BARBARA MOLESINI

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PERSONAL INFORMATION

Birthdate: December 18, 1976
Birthplace: Bussolengo, Verona, Italia

CURRENT POSITION

March 2022: Associate Professor Area: 05/A2 - Plant Physiology - SSD: BIO/04 - Plant Physiology, Department of Biotechnology, University of Verona.

QUALIFICATION

2005: PhD in Agro-Industrial Biotechnology, XVII cycle, University of Verona.

2001: Degree in Agro-Industrial Biotechnology, Faculty of Science, University of Verona.

1995: Scientific Maturity at the Liceo Scientifico Enrico Medi, Garda (VR).

NATIONAL SCIENTIFIC HABILITATION

National scientific habilitation as second level professor for sector 05/A2 - Plant Physiology from 04/04/2018 to 04/04/2027.

National scientific habilitation as second-band professor for the competitive sector 07/E1 - Agricultural Chemistry, Agricultural Genetics and Pedology from 25/10/2018 to 25/10/2027.

POSTGRADUATE SPECIALISATION COURSES

- Training "Precision Genome Engineering" and "Genome Engineering and Synthetic Biology: Tools and Technologies" symposium, UGent - VIB Research Building FSVM- Gent, Belgium, 27-29 January 2016.
- "Nutraceutics" course, Ettore Majorana Foundation International School of Pharmacology and Centre for Scientific Culture, Erice, Trapani, 26-30 September 2015.
- "Advanced microscopy techniques as a tool for the analysis of cells and tissues in plant organisms" organized by the "Società Botanica Italiana", Sabaudia, Latina, 16-19 October 2006.
- "Affimetrix microarray data analysis" organized by "Associazione per la Ricerca Biomedica e Biotecnologica", Torino, 29 September-3 October, 2003.
- PERL course for microarray data extraction" organised by "Associazione per la Ricerca Biomedica e Biotecnologica" in collaboration with CINECA, Turin, 17-21 March 2003.

- Bioinformatics course organised by "Società Italiana Genetica Agraria", Cortona, Arezzo, 12-14 November 2002.

PROFESSIONAL EXPERIENCES

- November 2006 - February 2022: Assistant professor, Area: 05/A2 - Plant Physiology - SSD: BIO/04 - Plant Physiology, Department of Biotechnology.
- May 2006 - October 2006: Extension of the research grant "Identification of genes involved in the early stages of tomato fruit development". Scientific responsible: Prof. Angelo Spena.
- February 2005 - January 2006: Research grant "Identification of genes involved in the early stages of tomato fruit development". Scientific responsible: Prof. Angelo Spena.
- January 2002 - December 2004: PhD in Agro-industrial Biotechnology, XVII cycle, at the Science and Technology Department of the University of Verona. Thesis title: "Analysis of the expression profile of the early stages of fruit development in parthenocarpic tomato plants". Supervisor: Prof. Angelo Spena; Co-tutor: Dr. Tiziana Pandolfini.
- October 2001 - December 2001: Research grant "Analysis of the transcriptional profile of leguminous plants inoculated with different strains of rhizobium and with rhizobium with higher phytohormone synthesis". Scientific responsible: Prof. Angelo Spena.
- July 2001 - October 2001: Collaboration within the research "Vegetable biotechnology" for the activity "molecular analysis on maize mutants"; Responsible: Prof. Adriano Marocco, Università Cattolica del Sacro Cuore, Piacenza.
- March 2000- February 2001: Degree thesis at the Department of Science and Technology of the University of Verona. Thesis title: "Analysis of transcriptional profiles modulated by nitric oxide in Arabidopsis thaliana". Supervisor: Dr. Annalisa Polverari; Co-author: Prof. Massimo Delledonne.

