

## PERSONAL INFORMATION

Name: **Elodie Vandelle**

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## CURRENT POSITION

Since July 2021 Associate Professor in Plant Pathology - Dept. of Biotechnology, University of Verona, Italy

## EDUCATION

2005 Ph.D. in Life Sciences-Biochemistry, Molecular and Cellular Biology, University of Burgundy, France.  
PhD thesis: "Mechanisms of activation of grapevine defense responses by the endopolygalacturonase 1 of *Botrytis cinerea*".  
Ph.D. Defense Board : Prof. Serge Delrot (President), Prof. L.C. Van Loon, Dr. Serge Kauffmann, Prof. Raoul Ranjeva, Prof. Massimo Delledonne, Prof. Alain Pugin

2004 Master Degree in Biochemistry, Molecular and Cellular Biology, University of Burgundy, France.  
M.Sc. thesis: The endopolygalacturonase 1 of *Botrytis cinerea* is an elicitor of grapevine defense responses.

## WORK EXPERIENCE

2018-2021 Senior Temporary Professor Assistant in Plant Pathology (tenure track) - Dept. of Biotechnology, University of Verona, Italy

2012 - 2017 Temporary Professor Assistant in Plant Pathology - Dept. of Biotechnology, University of Verona, Italy

2006 - 2012 Post-doctoral fellowship – Laboratory of Genetic Biotechnology – Dept. of Biotechnology, University of Verona, Italy

## QUALIFICATIONS

Feb 2022 National Scientific Qualification as Full Professor Scientific sector Plant Pathology AGR/12. Qualification valid up to 2031

July 2018 National Scientific Qualification as Associate Professor Scientific sector Plant Pathology AGR/12. Qualification valid up to 2027.

## Career breaks

2012-2013 Maternity Leave, 7 months

2017-2018 Maternity leave, 5 months

## SUPERVISION AND CO-SUPERVISION OF STUDENTS AND SCHOLARS

2006- 4 Post Doc / 15 PhD students (4 in progress) / >20 MSc students / 10 BSc students  
Dept. of Biotechnology, University of Verona

## TEACHING

2025- Module of the Course of **Plant-Soil-Microbe Interactions** as part of the Degree in Biotechnology – University of Verona

2022-24 Laboratory of Defense and Sustainability of Food Production Systems as part of the Degree in Innovation and Sustainability in Industrial Food Production - University of Verona

2020- Course of **Sustainable Control of Phytopathogens** as part of the Master's Degree in Biotechnology for Bioresources and Ecosustainable Development - University of Verona

2018- Course of **Phytopathological Biotechnology** as part of the Master's Degree in Agro-food Biotechnology - University of Verona

2016-24 Laboratory of **Grapevine Defenses** as part of the Degree in Viticulture and Enology - University of Verona

2006-2009 Laboratory of **Genetic Biotechnology** as part of the Degree in Biotechnology - University of Verona

2003-2005 Exercises in Biochemistry as part of the Master's Degree in Biochemistry, Molecular and Cellular Biology - Université de Bourgogne, France

2002 Course of **Grapevine Organography** (theory and laboratory) as part of the Master's Degree in Grapevine Science - Institut de la Vigne et du Vin Jules Guyot/Université de Bourgogne, France

## ORGANIZATION OF NATIONAL AND INTERNATIONAL CONGRESSES.

- X International Conference on *Pseudomonas syringae*, Casa de Vilar, Porto, Portugal, 4-7 June 2024 - **Chair** of the organizing committee

- XXVI National Conference of the Italian Society of Plant Pathology, Scheduled for 23-25 September 2020 at Polo Zanotto, Verona, Italy. Postponed to September 2021 on-line - **Co-chair** of the organizing committee.

- X International Symposium "Grapevine Physiology and Biotechnology," June 13 -18, 2016, Palazzo della Gran Guardia, Verona, Italy - **Member** of the local organizing committee

- XII International Conference on Reactive Oxygen and Nitrogen Species in Plants: from model systems to field, June 24-26, 2015, Palazzo della Gran Guardia, Verona, Italy - **Member** of the local organizing committee

## INSTITUTIONAL RESPONSIBILITIES

From Oct. 2023 Representative of the University of Verona in the Technical and Scientific Committee of the "Future Farming Initiative"

2020-2021 Representative of the Researchers of the Science and Engineering Area in the Academic Senate of the University of Verona

2019-present Member of the Quality Assurance Committee of the Master's Degree in Agri-Food Biotechnology

2018-present Member of the College of PhD in Biotechnology.

