

First name: Giovanni Battista
Date of birth: 27/3/1968

Family name: Torielli
Place of birth: Padova (Italy)

Curriculum vitae

1995: Degree in Agricultural Science at University of Padova, with a thesis on physiological and molecular aspects of peach fruit development and ripening.

1999: PhD at University of Padova, with thesis on the evolution of the phenolic profile and the study of phenolic-related biosynthetic gene expression during grapevine berry ripening and postharvest dehydration.

1999-2002: Post-doc position in Agricultural Genetics at the University of Verona, with research activity in the field of functional analysis of genes through transposon mutagenesis in model plant species.

2002: Researcher in Food Science and Technology at the University of Verona.

2006-2007: *Marie Curie Fellowship* at the Vrije Universiteit of Amsterdam (The Netherlands), to study the regulation of anthocyanin biosynthesis and vacuolar acidification in plant cells.

2008: Researcher of Arboriculture at the University of Verona.

2018: Associate professor of Arboriculture at the University of Verona.

Research lines:

The main research lines includes:

- functional analysis of regulators of the phenylpropanoid pathway and vacuolar acidification in grapevine;
- physiology and molecular biology of grapevine berry development;
- large scale analysis of gene expression in grapevine under different field conditions;
- study of the physical, chemical and transcriptional changes in grapes during the postharvest dehydration process.

Teaching:

- 2002-2008: **Biology** (University of Verona);
- 2007: **Viticulture** (University of Verona);
- 2008-2017: **Grapevine Ecology and Physiology** (University of Verona);
- 2004-2008: **Physiology and Processes of the Postharvest of Grapes** (University of Verona-Padova-Udine);
- 2011-2015: **Postharvest Physiology and Non-Conventional Processes in Enology** (University of Verona-Padova-Udine).

Publications:

- Negri S., Lovato A., Boscaini F., Salvetti E., Torriani S., Commisso M., Danzi R., Ugliano M., Polverari A., Tornielli G.B., Guzzo F. (2017) The Induction of Noble Rot (*Botrytis cinerea*) Infection during Postharvest Withering Changes the Metabolome of Grapevine Berries (*Vitis vinifera* L., cv. Garganega). *Front Plant Sci.* 8:1002.
- Massonnet M., Fasoli M., Tornielli G.B., Altieri M., Sandri M., Zuccolotto P., Paci P., Gardiman M., Zenoni S., Pezzotti M. (2017) Ripening Transcriptomic Program in Red and White Grapevine Varieties Correlates with Berry Skin Anthocyanin Accumulation. *Plant Physiol.* 174(4):2376-2396.
- Pastore C., Dal Santo S., Zenoni S., Movahed N., Allegro G., Valentini G., Filippetti I., Tornielli G.B. (2017) Whole Plant Temperature Manipulation Affects Flavonoid Metabolism and the Transcriptome of Grapevine Berries. *Front Plant Sci.* 8:929
- Zenoni S., Dal Santo S., Tornielli G.B., D'Inca E., Filippetti I., Pastore C., Allegro G., Silvestroni O., Lanari V., Pisciotto A., Di Lorenzo R., Palliotti A., Tombesi S., Gatti M., Poni S. (2017) Transcriptional Responses to Pre-flowering Leaf Defoliation in Grapevine Berry from Different Growing Sites, Years, and Genotypes. *Front Plant Sci.* 8:630.
- Matus JT, Cavallini E, Loyola R, Höll J, Finezzo L, Dal Santo S, Vialet S, Commisso M, Roman F, Schubert A, Alcalde JA, Bogs J, Ageorges A, Tornielli GB, Arce-Johnson P. (2017) A group of grapevine MYBA transcription factors located in chromosome 14 control anthocyanin synthesis in vegetative organs with different specificities compared with the berry color locus. *Plant J.* 91, 220–236.
- Amato A., Cavallini E., Zenoni S., Finezzo L., Begheldo M., Ruperti B., Tornielli G.B. (2017) A Grapevine TTG2-Like WRKY Transcription Factor Is Involved in Regulating Vacuolar Transport and Flavonoid Biosynthesis. *Front Plant Sci.* 7:1979.
- Zenoni S., Fasoli M., Guzzo F., Dal Santo S., Amato A., Anesi A., Commisso M., Herderich M., Ceoldo S., Avesani L., Pezzotti M., Tornielli G.B. (2016) Disclosing the Molecular Basis of the Postharvest Life of Berry in Different Grapevine Genotypes. *Plant Physiol.* 172(3):1821-1843.
- Dal Santo S., Palliotti A., Zenoni S., Tornielli G.B., Fasoli M., Paci P., Tombesi S., Frioni T., Silvestroni O., Bellincontro A., D'Onofrio C., Matarese F., Gatti M., Poni S., Pezzotti M. (2016) Distinct transcriptome responses to water limitation in isohydric and anisohydric grapevine cultivars. *BMC Genomics.* 17(1):815.
- Loyola R, Herrera D, Mas A, Wong DC, Höll J, Cavallini E, Amato A, Azuma A, Ziegler T, Aquea F, Castellarin SD, Bogs J, Tornielli GB, Peña-Neira A, Czemmel S, Alcalde JA, Matus JT, Arce-Johnson P. (2016) The photomorphogenic factors UV-B RECEPTOR 1, ELONGATED HYPOCOTYL 5, and HY5 HOMOLOGUE are part of the UV-B signalling pathway in grapevine and mediate flavonol accumulation in response to the environment. *J Exp Bot.* 67(18):5429-5445.
- Dal Santo S, Fasoli M, Negri S, D'Inca E, Vicenzi N, Guzzo F, Tornielli GB, Pezzotti M, Zenoni S. (2016) Plasticity of the Berry Ripening Program in a White Grape Variety. *Front Plant Sci.* 7:970.
- Salveti E, Campanaro S, Campedelli I, Fracchetti F, Gobbi A, Tornielli GB, Torriani S, Felis GE. (2016) Whole-Metagenome-Sequencing-Based Community Profiles of *Vitis vinifera* L. cv. Corvina Berries Withered in Two Post-harvest Conditions. *Front Microbiol.* 7:937.
- Wong DC, Schlechter R, Vannozzi A, Höll J, Hmam I, Bogs J, Tornielli GB, Castellarin SD, Matus JT. (2016) A systems-oriented analysis of the grapevine R2R3-MYB transcription factor family uncovers new insights into the regulation of stilbene accumulation. *DNA Res.* 23(5), 451–466.
- Movahed N, Pastore C, Cellini A, Allegro G, Valentini G, Zenoni S, Cavallini E, D'Inca E, Tornielli GB, Filippetti I. (2016) The grapevine VviPrx31 peroxidase as a candidate gene involved in anthocyanin degradation in ripening berries under high temperature. *J Plant Res.* May;129(3):513-26.
- Rinaldo AR, Cavallini E, Jia Y, Moss SM, McDavid DA, Hooper LC, Robinson SP, Tornielli GB, Zenoni S, Ford CM, Boss PK, Walker AR. (2015) A Grapevine Anthocyanin Acyltransferase, Transcriptionally Regulated by VvMYBA, Can Produce Most Acylated Anthocyanins Present in Grape Skins. *Plant Physiol.* 169(3):1897-916.