SCIENTIFIC INTERESTS

Research topics can be grouped into four main fields:

1) Study of the molecular mechanisms that regulate fruit development and biotechnological approaches to improve productivity

The study of the molecular basis that regulates fruit set, i.e. the initial phase of fruit development following fertilisation, is the main area of research. This activity involves basic research aimed at characterising the functional role of genes involved in the control of ovary development, both in the presence and absence of fertilisation, using tomato and Arabidopsis as model species. The knowledge obtained from these functional studies has allowed the development of biotechnological approaches aimed at increasing fruit production in plants of agricultural interest. In particular, tomato lines characterised by earlier flowering and fruiting and with parthenocarpic fruit development have been obtained in tomato, traits of significant agricultural interest.

2) Study of the potential therapeutic effects of natural compounds of plant origin

From transcriptomic analyses carried out during the PhD on different tomato lines, a miniprotein of the "cystine-knot" type, very abundant in the ripe fruit, was identified, which presents

structural homology with animal growth factors of the Epidermal Growth Factor (EGF) and Vascular Endothelial Growth Factor (VEGF) type. These growth factors are both crucial in the regulation of angiogenesis both in physiological conditions and in pathological situations such as tumour progression. Subsequent research has shown that tomato miniproteins are able to inhibit, in a nanomolar concentration range, angiogenesis both in vitro on human cells and in vivo in an animal model (zebrafish embryos). These studies have revealed that the tomato cystine-knot proteins may represent a model for the development of molecules of therapeutic interest.

3) Study of the molecular changes associated with the early stages of rhizobium-legume interaction

Research in this field has shown that N5 nodulin, a non-specific lipid-transfer protein of *Medicago truncatula*, is required for the establishment of the root symbiosis with *Sinorhizobium meliloti* and is involved in the initial phases of the symbiotic interaction. Transcriptomics, proteomics and lipidomics studies carried out during the early stages of *S. meliloti-M. truncatula* interaction have provided further insight into the genes that regulate the local and systemic response to rhizobia and into the functional role of N5 and associated metabolic pathways. The overall research has permitted the definition of a possible molecular model of N5 action which is involved in the synthesis and rearrangement of the membranes that characterise the formation of the infection thread and the symbiosome.

4) Induction of resistance to viruses and fungi in plants by RNA interference

Research in this field has employed RNA interference (RNAi) technology to obtain local and systemic resistance to Sharka virus in the model species *Nicotiana benthamiana*. For fruit trees, in particular grapevine and peach, the final targets of the research, defence against fungi and viruses can also be achieved by producing rootstocks expressing RNAi effector molecules, onto which cultivars of commercial interest can be grafted. In this context, methods for regeneration of peach and grapevine and for genetic transformation of grapevine cultivars/rootstocks have been developed. A more recent line of research, based on the discovery of the phenomenon of bidirectional cross-kingdom RNAi between pests/pathogens and hosts, has allowed the development of a method based on exogenous applications (spray-induced gene silencing) of RNA molecules to silence Dicer-like 1 and Dicer-like 2 genes, pathogenicity factors of *Plasmopara viticola*. This approach has proven to be an effective system for controlling the growth of *P. viticola* in grapevine, both as a protective and curative treatment.

FUNDED RESEARCH PROJECTS

2022 PRIN-MIUR Cross-kingdom RNAi for enhancing plant resistance (2022LBK9R4) Scientific Coordinator of the Local Unit: Prof. Barbara Molesini. Duration: 24 months.

QUALIMEC- Lot 1- Assignment of specialist services to support research in the framework of the BIOTECH program "SUSTAINABLE BIOTECHNOLOGIES FOR ITALIAN AGRICULTURE" - Mipaaf, project "Improvement of qualitative properties in eggplant and artichoke through genome editing and cisgenesis approaches". Contract deadline: 23/03/2021-30/06/2022. Role: Project co-responsible.

2019 PON-MIUR Industrial research and experimental development project PNR 2015-2020 "Resilience and Sustainability of fruit and vegetable and cereal supply chains to enhance territories" RESO (application code ARS01_01224). Scientific Coordinator of the Local Unit: Prof. Tiziana Pandolfini. Role: Participant.

