). Sequence-specific protein aggregation generates defined protein knockdowns in plants. *Plant Physiology - Breakthrough technologies* 171(2):773-787 (DOI:10.1104/pp.16.00335).
17. Zhiponova M., Vanhoutte I., Boudolf V., **Betti C.**, Dhondt S., Coppens F., Mylle E., Maes S., González-García M., Cano-Delgado A., Inzé D., Beemster G., De Veylder L. and Russinova E. (2013). Brassinosteroid production and signaling differentially control cell division and expansion in the leaf. *New Phytologist* 197: 490-502. (DOI: 10.1111/nph.12036).
18. Gudesblat G., **Betti C.**, Russinova E. (2012). Brassinosteroids tailor stomatal production to different environments. *Trends in Plant Science* 17(12): 685-687. (DOI: 10.1016/j.tplants.2012.09.005).
19. Gudesblat G., Schneider-Pizon J.*, **Betti C.***, Mayerhofer J.*, Vanhoutte I., Boeren S., Zhiponova M., de Vries S., Jonak C., Russinova E. (2012). SPEECHLESS integrates brassinosteroid and stomata signalling pathways. *Nature Cell Biology* 14(5): 548-554. (DOI: 10.1038/ncb2471). *co-second authors.
20. **Betti C.***, Lico C.*, Maffi, D., D'Angeli S., Altamura M.M., Benvenuto E., Faoro F., Baschieri S. (2012). Potato virus X movement in *Nicotiana benthamiana*: new details revealed by chimeric coat protein variants. *Molecular Plant Pathology* 12(2): 198-203 (DOI: 10.1111/J.1364-3703.2011.00739.X). *co-first authors.
21. **Betti C.**, Lico C., Iriti, M., D'Angeli S., Benvenuto E., Baschieri S., Faoro F. (2010). A chimeric *Potato Virus X* encoding a heterologous peptide affects *Nicotiana benthamiana* chloroplast structure. *Plant Biosystems* 144(3): 725-732 (DOI: 10.1080/11263501003755630).

22. Lico C., Mancini C., Italiani P., **Betti C.**, Boraschi D., Benvenuto E., Baschieri S. (2009). Plant-produced potato virus X chimeric particles displaying an influenza virus-derived peptide activate specific CD8+ T cells in mice. *Vaccine* 27(37): 5069-5076 (DOI: 10.1016/j.vaccine.2009.06.045).
23. Reverberi M.*, **Betti C.**, Fabbri A.A., Zjalic S., Spadoni S., Mattei B. and Fanelli C. (2008). A role for oxidative stress in *Citrus limon/Phoma tracheiphila* interaction. *Plant Pathology* 57: 92-102 (DOI: 10.1111/j.1365-3059.2007.01699.x).

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OVERVIEW

- Plant biologist with experience in developmental biology, functional biochemistry, cell and molecular biology, phytoremediation and studies about morpho-anatomical responses to hormones, pathogens and abiotic stresses. Skilled in optical, electron and confocal microscopy of cells, tissues and organs of monocotyledons and dicotyledons plant species.
- Experience in interpreting in a physiological and developmental perspective peptide- and protein-protein interactions both *in planta* (in monocotyledons and dicotyledons) and *in vitro*, by means of biochemical assays and protein localization studies in defined subcellular compartments with advanced fluorescence microscopy techniques. Good knowledge of bioinformatics tools for primary, secondary and tertiary protein structure analyses.
- Expertise in technology transfer projects acquired by working on the validation of the innovative protein interference biotechnology in monocotyledons and model species (PEPT-INS™, protein interference technology; Patent US8669418 B2- Spin Off company: <https://aelintx.com/>); sound knowledge in starting up a Spin-off company.
- Highly motivated team worker with demonstrated ability to lead research projects and small groups of collaborators in multicultural environments. Well-balanced person with optimal skills to deliver results respecting deadlines and expected goals.
- Career goal: discover "hub" proteins and key interactors involved in the regulation of plants' developmental processes in model species and monocotyledon crops.
- Qualification (ASN) as Associate Professor in Botany - SC 05/A1; SSD BIO/01 - art. 16, comma 1, Legge 240/10. Validity: 06/11/2018 - 06/11/2027.

