

Alma Balestrazzi - Elenco pubblicazioni

Selected Publications on “peer-review” journals (2010-2017)

1. Nikitaki Z, Pavlopoulou A, Holá M, Donà M, Michalopoulos I, Balestrazzi A, Angelis K, Georgakilas AG. Bridging plant and human radiation response and DNA repair through an *in silico* approach. *Cancers*, 2017. doi: 10.3390/cancers9060065
2. Donà M, Sabatini ME, Biggiogera M, Confalonieri M, Minio A, Delledonne M, Giraffa G, Carbonera D, Araujo S, Balestrazzi A. *MtTdp1alpha*-depleted *Medicago truncatula* plants show reduced cuticle permeability and altered expression of defense genes. *Biologia Plantarum*, 2017, 61: 192-196.
3. Zani D, Dondi D, Araujo A, Mondoni A, Balestrazzi A. Impact of gamma rays on seed germination/short-term storage in four native alpine species: correlation with free radical and antioxidant profiles. *Radiation Physics and Chemistry*, 2017, 131: 86-94.
4. Macovei A, Pagano A, Leonetti P, Carbonera D, Balestrazzi A, Araújo S. Systems biology approaches to unveil the molecular players involved in the pre-germinative metabolism: implications on seed technology traits. *Plant Cell Reports*, 2016, 36: 669-688.
5. Araujo SS, Balestrazzi A, Faè M, Morano M, Carbonera D, Macovei A. *MtTdp2a*-overexpression boosts the growth phase of *Medicago truncatula* cell suspension and increases the expression of key genes involved in antioxidant response and genome stability. *Plant Cell, Tissue and Organ Culture*, 2016, 127: 675-680.
6. Macovei A, Sahoo R, Faè M, Balestrazzi A, Carbonera D, Tuteja N. Overexpression of PDH45 and SUV3 helicases in rice leads to delayed leaf senescence-associated events. *Protoplasma*, 2016, 254: 1103-1113.
7. Araujo S, Paparella S, Bentivoglio A, Dondi D, Carbonera D, Balestrazzi A. Physical methods for seed invigoration: advantages and challenges in seed technology. *Frontiers in Plant Science*, 2016, 7: 1-12. ISSN: 1664-462X.
8. Balestrazzi A, Achary VMM, Macovei A, Yoshiyama KO, Sakamoto AN. Editorial: Maintenance of genome integrity: DNA damage sensing, signaling, repair and replication in plants. *Frontiers in Plant Science*, 2016; 6: 64.
9. Sabatini ME, Donà M, Leonetti P, Minio A, Delledonne M, Carbonera D, Confalonieri M, Giraffa G, Balestrazzi A. Depletion of tyrosyl-DNA Phosphodiesterase 1 alpha (*MtTdp1alpha*) affects transposon expression in *Medicago truncatula*. *Journal of Integrative Plant Biology*, 2015; 58: 618-622.
10. Murgia I, Giacometti S, Balestrazzi A, Paparella S, Pagliano C, Morandini P. Analysis of the transgenerational iron deficiency stress memory in *Arabidopsis thaliana* plants. *Frontiers in Plant Sciences*, 2015; 6: 745.
11. Paparella S, Araujo S, Rossi G, Wijayasinghe M, Carbonera D, Balestrazzi A. Seed priming: state of the art and new perspectives. *Plant Cell Reports*, 2015; 34: 1281-1293.
12. Paparella S, Tava A, Avato P, Biazzi E, Macovei A, Biggiogera M, Carbonera D, Balestrazzi A. Cell wall integrity, genotoxic injury and PCD dynamics in alfalfa saponin-treated white poplar cells highlight a complex link between molecule structure and activity. *Phytochemistry*, 2015; 111: 114-123.
13. Balestrazzi A, Donà M, Macovei A, Sabatini ME, Pagano A, Carbonera D. DNA repair and telomere maintenance during seed imbibition: correlation of transcriptional patterns. *Telomere and Telomerase*, 2015; 2: e496.
14. Balestrazzi A, Giovannini A, Dondi D, Sabatini ME, Carbonera D, Buttafava A. Exploring the molecular and chemical-physical aspects of low-dose irradiation using radio-tolerant plant cells. *Radiation Protection Dosimetry*, 2015; 2015: 1-4.
15. Balestrazzi A, Carbonera D, Avato P, Tava A. White poplar (*Populus alba* L.) suspension cultures as a model system to study apoptosis induced by alfalfa saponins. *Anti-Cancer Agents in Medicinal Chemistry* 2014; 14: 1324-1331.
16. Faè M, Balestrazzi A, Confalonieri M, Donà M, Macovei A, Valassi A, Giraffa G, Carbonera D. Copper-mediated genotoxic stress is attenuated by the overexpression of the DNA