2016-2021 EU COST Action CA15223: Modifying plants to produce interfering RNA (iPlanta). Duration: 27/10/2016 -26/04/2021. Coordinator: Prof. Bruno Mezzetti, Università Politecnica delle Marche. Role: Participant.

2017 PRIN-MIUR Small RNAs and Peptides for controlling diseases and development in horticultural plants (20173LBZM2_003). Scientific Responsible of the Local Unit: Prof. Tiziana Pandolfini. Duration: 36 months. Role: Participant

"Joint Projects 2016" University call for the implementation of Joint Research Projects with local institutions and enterprises; "Obtaining parthenocarpy in tomatoes through the CRISPR/Cas9 system" between the University of Verona and CREA-Research Unit for Horticulture (CREA-ORL), located in Montanaso Lombardo (Italy). Project duration: 24 months. Role: Scientific responsible.

2012 PRIN-MIUR (2012KKNMWC_004) Title: "Molecular strategies to gain resistance to Sharka viruses (PPV) in peach and apricot". Scientific responsible of the local unit: Prof. Tiziana Pandolfini. Duration: 36 months. Role: participant.

"Joint Projects 2010" University call for proposals for joint research projects with local organisations and companies; "Biotechnological approach for the production of tomatoes with increased content of cystine-knot miniproteins in the fruit" between the University of Verona and CREA-Research Unit for Horticulture (CREA-ORL), located in Montanaso Lombardo (Italy).. Duration: 12 months. Role: Scientific responsible.

2005 PRIN-MIUR Title: "RNA silencing of genes involved in the control of early stages of tomato fruit development". Scientific coordinator: Prof. Angelo Spena, University of Verona. Duration: 24 months. Role: participant.

2001 FIRB-MIUR (RBAU01JTHS), Title: Improvement of qualitative and quantitative production in horticulture: conferring parthenocarpic fruit development and fertility improvement, with genetic engineering techniques, to cultivated varieties of tomato, eggplant, strawberry, raspberry, table grape, mandarin and lemon". Scientific coordinator: Prof. Angelo Spena, University of Verona. Duration: 36 months. Role: participant.

SUCCESSFULLY EVALUATED RESEARCH PROJECTS OF NATIONAL AND INTERNATIONAL RELEVANCE (NOT FUNDED)

2011 Seventh Framework Program "FP7". Scientific Coordinator: Prof. Tiziana Pandolfini, University of Verona. Title: "Microbial biodiversity and humic matter decomposition in lakes". Role: participant.

2009 PRIN-MIUR, Title: "Platelet-endothelium interaction and prostacyclin synthesis: role of micro RNA". Scientific coordinator: Prof. Pietro Minuz, University of Verona. Role: Participant.

EDITORIAL AND REVIEWING ACTIVITIES

June 2021- Guest Editor for the journal Genes "Section Microbial Genetics and Genomics", special issue "RNA Silencing in Plant-Microorganism Interactions".

May 2021 - present: Associate Editor in "Plant Biotechnology" for the journal Frontiers in Plant Science, ISSN: 1664-462X.

April 2021 - present: Member of the Editorial board of the journal "Genes", ISSN: 2073-4425, MDPI

August 2017 - to date: Member of the Editorial board of the journal "Journal of crop improvement", ISSN: 1542-7528, Taylor and Francis Ltd.

Reviewer activities for international journals such as PLOS One, Plant and Cell Physiology, Gene, Plant Physiology and Biochemistry, Chemical Engineering Journal, Scientific Reports, Plant Biology, Plant Science, Plant Cell Reports, BMC Research Notes, Frontiers in Plant Science.