EDUCATION

- **Ph.D.** in Botanical Sciences (SSD BIO/01), "Sapienza" University of Rome, Italy. Evaluation: excellent. 04/02/2009
- **Qualified Biologist**, State examination, "Sapienza" University of Rome, Italy. 01/06/2005
- **M.Sc.** (Lauream) 110/110 with honours (*summa cum laude*) in Biological Sciences, Major in Biotechnology, Dep. of Plant Biology, "Sapienza" University of Rome, Italy. 23/05/2005

POSITIONS

- **RTD-B** (Assistant Professor) Dep. of Biosciences, University of Milan, Milano, Italy 01/10/2021 -

- **Senior postdoc** (ERC-Advanced grant)
Dep. of Medicine, University of Perugia, Perugia, Italy 10/11/2017 - 28/08/2021
- **Postdoc and Senior postdoc**
Brassinosteroids and Plant Growth Group, Plant Systems Biology Department,
Ghent University, VIB (Flanders Institute for Biotechnology), Ghent, Belgium.
17/08/2009 - 31/12/2011
01/02/2012 - 31/07/2013
01/08/2013 - 30/06/2014
15/11/2014 - 15/09/2015
- **Ph.D. in Botanical Sciences (BIO/01)**
Department of Plant Biology (currently Dep. of Environmental Sciences),
University of Rome "Sapienza", Rome, Italy. 01/11/2005 - 04/02/2009
- **Research Assistant**
Department of Plant Biology (currently Dep. of Environmental Sciences),
University of Rome "Sapienza", Rome, Italy. 01/05/2003 - 23/05/2005

MATERNITY LEAVE

21/11/2013 - 30/06/2014
21/06/2016 - 03/10/2016

PARENTAL LEAVE

01/07/2020 - 30/07/2020

TEACHING AND MENTORING EXPERIENCE

- 2020: Adjunct teacher in General Botany laboratory lessons, degree in Biological Sciences, Pisa University; Academic years: 2019/2020 and two lessons for 2020/2021. Topics covered: plant anatomy; histochemistry: hands-on experience on slides preparation and visualization; staining techniques and chemical principles (including immunostaining); imaging: concepts of optical microscopy and basic concepts of fluorescence and electron microscopy; plant tissues and organs anatomy in dicotyledons and monocotyledons, meristems, flowers structure; symbiosis; anatomy and life cycle of liverworts and mosses.
- 2019: Adjunct teacher in General Botany laboratory lessons, degree in Biological Sciences, Pisa University; Academic year: 2018/2019. Topics covered: plant anatomy; histochemistry: hands-on experience on slides preparation and visualization; staining techniques and chemical principles; imaging: concepts of optical microscopy; plant tissues and organs anatomy in dicotyledons and monocotyledons, meristems, flowers structure; symbiosis; anatomy and life cycle of liverworts and mosses.
- 2018: Lecturer "Post Translational Modifications as the key in Brassinosteroids Crosstalk with Stomata Development" Doctoral school in Biosciences, Padua University, 5 October 2018.
- 2015: Coordinator of the practical course: "Assessing the interaction of Brassinosteroids signalling components by BiFC assay" for Bachelor students in Biochemistry and Biotechnology, Gent University.
- 2013-2014: Supervisor and co-promoter of the Master thesis "Targeted protein interference in plastids of plants as a tool to knock-down a starch degrading enzyme" (student: Marieke Lippens); Master of Science in Biochemistry and Biotechnology, Major Plant Biotechnology (MaNaMa), Gent University.

- 2011-2012: Supervisor and co-promoter of the Master thesis “Protein aggregation in plants as a tool to specifically knock-down protein functions” (student: Thao Bui Puong); Interuniversity Program in Molecular Biology (IPMB), Vrij Universiteit, Brussel - Katholiek Universiteit, Leuven.
- 2011: Lecturer in Confocal microscopy course for Bachelor students in Biotechnology and Molecular Biology, Gent University.

PROFESSIONAL MEMBERSHIPS & ACTIVITIES

- Elected Counselor member (minimum 3 years appointment) in the Directory of the Molecular and Cell Biology group of the Italian Botanical Society (S.B.I.) 2020 - 2023
- Italian Botanical Society (S.B.I.) 2018 -
- American Society of Plant Biologists (ASPB) 2012
- The European Plant Science Organization (EPSO) 2009 - 2012