- repair gene *MtTdp2a* (tyrosyl-DNA phosphodiesterase 2 alpha) in *Medicago truncatula* plants. *Plant Cell Reports* 2014; 33: 1071-1080.
17. Mondoni A, Orsenigo S, Donà M, Balestrazzi A, Probert R, Hay FR, Abeli T. Environmental-induced transgenerational changes in seed longevity: maternal and genetic influence. *Annals of Botany* 2014; 113: 1257-1263.
 18. Santos AR, Miguel AS, Macovei A, Maycock C, Balestrazzi A, Oliva A, Fevereiro P. CdSe/ZnS Quantum Dots trigger DNA repair and antioxidant enzyme systems in *Medicago sativa* cells in suspension culture. *BMC Biotechnology* 2014; 13: 111.
 19. Macovei A, Garg B, Raikwar S, Balestrazzi A, Carbonera D, Buttafava A, Bremont JFJ, Gill SS, Tuteja N. Synergistic exposure of rice seeds to different doses of gamma-ray and salinity stress resulted in increased antioxidant enzyme activities and gene-specific modulation of TC-NER pathway. *Biomed Research International* 2014; 2014:1-15.
 20. Donà M, Ventura L, Balestrazzi A, Buttafava A, Carbonera D, Confalonieri M, Giraffa G, Macovei A. Dose-dependent reactive species accumulation and preferential double strand breaks repair are featured in the gamma-ray response in *Medicago truncatula* cells. *Plant Molecular Biology Reporter* 2014; 32: 129-141.
 21. Donà M, Confalonieri M, Minio A, Biggiogera M, Buttafava A, Raimondi E, Delledonne M, Ventura L, Sabatini ME, Macovei A, Giraffa G, Carbonera D, Balestrazzi A. RNA-Seq analysis discloses early senescence and nucleolar dysfunction triggered by *Tdp1a* depletion in *Medicago truncatula*. *Journal of Experimental Botany* 2013; 64: 1941-1951.
 22. Confalonieri M, Faè M, Balestrazzi A, Donà M, Macovei A, Valassi A, Giraffa G, Carbonera D. Enhanced osmotic stress tolerance in *Medicago truncatula* plants overexpressing the DNA repair gene *MtTdp2a* (tyrosyl-DNA phosphodiesterase 2). *Plant Cell, Tissue and Organ Culture* 2013; 116: 187-203.
 23. Donà M, Macovei A, Faè M, Carbonera D, Balestrazzi A. Plant hormone signaling and modulation of DNA repair under stressful conditions. *Plant Cell Reports* 2013; 32: 1043-1052.
 24. Ventura L, Giovannini A, Savio M, Donà M, Macovei A, Buttafava A, Carbonera D, Balestrazzi A. Single cell gel electrophoresis (Comet) assay with plants: research on DNA repair and ecogenotoxicity testing. *Chemosphere* 2013; 92:1-9.
 25. Donà M, Ventura L, Macovei A, Confalonieri M, Savio M, Giovannini A, Carbonera D, Balestrazzi A. Gamma irradiation with different dose rates induces different DNA damage responses in *Petunia x hybrida* cells. *Journal of Plant Physiology* 2013; 170: 780-787.
 26. Donà M, Balestrazzi A, Mondoni A, Rossi G, Ventura L, Buttafava A, Macovei A, Sabatini ME, Valassi A, Carbonera D. DNA profiling, telomere analysis and antioxidant properties as tools for monitoring *ex situ* seed longevity. *Annals of Botany* 2013; 111: 987-998.
 27. Ventura L, Macovei A, Donà M, Paparella S, Buttafava A, Giovannini A, Carbonera D, Balestrazzi A. Genotoxic effects due to in vitro culture and H₂O₂ treatments in *Petunia x hybrida* cells monitored through DNA diffusion assay, FPG-SCGE and gene expression profile analyses. *Acta Physiologiae Plantarum* 2013; 36: 331-341.
 28. Ventura L, Donà M, Macovei A, Carbonera D, Buttafava A, Mondoni A, Rossi G, Balestrazzi A. Recent advances in understanding the molecular pathways associated with seed vigor: role of DNA repair. *Plant Physiology and Biochemistry* 2012; 60: 196-206.
 29. Bonadei M, Zelasco S, Giorcelli A, Gennaro M, Calligari P, Quattrini E, Carbonera D, Balestrazzi A. Transgene stability and agronomical performance of two transgenic Basta®-tolerant lines of *Populus alba* L. *Plant Biosystems* 2012, 146: 33-40.
 30. Balestrazzi A, Macovei A, Tava A, Avato P, Raimondi E, Carbonera D. Unraveling the response of plant cells to cytotoxic saponins: role of metallothionein and nitric oxide. *Plant Signaling and Behavior* 2011; 6: 1-4.
 31. Balestrazzi A, Confalonieri M, Macovei A, Donà M, Carbonera D. Genotoxic stress and DNA repair in plants: emerging functions and tools for improving crop productivity. *Plant Cell Reports* 2011, 30: 287-295.
 32. Balestrazzi A, Agoni V, Tava A, Avato P, Biazzi E, Raimondi E, Macovei A, Carbonera D. Cell death induction and nitric oxide biosynthesis in white poplar (*Populus alba* L.) suspension cultures exposed to alfalfa saponins. *Physiologia Plantarum* 2011; 141: 227-238.