2018 Project evaluator of "European Plant Phenotyping Network" (EPPN2020) within the Horizon 2020 program.

2024 Project evaluator for the "United States-Israel Binational Science Foundation" (BSF).

SCIENTIFIC AND PROFESSIONAL AWARDS

2016-2021 Expert member of Working Group WG2 "Application of RNAi technology in GM plants" within the EU COST Action CA15223: Modifying plants to produce interfering RNA (iPlanta).

2018 ELSEVIER Award: Outstanding contribution in reviewing - Plant Physiology and Biochemistry Journal.

2017 winner of the Annual Individual Funding of Basic Research Activities (ANVUR).

ORAL PRESENTATIONS AT CONGRESSES/CONFERENCES AND CONFERENCE ORGANISATION

- Molesini B*, Pennisi F, Cressoni C, Speghini A, Pandolfini T. RNA-nanovectors as a tool to study gene function and modify the expression of target genes in tomato flower buds. COST IPLANTA, 4th Conference, (online) Athens, 26-28 February 2020.
- Molesini B*, Dusi V, Pennisi F, Pandolfini T. Novel insights on the role of tomato cystine-knot proteins in the regulation of fruit set. 11th Congress of the Italian society of plant biology- SBI-SIBV Congress, Padova, Italy, 4-6 September 2019.
- Molesini B*, Rotino GL, Pandolfini T. RNA silencing as a tool for studying genes involved in fruit set. COST IPLANTA, 1ST Conference, Rome, February 15-17, 2017.
- Molesini B*. Sinorhizobium-Medicago symbiosis: local and systemic signalling at early stages of infection. PLANT BIOLOGY WINTER SCHOOL, Centro Residenziale Universitario of Bertinoro, Forlì-Cesena, 26-28 February 2015.
- Molesini B*., Pandolfini T., Rotino G.L., Dani V., Spena A., Hormonal control of fruit development: Aucsia genes as new players in auxin-mediated fruit initiation? , "Società italiana di Biologia Vegetale- First Congress", Verona, 30 June-2 July 2009.

23 June 2021 Co-organizer of the webinar "Small bioactive molecules as tools for sustainable agriculture", (cycle of 5 seminars).

5-9 May 2025 Rimini Expo Centre (Italy) Scientific Committee component of the "International Symposium on Biotechnological Tools in Horticulture".

TEACHING ACTIVITIES

2022/2023 – to date: Biotechnological innovations for sustainable development, Master's degree in Law for Biotechnological innovations for sustainable development, University of Verona.

2022/2023: Master's degree in Medical bioinformatics: Co-teacher of “Molecular biology”, University of Verona.

2020/2021 - to date: "Molecular technologies applied to plants", Master's degree in Agri-Food Biotechnology (LM7), University of Verona.

2015/2016, 2016/2017, 2017/2018, 2018/2019, 2019/2020: "Molecular techniques applied to plants", Biotechnology Degree Course (L2), University of Verona.

2009/2010, 2010/2011, 2011/2012, 2012/2013, 2013/2014, 2014/2015: Co-teacher of "Molecular biology", Biotechnology Degree Course (L2), University of Verona.

2011/2012, 2012/2013 Co-teacher of the course "Plant biology and physiology", Degree in Viticulture and oenological science and technology (L25), University of Verona.

2006/2007, 2007/2008, 2008/2009 Co-teacher of the course "Biomolecular technologies", Degree in Agro-Industrial Biotechnology, University of Verona.

October 2005 - January 2006: Contract for coordinated and continuous collaboration for supporting teaching assistance during practical activities for the course "Biomolecular Technologies", Degree in Agro-Industrial Biotechnology, University of Verona.

January 2005 - Scholarship for assistance to the teaching activities in the laboratory of "Biomolecular Technologies", Degree in Agro-Industrial Biotechnology, University of Verona.

January 2002 - Contract for intellectual work for optional and supplementary activities and teaching at "Liceo Scientifico" G. Fracastoro within the project "Experimental approach to new genetics".