COURSES

- Faculty Development for RTD-B Researchers. University of Milan 28/01/2022.
- Introduzione al Regolamento Generale sulla Protezione dei Dati. University of Milan 14/01/2022.
- University Teaching: Core Skills. International certification of Oxford University Press. 04/01/2022
- Corso di aggiornamento "Covid-19 e lavoro: cosa conoscere" per Lavoratore e Preposto. AiFOS, Milan 12/11/2021
- “Formazione generale dei Lavoratori”. AiFOS, Milan 11/11/2021.
- “The next level of secondary antibodies: Introduction to Nano-Secondaries for immunofluorescence”. Chromotek webinar; 24 June 2020.
- "Step by step: practical actions for research dissemination, communication and exploitation". Kudos webinar; 06 February 2020.
- Training course Beckman-Coulter for Ultracentrifuge Optima, Perugia, Italy; 18 October 2018.
- Workshop and hands-on session: “Imaris: the ideal solution to interactively analyze microscopy images”, Florence, Italy; 13 December 2018.
- Management cycle in “Fundamental skills in Technology Transfer”, UGent, April-May 2013.
- Microscopy training workshop, VIB-UGent; 24-26 February 2010.
- Summer School in “Advanced microscopic techniques as a tool for tissutal and cellular analysis in plant organisms”, Hotel “Oasi di Kufra”, Sabaudia (Latina), Italy; 16-19 October 2006.
- Advanced Bioinformatics School – Biotechnology Foundation, Torino, Ital; 9-10 October 2006.
- Introduction to Bioinformatics School – Biotechnology Foundation, Torino, Italy; 25-26 September 2006.

DETAILED PROFESSIONAL EXPERIENCE

RTD-B researcher – University of Milan (2021 -)

- “Rice Molecular Biology: Interactomic Studies through Proximity Labelling”. Rice is a staple crop and its cultivation is of great economic interest. Flowering is a crucial event in rice life cycle, since it ensures reproductive success and also influences agricultural productivity. Many internal and external factors regulate flowering time, including photoperiod, light composition, temperature and stress conditions. The tight regulation of this process involves the interaction of different proteins, some of which have not yet been characterized. The technologies previously used to identify protein-protein interactions showed some limitations, such as a lower *in vivo* effectiveness. Our laboratory is testing a new technology, called Proximity Labelling, that allows - among other things - the isolation of protein interactors directly from living plant tissues. The implementation of this advanced methodology will involve molecular cloning, rice plants transformation (both transient and stable) and biochemical assays. Different rice varieties will be used, not only to prove the Proximity Labelling approach for the first time in rice, but also to identify novel proteins interacting with known flowering regulators. The project is characterized by a strong biotechnological focus, relevant both for academic and business perspectives.

Post-Doctoral Fellow – University of Perugia (2017 - 2021)

- Based on the biochemical and technology transfer experience previously acquired in maize and Arabidopsis, I got employed in the framework of an ERC-Advanced grant applying cutting-edge protein-protein interactions techniques (in biochemistry, mass-spec, IHC, IF and electron microscopy) to discover new interactors of mutated Nucleophosmin 1 (NPM1) in acute myeloid leukaemia (AML), with the final aim to discover new pharmacological targets. In addition to this project, I continued establishing, maintaining and finalizing research papers and collaborations about plant developmental biology in monocotyledons and Arabidopsis. In particular, I focused on: rhizogenesis and xylem development, also in response to abiotic stress, in *Oryza sativa* and Arabidopsis (Ronzan et al., *Environmental and Experimental Botany*, 2019; Betti et al., *Plant Cell Tissue and Organ Culture* 2019; Della Rovere et al., *International Journal of Molecular Sciences* 2019; Betti et al., *Biomolecules* 2021) and stomata development in Arabidopsis (Houbaert et al., *Nature* 2018). Moreover, I finalized a book chapter about the methodology related to the Protein interference biotechnology in the monocot *Zea mays* (Betti et al., *MAIZE Book - Methods in Molecular Biology* 2018) and collaborated to research papers about plant anatomy and stress resistance mechanisms in early-diverging Streptophytes (Bellini et al., *Phytochemistry* 2019; Bellini et al., *International Journal of Molecular Sciences* 2020) and about the elucidation of plant viral protein's structure (Grinzato et al., *Nature Chemical Biology* 2020).