33. Macovei A, Balestrazzi A, Confalonieri M, Buttafava A, Carbonera D. The *TFIIS* and *TFIIS-like* genes from *Medicago truncatula* are involved in oxidative stress response. *Gene* 2011; 470: 20-30.
34. Macovei A, Balestrazzi A, Confalonieri M, Faè M, Carbonera D. New insights on the barrel medic *MtOGG1* and *MtFPG* functions in relation to oxidative stress response *in planta* and during seed imbibition. *Plant Physiology and Biochemistry* 2011; 49: 1040-1050.
35. Balestrazzi A, Confalonieri M, Macovei A, Carbonera D. Seed imbibition in *Medicago truncatula* Gaertn.: expression profiles of DNA repair genes in relation to PEG-mediated stress. *Journal of Plant Physiology* 2010, 168: 706-713.
36. Balestrazzi A, Bonadei M, Zelasco S, Giorcelli A, Gennaro M, Calligari P, Mattivi F, Quattrini E, Carbonera D. Seasonal and tissue-specific transgene expression and resveratrol-3-glucoside (piceid) accumulation in genetically modified white poplars carrying the grapevine *StSy* gene. *Plant Cell, Tissue and Organ Culture* 2010; 105: 1-8.
37. Confalonieri M, Borghetti R, Macovei A, Testoni C, Carbonera D, Fevereiro MPS, Rommens C, Swords K, Piano E, Balestrazzi A. Backbone-free transformation of barrel medic (*Medicago truncatula*) with a *Medicago*-derived transfer DNA. *Plant Cell Reports* 2010; 29: 1013-1021.
38. Macovei A, Balestrazzi A, Confalonieri M, Carbonera D. The *Tdp1* (Tyrosyl-DNA phosphodiesterase) gene family in barrel medic (*Medicago truncatula* Gaertn.): bioinformatic investigation and expression profiles in response to copper- and PEG-mediated stress. *Planta* 2010; 232: 393-407.
39. Bonadei M, Calvio C, Carbonera D, Galizzi A, Quattrini E, Balestrazzi A. Spore-forming bacteria in soil cultivated with GM white poplars: isolation and characterization. *Folia Microbiologica* 2010; 55: 39-46.
40. Balestrazzi A, Locato V, Bottone MG, De Gara L, Biggiogera M, Pellicciari C, Botti S, Di Gesù D, Donà M, Carbonera D. Response to UV-C radiation in topo I-deficient carrot cells with low ascorbate levels. *Journal of Experimental Botany* 2010; 61: 575-585.

Book chapters

1. Macovei A, Donà M, Carbonera D, Balestrazzi A. DNA diffusion assay applied to plant cells. In: "*Plant Programmed Cell Death: Methods and Protocols*" L. De Gara and V. Locato Eds. Springer-Verlag Berlin Heidelberg. In press
2. Martins D, Macovei A, Leonetti P, Balestrazzi A, Araújo SS. The influence of P-deficiency on legume symbiotic N₂ fixation. In: "*Legume Nitrogen Fixation in Soils with Low Phosphorus Availability*" S Sulieman, L-SP Tran Eds. Springer International Publishing AG 2017 41. pp. 41-75
3. Macovei A, Donà M, Carbonera D, Balestrazzi A. Plant response to genotoxic stress: a crucial role in the context of global climate change. In: "*Abiotic Stress Response in Plants*" N Tuteja and SS Gill Eds. Wiley-VCH Verlag GmbH & Co., 2015, ISBN 978-3-527-33491-9, pp 13-26.
4. Balestrazzi A, Confalonieri M, Macovei A, Donà M, Carbonera D. Genotoxic stress, DNA repair and crop productivity. In: "*Crop Improvement Under Adverse Conditions*". N Tuteja and SS Gill Eds. Springer-Verlag Berlin Heidelberg. 2013. ISBN 978-1-4614-4632-3, pp. 153-169.
5. Carbonera D, Balestrazzi A, Confalonieri M, Ressegotti V. OGM e sterilità: produzione di piante transgeniche di pioppo a basso impatto ambientale. In: Medici A, Grilli CM, Bernacchia G, Organismi Geneticamente Modificati. Etica, Tecnica, Norme. Ed. La Tribuna, Piacenza, 2003. pp 197-209.
6. Zelasco S, Carbonera D, Giorcelli A, Mattivi F, Bonadei M, Gennaro M, Confalonieri M, Quattrini E, Calligari P, Picco F, Deandrea G, Balestrazzi A. Evaluation of GM poplars expressing relevant traits for herbicide tolerance, disease resistance and production of pharmaceuticals: biochemical, molecular and microbiological studies on plants and detection of transgene sequences in soil. In: Biotechnology and sustainable agriculture 2006 and

- beyond. Proceedings of the 11th IAPTC&B Congress, August 13-18, Beijing, China. Xu Z, Li J, Vasil IK, Xue Y, Yang W Eds. Springer-Verlag Berlin Heidelberg, 2007, pp 413-418.
7. Balestrazzi A, Allegro G, Confalonieri M. Genetically modified trees expressing genes for insect pest resistance. In: Tree transgenesis: Recent Developments. Fladung M, Ewald D Eds. Springer-Verlag Berlin Heidelberg, 2006. pp 253-273.