April 2001 - June 2001: Scholarship at the Scientific and Technological Department of Verona for teaching support in the course "Genetic Biotechnology", Degree in Agro-Industrial Biotechnology, University of Verona.

2006 - present: Advisor of numerous thesis works within the Bachelor's Degree in Biotechnology, Master's Degree (LM7) at the University of Verona.

ACTIVITIES IN PHD COURSES

2024: Academic board member of the PhD in Smart Agrifood Sciences.

2018- 2022: Academic board member of the PhD in Biotechnology.

Co-tutor of PhD theses in Biotechnology – (Dr. Valentina Dusi 34th cycle, Dr. Federica Pennisi 37th cycle)

Tutor of a PhD thesis in Biotechnology – (Dr. Daniela Fortini 37th cycle).

Tutor of a PhD thesis in Smart Agrifood Sciences – (Dott. Tommaso Sanson 40° ciclo).

2019/2020, 2021/2022, 2022/2023: Seminars as part of the training activity of the PhD program in Biotechnology.

External evaluator of Ph.D. theses: Doctorate in Biosciences (University of Padua), Doctorate in Environmental Sciences (University of Milan).

INSTITUTIONAL RESPONSIBILITIES

2019- to date: Component of "Commissione Paritetica Docenti Studenti della Scuola di Scienze ed Ingegneria".

2013-2015: Component of the Quality Assurance Commission for the Biotechnology Degree Course (L2).

AFFILIATION TO SCIENTIFIC SOCIETIES

She is a member of the Italian Society of Plant Biology and the Federation of European Societies of Plant Physiology.

PUBLICATIONS

(Scopus, ID: 6507922315)
Citazioni: 1032
h-index: 18
https://orcid.org/0000-0002-4324-4908

Articles in International Journals

Capriotti L, **Molesini B**, Pandolfini T, Jin H, Baraldi E, Cecchin M, Mezzetti B, Sabbadini S. RNA interference-based strategies to control Botrytis cinerea infection in cultivated strawberry. Plant Cell Rep. 2024 Sep 2;43(9):225. doi: 10.1007/s00299-024-03296-7.

Dusi V, Pennisi F, Fortini D, Atarés A, Wenkel S, **Molesini B**, Pandolfini T. Involvement of the tomato BBX16 and BBX17 microProteins in reproductive development. Plant Physiol Biochem. 2024 Aug;213:108873. doi: 10.1016/j.plaphy.2024.108873.

Capriotti L, Ricci A, **Molesini B**, Mezzetti B, Pandolfini T, Piunti I, Sabbadini S. Efficient protocol of *de novo* shoot organogenesis from somatic embryos for grapevine genetic transformation. Front Plant Sci. 2023 May 31;14:1172758. doi: 10.3389/fpls.2023.1172758.

Molesini B*, Pennisi F, Cressoni C, Vitulo N, Dusi V, Speghini A, Pandolfini T. Nanovector-mediated exogenous delivery of dsRNA induces silencing of target genes in very young tomato flower buds. Nanoscale Adv. 2022 Sep 14;4(21):4542-4553. doi: 10.1039/d2na00478j.

Haile Z.M., Gebremichael D.E., Capriotti L, **Molesini B**, Negrini F, Collina M, Sabbadini S, Mezzetti B, Baraldi E. Double-Stranded RNA Targeting Dicer-Like Genes Compromises the Pathogenicity of *Plasmopara viticola* on Grapevine. Front Plant Sci. 2021 May 18;12:667539. doi: 10.3389/fpls.2021.667539.

Molesini B, Dusi V, Pennisi F, Di Sansebastiano GP, Zanzoni S, Manara A, Furini A, Martini F, Rotino GL, Pandolfini T. TCMP-2 affects tomato flowering and interacts with BBX16, a homolog of the *Arabidopsis* B-box MiP1b. Plant Direct. 2020 Nov 7;4(11):e00283. doi: 10.1002/pld3.283.