- Anesi A, Stocchero M, Dal Santo S, Commisso M, Zenoni S, Ceoldo S, Tornielli GB, Siebert TE, Herderich M, Pezzotti M, Guzzo F. (2015) Towards a scientific interpretation of the terroir concept: plasticity of the grape berry metabolome. *BMC Plant Biol.* 15:191.
- Belli Kullán J, Lopes Paim Pinto D, Bertolini E, Fasoli M, Zenoni S, Tornielli GB, Pezzotti M, Meyers BC, Farina L, Pè ME, Mica E. (2015) miRVine: a microRNA expression atlas of grapevine based on small RNA sequencing. *BMC Genomics.* 16:393.
- Cavallini E, Matus JT, Finezzo L, Zenoni S, Loyola R, Guzzo F, Schlechter R, Ageorges A, Arce-Johnson P, Tornielli GB. (2015) The phenylpropanoid pathway is controlled at different branches by a set of R2R3-MYB C2 repressors in grapevine. *Plant Physiol.* 167: 1448–1470
- Matus J.T., Aquea F., Espinoza C., Vega A., Cavallini E., Dal Santo S., Cañón P., de la Guardia A.R., Serrano J., Tornielli G.B., Arce-Johnson P. (2014) Inspection of the Grapevine BURP Superfamily Highlights an Expansion of RD22 Genes with Distinctive Expression Features in Berry Development and ABA-Mediated Stress Responses. *PLoS One.* 9(10): e110372.
- Liu J., Chen N., Chen F., Cai B., Dal Santo S., Tornielli G.B., Pezzotti M., Cheng Z.M. (2014) Genome-wide analysis and expression profile of the bZIP transcription factor gene family in grapevine (*Vitis vinifera*). *BMC Genomics.* 13; 15:281.
- Cavallini E., Zenoni S., Finezzo L., Guzzo F., Zamboni A., Avesani L., Tornielli G.B. (2014) Functional diversification of grapevine MYB5a and MYB5b in the control of flavonoid biosynthesis in a petunia anthocyanin regulatory mutant. *Plant Cell Physiol.* 55(3): 517-34.
- Wang M., Vannozzi A., Wang G., Liang Y. H., Tornielli G.B., Zenoni S., Cavallini E., Pezzotti M., Cheng Z.M. (2014). Genome and transcriptome analysis of the grapevine (*Vitis vinifera* L.) WRKY gene family. *Horticulture Research*, Article number: 14016.
- Wang G., Lovato A., Liang Y.H., Wang M., Chen F., Tornielli G.B., Polverari A., Pezzotti M. and Cheng Z.M. (2014). Validation by isolation and expression analyses of the mitogen-activated protein kinase gene family in the grapevine (*Vitis vinifera* L.). *Australian Journal of Grape and Wine Research* 20(2): 255–262.
- Chen F., Fasoli M., Tornielli G.B., Dal Santo S., Pezzotti M., Zhang L., Cai B., Cheng Z.M. (2013) The evolutionary history and diverse physiological roles of the grapevine calcium-dependent protein kinase gene family. *PLoS One* 8(12): e80818.
- Dal Santo S, Tornielli GB, Zenoni S, Fasoli M, Farina L, Anesi A, Guzzo F, Delledonne M, Pezzotti M. (2013) The plasticity of the grapevine berry transcriptome. *Genome Biol.* 10;14(6):r54
- Dal Santo S, Vannozzi A, Tornielli G B, Fasoli M, Pezzotti M, Zenoni S (2013) Genome-wide Analysis of the Expansin Gene Superfamily Reveals Grapevine-specific Structural and Functional Characteristics. *PLoS One* 16;8(4):e62206.
- Zoccatelli G, Zenoni S, Savoi S, Dal Santo S, Tononi P, Zandonà V, Dal Cin A, Guantieri V, Pezzotti M, Tornielli G B (2013) Skin pectin metabolism during the post-harvest dehydration of berries from three distinct grapevine cultivars. *Australian Journal of Grape and Wine Research* 19:2.171-179.
- Pastore C, Zenoni S, Fasoli M, Pezzotti M, Tornielli G B Filippetti I (2013) Selective defoliation affects plant growth, fruit transcriptional ripening program and flavonoid metabolism in grapevine. *BMC Plant Biol.* 22;13:30
- Venturini L, Ferrarini A, Zenoni S, Tornielli GB, Fasoli M, Santo SD, Minio A, Buson G, Tononi P, Zago ED, Zamperin G, Bellin D, Pezzotti M, Delledonne M. (2013) De novo transcriptome characterization of *Vitis vinifera* cv. Corvina unveils varietal diversity. *BMC Genomics* 18;14:41.
- Fasoli M, Dal Santo S, Zenoni S, Tornielli GB, Farina L, Zmboni A, Porceddu A, Venturini L, Bicego M, Murino V, Ferrarini A, Delledonne M, Pezzotti M (2012) The grapevine expression atlas reveals a deep transcriptome shift driving the entire plant into a maturation program. *Plant Cell* 24(9): 3489-3505.
- Pastore C., Zenoni S., Tornielli G.B., Allegro G., Dal Santo S., Valentini G., Intrieri C., Pezzotti M., Filippetti I., (2011). Increasing the source/sink ratio in *Vitis vinifera* (cv Sangiovese) induces extensive transcriptome reprogramming and modifies berry ripening. *BMC Genomics* 21: 1-64.