2018-present Member of the Department of Biotechnology Council

2018-2020 Member of the Phytotron/Greenhouse Committee of the Dept. of Biotechnology

## RESEARCH MAIN TOPICS

The past and actual research activities of E.V. are focused on the study of plant defence mechanisms and bacterial virulence at molecular level on both cultured (grapevine, kiwifruit) and model (*Arabidopsis*, tobacco) plants.

In this context, E.V. has conducted researches aiming at the identification, purification and characterization of a proteinaceous elicitor from *Botrytis cinerea* able to induce defence responses in grapevine cells, decrypting the signalling pathways triggered by this elicitor using a pharmacological approach.

Then, during the post-doctoral position, her research lines mainly focused on the role of peroxynitrite (formed by the reaction between nitric oxide and superoxide) and peroxynitrite-mediated tyrosine nitration during the hypersensitive response (HR) in the model pathosystem *A. thaliana/P. syringae* pv. *tomato*. In particular, two approaches were developed, i.e., a targeted approach aiming at deciphering the role of peroxide-mediated nitration on the regulation of the mitogen-activated protein kinase cascade, both *in vitro* and *in vivo*, as well as an untargeted proteomic approach to identify nitrated proteins in plants undergoing HR. Moreover, in the frame of the FIRB project, she studied the function of the cyclic GMP/AMP as key second messengers in nitric oxide-mediated signalling during plant defence responses to biotic stress.

E.V. further developed new research activities regarding the identification of genes involved in grapevine resistance to *Plasmopara viticola* and the study of their functions in defense signal transduction, from gene family identification to gene co-expression network analysis to identify the most promising candidate, further characterized in transgenic plants through biochemical and transcriptomic analyses. More recently, E.V. started to work on the pathosystem *Actinidia* (kiwifruit) / *P. syringae* pv. *actinidiae* (Psa), the causal agent of kiwifruit bacterial canker. In this context, she focused on the investigation of Psa aggressiveness determinants and the interkingdom communication between Psa and its host plant. Currently, she is broadening the investigation to the whole *Pseudomonas* complex, with the aim to figure out the mechanisms, and regulating factors, at the basis of host range definition, using approaches of molecular biology, biochemistry and phenotyping with model systems applied to plant pathology.

Besides, she recently opened a new line of research aiming at isolating and characterizing biological control agents, mainly for the control of fungal diseases of grapevine.

## COORDINATION OR SCIENTIFIC RESPONSIBILITY OF GRANTED PROJECTS

2024- **Bando Ricerca e Sviluppo 2024** – Fondazione Caritro – “Development of nanopesticides and nanobiofertilizers using an innovative delivery platform” – **Project coordinator** – Project budget 119.750 €

2022- PRIMA CALL SECTION 2 2021 – MULTI-TOPIC - Italian Ministry of University and Research – “Ecological survey for biological management and protection of Mediterranean vineyards facing climate changes - **National Unit scientific coordinator and WP1 leader** – Project budget 868.000 €

2021-2024 **Bando Ricerca e Sviluppo 2020** – Fondazione Cariverona – “Development of nanoemulsions of natural origin displaying antimicrobial activity for plant protection: from the laboratory to the field” – **Project coordinator** – Project budget 93.750 €

2019-2022 **Joint Project 2018** - University of Verona and Adriatica Spa – “Identification of new strategies for the efficient control of kiwifruit bacterial canker and molecular characterization of their mode of action” – **Project coordinator** – Project budget 140.000 €

2017-2020 **ARIMNet2 (Coordination of Agricultural Research in the Mediterranean) / 7<sup>th</sup> framework program** - Italian Ministry of Agriculture - NANOBIOAGRI “Plant disease biocontrol by means of non-infectious biodegradable proteinaceous nanoparticles” – **International Coordinator**, Project budget 591.000 €

2016-2018 **Joint Project 2015** - University of Verona and Vivai Righi - “Production and evaluation of proteinaceous nanobioparticles based on antimicrobial peptides for plant disease control” - - **Project coordinator**, Project budget 95.500 €

2015-2017 **Joint Project 2014** - University of Verona and Istituto Di Ricerche Biotecnologiche S.P.A (Italy) - “Characterization of the regulation of plant secondary metabolism by NO and application for industrial production of plant active compounds” - **Project coordinator**, Project budget 50.000 €