Molesini B*, Dusi V, Pennisi F, Pandolfini T. How Hormones and MADS-Box Transcription Factors Are Involved in Controlling Fruit Set and Parthenocarpy in Tomato. Genes (Basel). 2020 Nov 30;11(12):1441. doi: 10.3390/genes11121441.

Manara A[§], Fasani E[§], **Molesini B[§]**, DalCorso G, Pennisi F, Pandolfini T, Furini A. The Tomato Metallocarboxypeptidase Inhibitor I, which Interacts with a Heavy Metal-Associated Isoprenylated Protein, Is Implicated in Plant Response to Cadmium. Molecules. 2020 Feb 6;25(3). doi: 10.3390/molecules25030700.

Chignola R, Sega M, **Molesini B**, Baruzzi A, Stella S, Milotti E. Collective radioresistance of T47D breast carcinoma cells is mediated by a Syncytin-1 homologous protein. PLoS One. 2019 Jan 30;14(1):e0206713. doi: 10.1371/journal.pone.0206713.

Sabbadini S, Capriotti L, **Molesini B**, Pandolfini T, Navacchi O, Limera C, Ricci A, Mezzetti B. Comparison of regeneration capacity and *Agrobacterium*-mediated cell transformation efficiency

of different cultivars and rootstocks of Vitis spp. via organogenesis. Sci Rep. 2019 Jan 24;9(1):582. doi: 10.1038/s41598-018-37335-7.

Treggiari D, Dalbeni A, Meneguzzi A, Delva P, Fava C, **Molesini B**, Pandolfini T, Minuz P. Lycopene inhibits endothelial cells migration induced by vascular endothelial growth factor A increasing nitric oxide bioavailability. Journal of Functional Foods (2018); 42: 312-318. doi: 10.1016/j.jff.2018.01.020.

Giampieri F, Gasparrini M, Forbes-Hernandez TY, Mazzoni L, Capocasa F, Sabbadini S, Alvarez-Suarez JM, Afrin S, Rosati C, Pandolfini T, **Molesini B**, Sánchez-Sevilla JF, Amaya I, Mezzetti B, Battino M. Overexpression of the Anthocyanidin Synthase Gene in Strawberry Enhances Antioxidant Capacity and Cytotoxic Effects on Human Hepatic Cancer Cells. J Agric Food Chem. 2018 Jan 24;66(3):581-592. doi: 10.1021/acs.jafc.7b04177.

Santi C, **Molesini B**, Guzzo F, Pii Y, Vitulo N, Pandolfini T. Genome-Wide Transcriptional Changes and Lipid Profile Modifications Induced by *Medicago truncatula* N5 Overexpression at an Early Stage of the Symbiotic Interaction with *Sinorhizobium meliloti*. Genes (Basel). 2017 Dec 19;8(12). doi:10.3390/genes8120396.

Molesini B*, Rotino GL, Dusi V, Chignola R, Sala T, Mennella G, Francese G, Pandolfini T. Two metallocarboxypeptidase inhibitors are implicated in tomato fruit development and regulated by the Inner No Outer transcription factor. Plant Sci. 2018 Jan;266:19-26. doi: 10.1016/j.plantsci.2017.10.011.

Astegno A, Bonza MC, Vallone R, La Verde V, D'Onofrio M, Luoni L, **Molesini B**, Dominici P. Arabidopsis calmodulin-like protein CML36 is a calcium (Ca(2+)) sensor that interacts with the plasma membrane Ca(2+)-ATPase Isoform ACA8 and stimulates its activity. J Biol Chem. 2017 Jul 18; 292(36) 15049–15061. doi: 10.1074/jbc.M117.787796.

Molesini B[§], Zanzoni S[§], Mennella G, Francese G, Losa A, Rotino GL, Pandolfini T. The Arabidopsis N-Acetylornithine Deacetylase Controls Ornithine Biosynthesis via a Linear Pathway with Downstream Effects on Polyamine Levels. Plant Cell Physiol. 2017 Jan 1;58(1):130-144. doi: 10.1093/pcp/pcw167.