Post-Doctoral Fellow – Ghent University, VIB (Flanders Institute for Biotechnology) (2009 - 2015)

- Developmental biology project: Biochemical and cell biology studies about the involvement of Brassinosteroids (BRs) in stomata development in Arabidopsis model species. I actively contributed to elucidate the role of the interaction between the BRASSINOSTEROID INSENSITIVE 2 (BIN2) kinase and the stomata-related SPEECHLESS transcription factor (Gudesblat et al., *Nature Cell Biology* 2012; Gudesblat et al., *Trends in Plant Science* 2012). I also helped to unravel the involvement of BRs in controlling cell division and expansion in leaves of Arabidopsis (Zhiponova et al., *New Phytologist* 2013).
- Plant biotechnology project: Validation of the protein aggregation knock-down technology as complementary to known target mutagenesis approaches used to assign gene functions based on mutant phenotypes in plants. Cell-biology evaluation of transgenic Arabidopsis and maize plants applied to single gene targets with different subcellular localizations (e.g. cytoplasm, chloroplasts, peroxisomes or mitochondria) by means of Confocal and TEM microscopy. Technology assessment with molecular biology and biochemical techniques by targeting proteins involved in Brassinosteroids (BR) signalling, and, thus, affecting agronomically important traits, in Arabidopsis and *Zea mays* plants using constructs fused to different fluorescent markers (eGFP, citrineYFP,

tagRFP or mCherry, under over-expressing, tissue-specific or inducible promoters). Published in Betti et al., *Plant Physiology* 2016.

- Six years' Technology Transfer experience focused on Proof-of-Concept studies, patents writing (Patent: US8669418 B2) and database searches; basic experience in setting up a Spin-Off company (familiar with licensing deals, IP portfolios, FTO searches, VCs investment process).

Ph.D. Candidate – University of Rome “Sapienza” (2005 - 2009)

- Characterization of genetically modified Potato Virus X (PVX) coat protein (CP) as carrier for plant-based vaccine formulations (Molecular Farming). Structural analyses (bioinformatics and biochemical) of the viral chimeras to optimize the exposition of epitopes on their surface. Cloning and over-expression of the PVX CP in *Escherichia coli*, for protein large-scale production for crystallization (Lico et al., *Vaccine* 2009).
- Functional analysis of PVX infection strategy in *Nicotiana benthamiana* plants: site-specific mutagenesis of CP aminoacids putatively involved in binding viral RNA, and into cell-to-cell or systemic diffusion of the virus. Microscopy studies (TEM, confocal and optical fluorescence and immunolocalization microscopy) of the PVX packaging and unpacking strategies in plant cells and in plasmodesmata (Betti et al., *Molecular Plant Pathology* 2012; Betti et al., *Plant Biosystems* 2010). Part of this research was carried out in the lab of Prof. Franco Faoro (Institute of Plant Pathology, University of Milan, Italy) to perform TEM studies on viral movement in infected cells (January-March 2008; June-July 2007), and in the lab of Prof. Lorenzo Frigerio (Department of Biological Sciences, University of Warwick, Coventry, U.K.), to evaluate the Tetra-Cysteine fluorescent tag as a new labelling technique to visualize plant-virus interactions by confocal microscopy (October 2007).

Research Assistant – University of Rome “Sapienza” (2003 - 2005)

- Research activity, for the Master thesis internship, on the genetics and physiology of the mycotoxigenic fungus *Phoma tracheiphila*. Identification of mycotoxin biosynthetic-related genes and their regulatory mechanisms in relation to oxidant and antioxidant factors in *Citrus* spp - *P. tracheiphila* host-fungus interaction.
- Physiological and molecular study of the relationship among reactive oxygen species, lipoperoxides and hormone production in biotic and abiotic stresses in the plant-pathogen interaction *P. tracheiphila*-*Citrus* spp.

FELLOWSHIPS, AWARDS & GRANTS

- 2021: Best poster award at “18th International Symposium on Rice Functional Genomics” (ISRFG), November 2021, Barcelona (Spain).
- 2021: Granted funding as external partner in “Adventitious rooting vs xylary development: the integration of jasmonates and brassinosteroids into cell reprogramming in response to heavy metals and metalloids in the model plants *Arabidopsis* and rice”. Progetto Ateneo Sapienza; Resp. Prof. Altamura. Protocol number: RG120172B773D1FF.
- 2018: Awarded of a grant to attend the “113° Congresso della Società Botanica italiana - V International Plant Science Conference (IPSC)”, 12-14 September 2018, Fisciano, Italy.
- 2015: Recipient of an Industrial Research Fund (IOF) from Gent University, to provide IP for licensing-out/ Spin-off purposes.