2012-2015 **FIRB 2010 (Futuro in Ricerca)** - Italian Ministry of University and Research - “Cyclic nucleotides in plant response to biotic stress (RBFR10S1LJ) -- **Operative Unit scientific coordinator**, Project budget 893.000 €

## PATENTS

Polverari A, **Vandelle E** "Inibitori naturali dell'espressione del gene batterico *HrpA1* di *Pseudomonas syringae* pathovar *actinidiae*", Italian patent n. 102017000119674 obtained the 11<sup>th</sup> of February 2020

Danzi D, Zampieri R, Avesani L, **Vandelle E** “Nanoparticelle capsidiche di virus del mosaico del fagiolo dall'occhio prive di materiale genetico per il trattamento di una malattia della parte aerea di una pianta”, request No. 102020000029498 presented in Italy 02/12/2020 and extended at European level 02/12/2021.

## EDITORIAL AND PEER REVIEWING ACTIVITIES

-**Associate Editor** for the section Plant Pathogen Interactions of *Frontiers in Plant Sciences* and *Frontiers in Microbiology*

- Guest Associate Editor** of the Special Issue “Molecular Mechanisms of Pathogenicity and Virulence in Phytopathogenic Bacteria” of the journal *Pathogens*
- Guest Associate Editor** for the topic “Applications of Next Generation Sequencing to Unravel Horticultural Crop Responses and Adaptation to Environmental Stresses” in the section Technical Advances in Plant Science and Crop and Product Physiology of the journal *Frontiers in Plant Science*
- Review panel member** for grant proposal evaluation for the National Science Center (Narodowe Centrum Nauki - NCN), Poland
- External Reviewer** for Environmental Science and Pollution Research, FEBS Letter, Free Radical Biology and Medicine, Frontiers in Microbiology, Frontiers in Plant Science, Functional Plant Biology, Journal of the American Chemical Society, Molecular Plant-Microbe Interactions, Nitric Oxide, Phytochemistry, Plant Biology, Plant Cell and Environment, Plant Physiology, Plant Physiology and Biochemistry, Plant Science, Plant Signaling and Behaviour, Phytochemistry, The Plant Journal, Scientific Reports

## SCIENTIFIC SOCIETY

2020-2023      Member of the Elected Board of the Italian Society of Plant Pathology  
 Since 2014-      Member of the Italian Society of Plant Pathology

## PUBLICATIONS

### A – Overview of scientific publications in international, peer-reviewed journals and book chapters:

EV published 41 *in extenso* articles in international peer-reviewed journals and 5 book chapters (4 in english and 1 in Italian).

### B – Citations and Scientific production statistics:

2224 citations with H-index=20 in Scopus.

Scopus Author ID: 24465909900; ORCID Author ID: 0000-0002-4205-6331

### C – List of scientific publications

1. Meynaud S, Danzi D, **Vandelle E\***, Gardrat C, Coloma F, Morris C, Coma V (2025) Chitosan and carboxylic acids, impact on membrane permeability and DNA integrity of *Pseudomonas syringae*: interest for biocontrol applications. *Chem. Biol. Technol. Agric.*, 12:76, DOI: 10.1186/s40538-025-00783-1. \*co-corresponding author
2. Danzi D, Thomas M, Cremonesi S, Sadeghian F, Staniscia G, Andreolli M, Bovi M, Polverari A, Tosi L, Bonaconsa M, Lampis S, Spinelli F, **Vandelle E** (2025) Essential oil-based emulsions reduce bacterial canker on kiwifruit plants acting as antimicrobial and antivirulence agents against *Pseudomonas syringae* pv. *actinidiae*. *Chem. Biol. Technol. Agric.* 12, 23. <https://doi.org/10.1186/s40538-025-00743-9>
3. Danzi D, Cremonesi S, Thomas M, Bovi M, Polverari A, Tosi L, Bonaconsa M, Lampis S, Spinelli F, **Vandelle E\*** (2025) Split to multiply: evaluation of essential oil emulsion efficacy against *Pseudomonas syringae* pv. *actinidiae*. *Acta Hort.*, DOI: 10.17660/ActaHortic.2025.1431.32
4. Correia C, Cellini A, Donati I, Voulgaris P, Obafemi AE, Soriato E, **Vandelle E**, Santos C, Spinelli F (2025) *Pseudomonas azotoformans* and *Pseudomonas putida*: Novel kiwifruit-native biological control agents

against *Pseudomonas syringae* pv. *actinidiae*. Biological control, 201:105706, <https://doi.org/10.1016/j.biocontrol.2025.105706>