Treggiari D, Zoccatelli G, Chignola R, **Molesini B**, Minuz P, Pandolfini T. Tomato cystine-knot miniproteins possessing anti-angiogenic activity exhibit in vitro gastrointestinal stability, intestinal absorption and resistance to food industrial processing. Food Chem. 2017 Apr 15;221:1346-1353. doi: 10.1016/j.foodchem.2016.11.020.

Molesini B, Treggiari D, Dalbeni A, Minuz P, Pandolfini T. Plant cystine-knot peptides: pharmacological perspectives. Br J Clin Pharmacol. 2017 Jan;83(1):63-70. doi: 10.1111/bcp.12932.

Treggiari D, Zoccatelli G, **Molesini B**, Degan M, Rotino GL, Sala T, Cavallini C, MacRae CA, Minuz P, Pandolfini T. A cystine-knot miniprotein from tomato fruit inhibits endothelial cell migration and angiogenesis by affecting vascular endothelial growth factor receptor (VEGFR) activation and nitric oxide production. Mol Nutr Food Res. 2015 Nov;59(11):2255-2266. doi:10.1002/mnfr.201500267.

Molesini B, Mennella G, Martini F, Francese G, Pandolfini T. Involvement of the Putative N-Acetylornithine Deacetylase from *Arabidopsis thaliana* in Flowering and Fruit Development. Plant Cell Physiol. 2015 Jun;56(6):1084-1096. doi: 10.1093/pcp/pcv030.

Molesini B[§], Cecconi D[§], Pii Y, Pandolfini T. Local and systemic proteomic changes in *Medicago truncatula* at an early phase of *Sinorhizobium meliloti* infection. J Proteome Res. 2014 Feb 7;13(2):408-421. doi: 10.1021/pr4009942.

Dall'Osto L, Piques M, Ronzani M, **Molesini B**, Alboresi A, Cazzaniga S, Bassi R. The *Arabidopsis* nox mutant lacking carotene hydroxylase activity reveals a critical role for xanthophylls in photosystem I biogenesis. Plant Cell. 2013 Feb;25(2):591-608. doi: 10.1105/tpc.112.108621.

Pii Y, **Molesini B**, Pandolfini T. The involvement of Medicago truncatula non-specific lipid transfer protein N5 in the control of rhizobial infection. Plant Signal Behav. 2013 Jul;8(7):e24836. doi: 10.4161/psb.24836.

Pandolfini T, **Molesini B**, Spena A. AUCSIA: an ancestral green plant miniprotein and the emergence of auxin transport. Plant Signal Behav. 2013 Feb;8(2):e22928. doi: 10.4161/psb.22928.

Pii Y, **Molesini B**, Masiero S, Pandolfini T. The non-specific lipid transfer protein N5 of *Medicago truncatula* is implicated in epidermal stages of rhizobium-host interaction. BMC Plant Biol. 2012 Dec 7;12:233. doi:10.1186/1471-2229-12-233.

Molesini B, Pandolfini T, Pii Y, Korte A, Spena A. *Arabidopsis thaliana* AUCSIA-1 regulates auxin biology and physically interacts with a kinesin-related protein. PLoS One. 2012;7(7):e41327. doi: 10.1371/journal.pone.0041327.

Molesini B, Pii Y, Pandolfini T. Fruit improvement using intragenesis and artificial microRNA. Trends Biotechnol. 2012 Feb;30(2):80-88. doi: 10.1016/j.tibtech.2011.07.005.

Cavallini C, Trettene M, Degan M, Delva P, **Molesini B**, Minuz P, Pandolfini T. Anti-angiogenic effects of two cystine-knot miniproteins from tomato fruit. Br J Pharmacol. 2011 Mar;162(6):1261-1273. doi: 10.1111/j.1476-5381.2010.01154.x.