- 2012: Awarded of the Belgian FWO travel fellowship to attend the Plant Biology 2012 conference, Austin, TEXAS, U.S.A.
- 2012: Awarded of a travel grant from American Society of Plant Biologists (ASPB) to attend the Plant Biology 2012 conference, Austin, TEXAS, U.S.A.
- 2011: Recipient of a two years Industrial Research Fund (IOF) from Gent University, to achieve further Proof-Of-Concept for a Spin-off Company development.
- 2011: Awarded of the Belgian FWO travel fellowship to attend the 22nd International Conference on Arabidopsis Research.
- 2008: Winner of a money award for young and worthy researchers in plant pathology to attend the 9th International Congress of Plant Pathology, Torino, Italy.
- 2007: Winner of a money award for students with high performance to attend the International Congress on Molecular Plant-Microbe Interaction.
- 2005: Recipient of a three years scholarship (via governmental examination) to perform the Ph.D. in Botany.
- 2005: Awarded of *magna cum laude* honour for the Master Degree thesis.
- 2000-2001: Recipient of a fellowship for students with high performance, carried out for the library of the Department of Plant Biology of the University of Rome "Sapienza".

SELECTED ORAL PRESENTATIONS IN NATIONAL AND INTERNATIONAL CONFERENCES

1. "Brassinosteroid regulation of stomata development via BIN2-SPCH interaction". Selected speaker at "113° Congresso della Società Botanica Italiana - V International Plant Science Conference (IPSC)", Fisciano Campus Universitario, Italy, 12-15/09/2018.
2. "Protein interference biotechnology to induce protein knock-downs in plants". Selected speaker at "Gruppi di lavoro su Biologia Cellulare e Molecolare & Biotecnologie e Differenziamento" of S.B.I. (Società Botanica Italiana), Sanremo, Italy, 13-15/06/2018.
3. "Targeted protein aggregation in *Arabidopsis thaliana* plants as a tool to specifically knock-down protein function". Selected speaker at "Plant Biology 2012 International ASPB meeting". Emerging technologies minisymposium, Austin, TEXAS (U.S.). 20-24/07/2012.
4. "BRASSINOSTEROID-INSENSITIVE 2 targeted aggregation in *Arabidopsis thaliana* plants, a protein interference approach". Selected speaker at "First International Conference on Brassinosteroid. Session: Brassinosteroids & agriculture, future directions", Barcelona, Spain 27-29/06/2012.
5. "Protein interference by targeted protein aggregation". Speaker at IWT SBO Conference-Pronotics Meeting, Gent, Belgium 18/11/2010.
6. "Protein interference by targeted protein aggregation in plants". Speaker at IWT SBO meeting, Faculty Club, Groot Begijnhof, Leuven, Belgium 15/10/2009.

7. "Electron microscopy analysis of the behaviour of Potato Virus X chimeric particles in planta opens new insights into viral movement strategies". Selected speaker at "8th National Congress of the Italian Society of Virology", Orvieto, Italy 21-23/09/2008.
8. "L'analisi microscopica del Virus X della Patata getta nuova luce sulle strategie del movimento virale". Selected speaker at "Gruppo di lavoro su Biologia Cellulare e Molecolare & Biotecnologie e Differenziamento" of S.B.I. (Società Botanica Italiana), Fisciano (Sa), Italy 23-25/6/2008.

INVITED ORAL PRESENTATIONS

1. "Peptide and Protein Interactions in Plant Development: the case study of stomata cell fate determination". Department of Biosciences, University of Milan "Statale", Italy (27/10/2020).
2. "A journey towards understanding plant responses to multiple signals: from pathogens to hormones". Career and research statement presentation, Department of Biology, Padua University, Italy (19/07/2019).
3. "Post Translational Modifications as the key in Brassinosteroids crosstalk with stomata development". Invited Lecture for the Doctoral school in Biosciences, Padua University, Italy (05/10/2018).
4. "PVX, a versatile plant virus for vaccines production against important human diseases". Invited speaker at Plant Pathology Institute, University of Milan, Italy, 27/02/2008.

EDITORIAL ACTIVITY

- Topic Editor, Guest Editor and Reviewer for *Plants* https://www.mdpi.com/journal/plants/topic_editors
- Review Editor for *Frontiers in Plant Science* <https://loop.frontiersin.org/people/709723/overview>
- Reviewer for *Plant Physiology and Biochemistry*
- Reviewer for *International Journal of Molecular Sciences*
- Reviewer for *Agronomy*
- Reviewer for *Environmental and Experimental Botany*

CONGRESSES

- 115° Congresso della Società Botanica Italiana - VII International Plant Science Conference (IPSC), 8 – 10 Settembre 2021, on-line.
- Gruppo di lavoro "Biologia Cellulare e Molecolare" & "Biotecnologie e Differenziamento" della S.B.I. (Società Botanica Italiana), Alessandria (on line) 16-18 Giugno 2021. (**Chair** in session: "Development and Differentiation").
- Frontiers Editors' Summit | 26 November 2020 on line event
- 114° Congresso della Società Botanica Italiana - VI International Plant Science Conference (IPSC), Padova, Orto Botanico, 4-7 Settembre 2019.
- Gruppo di lavoro "Biologia Cellulare e Molecolare" & "Biotecnologie e Differenziamento" della S.B.I. (Società Botanica Italiana), Napoli, 12-14 Giugno 2019.
- 113° Congresso della Società Botanica Italiana - V International Plant Science Conference (IPSC), 12-15 Settembre 2018, Fisciano Campus Universitario, Italy.