- 5. Ramirez N, Caullireau E, Sigurbjörnsdóttir M A, **Vandelle E**, Vilhelmsson O, Morris C (2024) From lichens to crops: Pathogenic potential of *Pseudomonas syringae* from *Peltigera* lichens is similar to worldwide epidemic strains. *Plant Pathol.*, 73(7):1947-1956, 10.1111/ppa.13915
- 6. Prada J, Dinis L-T, Soriato E, **Vandelle E**, Soletkin O, Uysal S, Dlhazi A, Santos C, Santo J (2024) Climate change impact on Mediterranean viticultural regions and site-specific climate risk-reduction strategies. *Mitigation and Adaptation Strategies for Global Changes*, article number 52, 10.1007/s11027-024-10146-0
- 7. Foresti C, Orduna L, Matus JT, **Vandelle E**, Danzi D, Bellon O, Tornielli GB, Amato A, Zenoni S (2024) NAC61 regulates late- and post-ripening osmotic, oxidative, and biotic stress responses in grapevine. *J. Exp. Bot.*, 10.1093/jxb/erad507
- 8. Soriato E, Gatta M, Danzi D, Casagrande M, Cerrato A, Cucchi F, **Vandelle E\*** (2024) Characterization of autochthonous biological control agents for pear protection against the brown spot of pear disease caused by *Stemphylium vesicarium*. *J. Plant Pathol.*, 10.1007/s42161-024-01788-9 \*corresponding author
- 9. D'Incà E, Foresti C, Orduña L, Amato A, **Vandelle E**, Santiago A, Botton A, Cazzaniga S, Bertini E, Pezzotti M, Giovannoni JJ, Vrebalov JT, Matus JT, Tornielli GB, Zenoni S. (2023) The transcription factor VviNAC60 regulates senescence- and ripening-related processes in grapevine. *Plant Physiol.*, 192(3):1928-1946.
- 10. Puttilli MR, Danzi D, Correia C, Brandi J, Cecconi D, Manfredi M, Marengo E, Santos C, Spinelli F, Polverari A, **Vandelle E\*** (2022) Plant Signals Anticipate the Induction of the Type III Secretion System in *Pseudomonas syringae* pv. *actinidiae*, Facilitating Efficient Temperature-Dependent Effector Translocation. *Microbiol. Spectr.*, 10(6):e0207322. \*corresponding author
- 11. Correia C, Magnani F, Pastore C, Cellini A, Donati I, Pennisi G, Paucek I, Orsini F, **Vandelle E**, Santos C, Spinelli F. (2022) Red and Blue Light Differently Influence *Actinidia chinensis* Performance and Its Interaction with *Pseudomonas syringae* pv. *actinidiae*. *Int. J. Mol. Sci.*, 23(21):13145.
- 12. Sangiorgio D., Spinelli F., **Vandelle E.** (2022) The unseen effect of pesticides: The impact on phytobiota structure and functions. *Front. Agronomy*, 4:936032
- 13. Cellini A., Buriani G., Correia C., Fiorentini L., **Vandelle E.**, Polverari A., Santos C., Vanneste J.L., Spinelli F. (2022) Host-specific signal perception by PsaR2 LuxR solo induces *Pseudomonas syringae* pv. *actinidiae* virulence traits. *Microbiol. Res.*, 260:127048
- 14. **Vandelle E.\***, Colombo T., Regaiolo A., Maurizio V., Libardi T., Puttilli M.-R., Danzi D., Polverari A. (2021) Transcriptional profiling of three *Pseudomonas syringae* pv. *actinidiae* biovars reveals different responses to apoplast-like conditions related to strain virulence on the host. *Mol. Plant-Microbe Interact.*, 34(4):376-396. \*corresponding author
- 15. **Vandelle E.\***, Ariani P., Regaiolo A., Danzi D., Lovato A., Zadra C., Vitulo N., Gambino G., Polverari A (2021) The grapevine E3 ubiquitin ligase VriATL156 confers resistance against the downy mildew pathogen *Plasmopara viticola*. *Int. J. Mol. Sci.*, 22(2):1-19 \*co-corresponding author
- 16. Pezzotti G, Fujita Y, Boschetto F, Zhu W, Marin E, **Vandelle E**, McEntire B.J, Bal S.B, Giarola M, Makimura K, Polverari A (2020) Activity and Mechanism of Action of the Bioceramic Silicon Nitride as an Environmentally Friendly Alternative for the Control of the Grapevine Downy Mildew Pathogen *Plasmopara viticola*. *Front. Microbiol.*, doi: 10.3389/fmicb.2020.610211