Molesini B*, Rotino GL, Spena A, Pandolfini T. Expression profile analysis of early fruit development in iaaM-parthenocarpic tomato plants. BMC Res Notes. 2009 Jul 21;2:143. doi: 10.1186/1756-0500-2-143.

Molesini B, Pandolfini T, Rotino GL, Dani V, Spena A. Aucsia gene silencing causes parthenocarpic fruit development in tomato. Plant Physiol. 2009 Jan;149(1):534-548. doi: 10.1104/pp.108.131367.

Pandolfini T, **Molesini B**, Spena A. Molecular dissection of the role of auxin in fruit initiation. Trends Plant Sci. 2007 Aug;12(8):327-329. doi: 10.1016/j.tplants.2007.06.011.

Rotino GL, Acciarri N, Sabatini E, Mennella G, Lo Scalzo R, Maestrelli A, **Molesini B**, Pandolfini T, Scalzo J, Mezzetti B, Spena A. Open field trial of genetically modified parthenocarpic tomato: seedlessness and fruit quality. BMC Biotechnol. 2005 Dec 21;5:32. doi: 10.1186/1472-6750-5-32.

Polverari A, **Molesini B**, Pezzotti M, Buonaurio R, Marte M, Delledonne M. Nitric oxide-mediated transcriptional changes in *Arabidopsis thaliana*. Mol Plant Microbe Interact. 2003 Dec;16(12):1094-1105. doi: 10.1094/MPMI.2003.16.12.1094.

Pandolfini T, **Molesini B**, Avesani L, Spena A, Polverari A. Expression of self-complementary hairpin RNA under the control of the rolC promoter confers systemic disease resistance to plum pox virus without preventing local infection. BMC Biotechnol. 2003 Jun 25;3:7. doi: 10.1186/1472-6750-3-7.

(§ equal contribution; *corresponding author)

Book Chapters

Molesini B, Pandolfini T. Chapter 3: Exogenous application of small RNAs as a tool for gene function discovering. pp. 14-24, in "RNAi for Plant Improvement and Protection", Edited by Bruno Mezzetti, Jeremy Sweet and Lorenzo Burgos, CAB International publishing (2021).

Santi C, **Molesini B**, Pandolfini T. Chapter 9.2.5: "Which role for *Medicago truncatula* non-specific lipid transfer proteins in rhizobial infection?" pp. 637-644, in The Model Legume Medicago Truncatula 2-Volume Set, Wiley-Blackwell publisher, (2020) Frans De Bruijn (Editor). doi: 10.1002/9781119409144.

Sabbadini S, Pandolfini T, Girolomini L, **Molesini B**, Navacchi O. (2015) Peach (Prunus persica L.). In: Wang K. (eds) Agrobacterium Protocols. Methods in Molecular Biology, vol 1224. Springer, New York, NY. doi: 10.1007/978-1-4939-1658-0_17.

Pandolfini T, **Molesini B**, Spena A- Parthenocarpy in Crop Plants, pp 326-345. In Annual Plant Reviews, Volume 38 (2009), Fruit Development and Seed Dispersal, Lars Ostergaard (Editor), Wiley-Blackwell Publisher. doi: 10.1002/9781444314557.ch9.

Abstracts published in international journals/Posters/Proceedings of national and international conferences

-Pennisi F; Dusi V; Molesini B; Pandolfini T - The role of tomato B-box MicroProteins in reproductive development. Microproteins 2023: Unraveling the universe of microproteins - from discovery to physiology and application, Konventum conference center, Helsingør, Denmark, 31 May - 2 June 2023.

-Capriotti L, Sabbadini S, Molesini B, Cecchin M, Pandolfini T, Mezzetti B. Effect of Rootstock expressing hairpin RNA in conferring fungal resistance in Vitis vinifera. International Society for Molecular Plant-Microbe Interactions (ISMPM), Providence, Rhoad Island, USA, 16-20 July 2023.

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