- Gruppo di lavoro su “Biologia Cellulare e Molecolare” & “Biotecnologie e Differenziamento” della S.B.I. (Società Botanica Italiana) 13-15 Giugno 2018, Sanremo, Italy.
- Thirty years of Plant Biotechnology, 12 November 2013, Gent, Belgium.
- Mini-symposium “Maize as a model plant”, 12 September 2013, Gent Belgium.
- Annual Meeting of the European Network for Plant Endomembrane Research (ENPER), 27-30 August 2013, Gent, Belgium.
- VIB Science Club Imaging IV, 29 January 2013, Gent, Belgium.
- Symposium “Green Biotech for Society”, 6 December 2012, Gent, Belgium.
- Academic Opening Bioimaging core VIB, 5 December 2012, Gent, Belgium.
- Plant Biology 2012 International ASPB meeting. Austin, Texas (U.S.), 20-24 July 2012.
- First International Brassinosteroid Conference. Barcelona, Spain, 27-29 June 2012.
- VIB Seminar 2012, 19-20 April 2012, Blankenberge, Belgium.
- Symposium “Closer to the future” 15 years VIB, 6 October 2011, Ghent, Belgium.
- BARN Mini-Symposium "Growth and Development of Roots", 27 January 2011, Louvain-la-Neuve, Belgium.
- Annual Meeting of the European Network of Plant Endomembrane Research (ENPER), 27 Sept - 1 Oct 2010, Marienburg, Zell an der Mosel, Germany.
- VIB seminar 2010, 4th March, 2010, Blankenberge, Belgium.
- VIB Science Club Imaging II, 1 December 2009, Gent, Belgium.
- 8th National Congress of the Italian Society of Virology, 21-23 September 2008, Orvieto (Tr), Italy.
- 9th International Congress of Plant Pathology, 24-29 August 2008, Torino, Italy.
- Scientific Meeting of Work Group on Biotechnologies and Differentiation and of Work Group on Cellular and Molecular Biology of the Italian Botanical Society, 23-25 June 2008 Fisciano (Sa), Italy.
- Technology Platform “IT-Plants for the Future”, 17 June 2008 Rome, Italy.
- Meeting about Protein Folding, 9-10 June 2008 Roma, Italy.

CONFERENCE PROCEEDINGS

1. Chirivì D. **Betti C.**, Fornara F. (2021). “Interactomics for Rice Flowering: a Proximity Labelling Approach”. *18th International Symposium On Rice Functional Genomics (ISRFG)*. 3-5 November 2021 Barcelona Spain. **Best poster award.**
2. Della Rovere F., **Betti C.**, Fattorini L., Girardi N., Piacentini D., Falasca G., Altamura M.M. (2021). “Roles of Brassinosteroids on Arabidopsis thaliana rooting in the presence of Cadmium”. *115° Congresso della Società Botanica Italiana - VII International Plant Science Conference (IPSC)*.
3. **Betti C.***, Houbert A. and Russinova E. (2019). “Polarity-driven cell divisions: the case study of stomata development”. *114° Congresso della Società Botanica Italiana - VI International Plant Science Conference (IPSC)*, Padua, Botanical Garden, Italy. ***corresponding author**
4. Della Rovere F., Fattorini L., Hause B., Piacentini D., Ronzan M., Falasca G., Altamura M.M. and **Betti C.** “Role of the crosstalk between jasmonate and ethylene signalling in the adventitious rooting and xylogenesis in *Arabidopsis thaliana*”. *2nd Annual Congress on Plant Science and Biosecurity*, London, UK.