17. Cellini A, Donati I, Fiorentini L, **Vandelle E**, Polverari A, Venturi V, Buriani G, Vanneste J.L, Spinelli F (2020) N-Acyl Homoserine Lactones and Lux Solos Regulate Social Behaviour and Virulence of *Pseudomonas syringae* pv. *actinidiae*. *Microb. Ecol.*, doi: 10.1007/s00248-019-01416-5.
18. Lovato A, Pignatti A, Vitulo N, **Vandelle E\*** and Polverari A (2019) Inhibition of virulence-related traits in *Pseudomonas syringae* pv. *actinidiae* by gunpowder green tea extracts. *Front. Microbiol.*, doi:10.3389/fmicb.2019.02362. \*co-corresponding author
19. Heloir M.C, Adrian M, Brûlé D, Claverie J, Cordelier S, Daire X, Dorey S, Gauthier A, Lemaître-Guillier C, Negrel J, Trdá L, Trouvelot S, **Vandelle E**, Poinsot B (2019). Recognition of elicitors in grapevine: from MAMP and DAMP perception to induced resistance. *Front. Plant Sci.*, doi:10.3389/fpls.2019.01117.
20. Lovato A, Zenoni S, Tornielli G.B, Colombo T, **Vandelle E\***, Polverari A (2019) Specific molecular interactions between *Vitis vinifera* and *Botrytis cinerea* are required for noble rot development in grape berries. *Postharvest Biol. Technol.*, 156, 110924. \*co-corresponding author
21. Lovato A, Zenoni S, Tornielli G.B, Colombo T, **Vandelle E\***, Polverari A (2019) Plant and fungus transcriptomic data from grapevine berries undergoing artificially-induced noble rot caused by *Botrytis cinerea*. *Data in Brief*, 25,104150. \*co-corresponding author
22. Sabetta W, **Vandelle E\***, Locato V, Costa A, Cimini S, Bittencourt Moura A, Luoni L, Graf A, Viggiano L, De Gara L, Bellin D, Blanco E and de Pinto MC (2019) Genetic buffering of cyclic AMP in *Arabidopsis thaliana* compromises the plant immune response triggered by an avirulent strain of *Pseudomonas syringae* pv. *tomato*. *Plant J.*, doi: 10.1111/tpj.14275. \*first co-author
23. Ariani P, **Vandelle E\***, Wong D, Giorgetti A, Porceddu A, Camiolo S and Polverari A (2017) Comprehensive Workflow for the Genome-wide Identification and Expression Meta-analysis of the ATL E3 Ubiquitin Ligase Gene Family in Grapevine. *J. Vis. Exp.*, 130. doi: 10.3791/56626. \*first co-author and co-corresponding author
24. Ling T, Bellin D, **Vandelle E**, Imanifard Z and Delledonne M (2017) Host-Mediated S-Nitrosylation Disarms the Bacterial Effector HopA1 to Reestablish Immunity. *Plant Cell*, 29(11):2871-2881.
25. **Vandelle E\***, Puttilli MR, Chini A, Devescovi G, Venturi V and Polverari A. (2017) Application of chemical genomics to plant–bacteria communication: a high-throughput system to identify novel molecules modulating the induction of bacterial virulence genes by plant signal. *Methods Mol. Biol.*, 1610:297-314. \*co-corresponding author
26. Ariani P, Regaiolo A, Lovato A, Giorgetti A, Porceddu A, Camiolo S, Wong D, Castellarin S, **Vandelle E\*** and Polverari A. (2016) Genome-wide characterisation and expression profile of the grapevine ATL ubiquitin ligase family reveal biotic and abiotic stress-responsive and development-related members. *Sci Rep.*, 6:38260. doi: 10.1038/srep38260. \*co-corresponding author
27. Hussain J, Chen J, Locato V, Sabetta W, Behera S, Cimini S, Griggio F, Martínez-Jaime S, Graf A, Bouneb M, Pachaiappan R, Fincato P, Blanco E, Costa A, De Gara L, Bellin D, de Pinto MC and **Vandelle E.\*** (2016) Constitutive cyclic GMP accumulation in *Arabidopsis thaliana* compromises systemic acquired resistance induced by an avirulent pathogen by modulating local signals. *Sci Rep.*, 6:36423. doi: 10.1038/srep36423. \*co-corresponding author
28. Bellin D, Delledonne M and **Vandelle E.\*** (2016) Detection of Peroxynitrite in Plants Exposed to Bacterial Infection. *Methods Mol. Biol.*, 1424:191-200. doi: 10.1007/978-1-4939-3600-7\_16. \*corresponding author
29. **Vandelle E**, Ling T, Imanifard Z, Liu R, Delledonne M and Bellin D (2016) Nitric oxide signaling during the hypersensitive disease resistance response. *Adv. Bot. Res.*, 77:219-243.