- S. Zenoni, N. D'Agostino, G. B. Tornielli, F. Quattrocchio, M. L. Chiusano, R. Koes, J. Zethof, F. Guzzo, M. Delledonne, L. Frusciante, T. Gerats, M. Pezzotti. (2011) Revealing impaired pathways in the an11 mutant by high-throughput characterization of *Petunia axillaris* and *Petunia inflata* transcriptomes. *Plant J.* 68: 11-27.
- Dal Santo S., Fasoli M., Cavallini E., Tornielli G.B., Pezzotti M., Zenoni S., (2011) PhEXPA1, a *Petunia hybrida* expansin, is involved in cell wall metabolism and in plant architecture specification. *Plant Signaling & Behavior* 6 (12): 2031-2034.
- S. Zenoni, M. Fasoli, G.B. Tornielli, S. Dal Santo, A. Sanson, P. de Groot, S. Sordo, S. Citterio, F. Monti, M. Pezzotti. (2011). Overexpression of PhEXPA1 increases cell size, modifies cell wall polymer composition and affects the timing of axillary meristem development in *Petunia hybrida*. *New Phytologist* 191: 662-677.
- Zamboni A, Minoia L, Ferrarini A, Tornielli GB, Zago E, Delledonne M, Pezzotti M. (2008). Molecular analysis of post-harvest withering in grape by AFLP transcriptional profiling. *J Exp Bot* 59 (15): 4145-59.
- Barbanti D., Mora B., Ferrarini R., Tornielli G. B., Cipriani M. (2008). Effect of various thermo-hygrometric conditions on the withering kinetics of grapes used for the production of “Amarone” and “Recioto” wines. *Journal of Food Engineering* 85 (3): 350-358.
- Cecchetti V., Pomponi M., Altamura M.M., Pezzotti M., Marsilio S., D'Angeli S., Tornielli G.B., Costantino P., Cardarelli M. (2004). Expression of rolB in Tobacco Flowers affects the Coordinated Processes of Anther Dehiscence and Style Elongation. *Plant J.* 38 (3): 512-525.
- Castellari M., Simonato B., Tornielli G.B., Spinelli P., Ferrarini F. (2004). Effects of different enological treatments on dissolved oxygen in wines. *Italian Journal of Food Science* 16 (3): 387-396.
- Versari A., Ferrarini R., Tornielli G.B., Parpinello G.P., Gostoli C., Celotti E. (2004). Treatment of Grape Juice by Osmotic Evaporation. *Journal of Food Science* 69 (8): 422-426.
- Zenoni S., Reale L., Tornielli G.B., Lanfaloni L., Porceddu A., Ferrarini A., Moretti C., Zamboni A., Speghini A., Ferranti F., Pezzotti M. (2004). Downregulation of the *Petunia hybrida* {alpha}-Expansin Gene PhEXP1 Reduces the Amount of Crystalline Cellulose in Cell Walls and Leads to Phenotypic Changes in Petal Limbs. *Plant Cell* 16 (2): 295-308.
- Vandenbussche M., Zethof J., Souer E., Koes R., Tornielli G.B., Pezzotti M., Ferrario S., Angenonet G.C., Gerats T. (2003). Toward the analysis of the *petunia* MADS box gene family by reverse and forward transposon insertion mutagenesis approaches: B, C, and D floral organ identity functions require SEPALLATA-like MADS box genes in *petunia*. *Plant Cell* 15 (11): 2680-2693.
- Avesani L., Falorni A, Tornielli G.B., Marusic C., Porceddu A, Polverari A, Faleri C., Calcinaro F, Pezzotti M. (2003). Improved in planta expression of the human islet autoantigen glutamic acid decarboxylase (GAD65). *Transgenic Research* 12 (2): 203-212.
- Versari A., Parpinello G.P., Tornielli G.B., Ferrarini R., Giulivo C. (2001). Stilbene compounds and stilbene synthase expression during ripening, wilting, and UV treatment in grape cv. Corvina. *J Agric Food Chem.* 49(11): 5531-5536.
- Tonutti P., Bonghi C., Ruperti B., Tornielli G.B., Ramina A. (1997). Ethylene evolution and 1-aminocyclopropane-1-carboxylate oxidase gene expression during early development and ripening of peach fruit. *J Am Soc Hort Sci.* 122 (5): 642-647.

Book chapters:

- Tornielli G.B., Zamboni A., Zenoni S., Delledonne M., Pezzotti M., (2012) Transcriptomics and metabolomics for the analysis of grape berry development. In: *The Biochemistry of the Grape Berry*. Gerós H., Chaves M. & Delrot S. (Eds). Bentham. pp. 218-240.
- G. Tornielli, R.E. Koes and F.M. Quattrocchio (2009). The genetics of flower color. In: *Petunia, A Model System for Comparative Research*. Gerats T. & Strommer J. (Eds.). Springer N.Y. pp. 269-299.

Peer review activity:

-Australian Journal of Grape and Wine Research, Plant Journal, Journal of the Science of Food and Agriculture, BMC Plant Biology, BMC Genomics, Plant Physiology, Planta, American Journal of Enology and Viticulture, Plant Science, Journal of Experimental Botany, Journal of Plant Physiology, Molecular Breeding.