5. Bellini E., Rugnini L., Maresca V., **Betti C.**, Sorbo S., Basile A., Andreucci A., Ruffini Castiglione M., Bruno L., Sanità di Toppi L. (2019). "From cyanobacteria to land plants: is the phytochelatin synthase enzyme necessary for both detoxification and homeostasis of metals?" *Gruppo di lavoro su "Biologia Cellulare e Molecolare" & "Biotecnologie e Differenziamento" della S.B.I. (Società Botanica Italiana)*, Napoli, Italy.
6. Grinzato A., Kandiah E., Lico C., **Betti C.**, Baschieri S., Zanotti G. (2019). "Atomic structure of Potato Virus X, the prototype of the Alphaflexviridae virus family". MS08-P05 *Acta Crystallographica Section A - Foundations and advances* A75, e148
7. Bellini E., Rugnini L., Maresca V., **Betti C.**, Sorbo S., Basile A., Andreucci A., Ruffini Castiglione M., Bruno L., Sanità di Toppi L. (2019). "From cyanobacteria to land plants: is the phytochelatin synthase enzyme necessary for both detoxification and homeostasis of metals?" *International Conference on Integrative Plant Physiology*, Sitges, Spagna.
8. **Betti C.***, Gudesblat G., Russinova E. (2018). Brassinosteroid regulation of stomata development via BIN2-SPCH interaction. *113° Congresso della Società Botanica Italiana - V International Plant Science Conference (IPSC)*; ***corresponding author.**
9. **Betti C.***, Schymkowitz J., Rousseau F., Russinova E. (2018). Protein interference biotechnology to induce protein knock-downs in plants. *Gruppo di lavoro "Biologia cellulare e molecolare" & "Biotecnologie e differenziamento" della S.B.I. (Società Botanica Italiana)*; ***corresponding author.**
10. **Betti C.**, Coutuer S., Xu J., De Rycke R., Van Houtte I., Inze D., Rousseau F., Schymkowitz J., Russinova E. (2012). Brassinosteroid-insensitive 2 targeted aggregation in *Arabidopsis thaliana* plants, a protein interference approach. *First International Brassinosteroid Conference.*
11. **Betti C.**, Coutuer S., Xu J., Van Houtte I., Inze D., Rousseau F., Schymkowitz J., Russinova E. (2012). Targeted protein aggregation in *Arabidopsis thaliana* plants as a tool to specifically knock-down protein function. *Plant Biology 2012 International ASPB meeting*. Emerging technologies session.
12. Gudesblat, G., Schneider-Pizon, **Betti, C.**, J., Mayerhofer, J., Vanhoutte, I., Boeren, S., Zhiponova, M., de Vries, S., Jonak, C., Russinova, E. (2011). Brassinosteroids regulate stomatal development through inhibition of BIN2-mediated phosphorylation of SPEECHLESS. *Stomata 2012. 29th New Phytologist Symposium.*
13. **Betti C.**, Coutuer S., Xu J., Van Houtte I., Inze D., Rousseau F., Schymkowitz J., Russinova E. (2011). Targeted protein aggregation in *Arabidopsis thaliana* plants as a tool to specifically knock-out protein function. *Abstracts Book of the 22nd International Conference on Arabidopsis Research: New technologies section* 555.
14. Baschieri S., **Betti C.**, Lico C., Maffi D., D'Angeli S., Benvenuto E., Faoro F. (2008). New insights into Potato Virus X movement through the use of chimeric virus particles. *Proceedings of the 10th Annual Congress of the "Federazione Italiana Scienze della Vita"*: D06.01.
15. **Betti C.**, Lico C., Maffi D., D'Angeli S., Benvenuto E., Faoro F., Baschieri S. (2008). Electron microscopy analysis of the behavior of Potato Virus X chimeric particles *in planta* opens new insights into viral movement strategies. *Abstract Book of the 8th National Congress of the Italian Society of Virology*: 20.
16. Lico C., Mancini M., **Betti C.**, Benvenuto E., Baschieri S. (2008). Chimeric Plant Virus particles displaying an influenza virus-derived peptide activate specific CD8+ T cells in mice. *Abstract Book of the 8th National Congress of the Italian Society of Virology*: 63.
17. Lico C., Mancini M., **Betti C.**, Benvenuto E., Baschieri S. (2008). Chimeric Potato Virus X particles activate influenza virus-specific CD8+ T cells in mice. *Proceedings of the 52nd Italian Society of Agricultural Genetics Annual Congress*: E_21. (Winner of the Poster Prize Money Award).
18. **Betti C.**, Lico C., Maffi D., D'Angeli S., Benvenuto E., Baschieri S., Faoro F. (2008). L'analisi microscopica del Virus X della Patata getta nuova luce sulle strategie del movimento virale. *Book of*