30. Chen J, **Vandelle E\***, Bellin D and Delledonne M. (2014) Detection and function of nitric oxide during the hypersensitive response in *Arabidopsis thaliana*: Where there's a will there's a way. *Nitric Oxide*. pii: S1089-8603(14)00253-5. doi: 10.1016/j.niox.2014.06.008. \*first co-author

31. **Vandelle E** and Delledonne M (2011) Peroxynitrite formation and function in plants. *Plant Science*, doi:10.1016/j.plantsci.2011.05.002.

32. Vatsa P, Chiltz A, Luini E, **Vandelle E**, Pugin A and Roblin G. (2011) Cytosolic calcium rises and related events in ergosterol-treated *Nicotiana* cells. *Plant Physiol. Biochem.*, 49:764-773.

33. Gaupels F, **Spiazzi-Vandelle E\***, Yang D and Delledonne M (2011) Detection of peroxynitrite accumulation in *Arabidopsis thaliana* during the hypersensitive defense response. *Nitric Oxide*, doi:10.1016/j.niox.2011.01.009. \*first co-author

34. Leitner M, **Vandelle E**, Bellin D, Gaupels F and Delledonne M (2009) NO signals in the haze: Nitric oxide signalling in plant defence. *Curr. Opin. Plant Biol.*, 12:1-8.

35. Cecconi D, Orzetti S, **Vandelle E**, Rinalducci S, Zolla L and Delledonne M (2009) Protein nitration during defense response in *Arabidopsis thaliana*. *Electrophoresis*, 30:1-9.

36. **Vandelle E** and Delledonne M (2008) Methods for nitric oxide detection during plant-pathogen interactions. *Meth. Enzymol.*, 437:575-94.

37. Romero-Puertas MC, Laxa M, Mattè A, Zaninotto F, Finkemeier I, Jones AME, Perazzolli M, **Vandelle E**, Dietz KJ and Delledonne M (2007) S-nitrosylation of peroxiredoxin II E promotes peroxynitrite-mediated tyrosine nitration. *The Plant Cell*, 19:4120-30.

38. Garcia-Brunner A, Lamotte O, **Vandelle E**, Bourque S, Lecourieux D, Poinsot B, Wendehenne D and Pugin A (2006) Signaling pathways activated by elicitors of plant defenses. *Mol. Plant Microbe Interact.*, 19:711-724.

39. Kunz C, **Vandelle E**, Rolland S, Poinsot B, Bruel C, Cimerman A, Zotti C, Moreau E, Vedel R, Pugin A and Boccardo M (2006) Characterization of a new, non-pathogenic mutant in *Botrytis cinerea* with impaired plant colonisation capacity. *New Phytol.*, 170:537-550.

40. **Vandelle E**, Poinsot B, Wendehenne D, Bentéjac M and Pugin A (2006) Integrated signaling network involving calcium, nitric oxide, active oxygen species but not mitogen-activated protein kinases in BcPG1-elicited grapevine defenses. *Mol. Plant Microbe Interact.*, 19:429-440.

41. Poinsot B, **Vandelle E**, Bentéjac M, Adrian M, Levis C, Brygoo Y, Garin J, Sicilia F, Coutos-Thévenot P and Pugin A (2003) The endopolygalacturonase 1 from *Botrytis cinerea* activates grapevine defence reactions unrelated to its enzymatic activity. *Mol. Plant Microbe Interact.*, 16(6):553-64.