19. **Betti C.**, Lico C., Benvenuto E., Baschieri S. (2007). Production and purification of native and recombinant *Potato Virus X* Coat Protein aimed to structural characterization. *Book of Abstracts of the International Congress on Molecular Plant-Microbe Interactions*: 277.
20. Lico C., Capuano F., **Betti C.**, D'Angeli S., Donini M., Marusic C., Benvenuto E., Baschieri S. (2007). Peptide display on *Potato Virus X* defines the role of the coat protein in cell-to-cell and phloem movement. *Book of Abstracts of the International Congress on Molecular Plant-Microbe Interactions*: 277-78.
21. **Betti C.**, Reverberi M., Mattei B., Zjalic S., Fabbri A.A., Fanelli C. (2007). *Phoma tracheiphila*/Citrus *limon* interaction: implications for differential activation of oxidative stress-related enzymes and of proteins' synthesis in the "mal secco" disease. *Book of Abstracts of the International Congress on Molecular Plant-Microbe Interactions*: 318-19.
22. Reverberi M., **Betti C.**, Mattei B., Spadoni S., Fabbri A.A., Zjalic S. and Fanelli C. (2006). Oxidative stress plays an important role in "mal secco" disease caused by *Phoma tracheiphila*. *Book of Abstracts of the Eight European Conference on Fungal Genetics (ECFG) IX*:38.
23. **Betti C.**, Reverberi M., Zjalic S., Mattei B., Fabbri A.A. and Fanelli C. (2005). Different approaches to study the interaction *Citrus/Phoma tracheiphila* reveal an important role played by oxidative stress. *J. Plant Pathol.* 87 (4, special issue):275.
24. **Betti C.**, Fabbri A.A., Ricelli A., Fanelli C. and Reverberi M. (2004). A physiological and molecular approach reveals a possible mode of action of *Phoma tracheiphila* in its interaction with lemon. *J. Plant Pathol.* 86 (4, special issue):295.
25. Reverberi M., **Betti C.**, Fabbri A.A. and Fanelli C. (2003). A molecular approach for characterising Pt60 a phytotoxic glycoprotein component of the malseccin complex. *J. Plant Pathol.* 85 (4, special issue):289.

RESEARCH TECHNIQUES AND APPLIED METHODS

- Species. Plants, *in vitro* cultures and *in vivo* propagation: *Arabidopsis thaliana*, *Nicotiana benthamiana*, *Zea mays*, *Oryza sativa*; Fungi, *in vitro* cultures: conidia and spore isolation, mycelia cultures; Bacteria: *Escherichia coli*, *Agrobacterium tumefaciens*. Human cell cultures.
- Molecular techniques. Extraction of genomic and plasmidic DNA; extraction of RNA and cDNA synthesis; Southern and Northern blots with non-radioactive probes; PCR-based techniques including qRT-PCR and site-directed mutagenesis; Gene cloning including Gateway system technology; DNA and cDNA libraries; Transformation of bacteria; Transient (PVX- and Agro-mediated) transformation of *Nicotiana benthamiana* plants; Stable (floral dip) *Arabidopsis thaliana* transformation.
- Biochemical techniques. Protein electrophoresis (SDS-, Native- and Blue Native-PAGE). Immunoprecipitation and co-IP; Western blot analysis; Starch assays; Viral and bacterial protein extraction and purification (ion-exchange and affinity chromatography techniques); Protein isolation from fungal culture filtrates; ELISA and DAS ELISA; ÄKTA FPLC analysis by Gel Filtration; Enzyme assays with specific substrates; MS-spectrometry data analysis (MASCOT); Virus purification; Microsomal membranes isolation.
- Microscopy. Plant samples inclusion in methacrylic and epossidic resins; Sample sectioning using both microtome and ultramicrotome; Immunolocalization procedures at LM: enzymatic, IHC (immunohistochemistry) or IHC-P with DAB and/or AP substrates also in DAKO Autostainer machines; silver enhancement gold-labelling; double IF (immunofluorescence) at fluorescence or confocal microscope on sections or cytopins; Immunogold labelling and morphological analysis at

TEM; Fluorescence analyses under Stereo, Light and Confocal Microscopy; Time lapse and Z-stack Confocal microscopy analyses; Virion structural analysis by leaf dip and I.S.E.M. at TEM. GUS, Evans blue, DAB and Silver enhancement stainings for visualization in optical microscopy.

LANGUAGES

Italian (mother tongue), English (fluent, spoken and written), Dutch (basic level).