

PAG-XVIII Plant & Animal Genomes XVIII Conference

January 9-13, 2010
Town & Country Convention Center
San Diego, CA

P496 : Fruit Trees

Grapevine miRNAs: Towards A Structural And Functional Characterization

[Erica Mica](#)¹, [Edoardo Bertolini](#)¹, [Viviana Piccolo](#)², [David Lacourieux](#)³, [David S. Horner](#)², [M. Enrico Pè](#)¹

¹ Scuola Superiore Sant'Anna, 33 Piazza Martiri della Libertà, Pisa, 56127, Italy

² Dep of Biomolecular Sciences and Biotechnology - University of Milano, 26 via Celoria, Milano, 20133, Italy

³ UMR Ecophysiologie et Génomique Fonctionnelle de la Vigne - Institut des Sciences de la Vigne et du Vin, 210 Chemin de Leysotte, Villenave d'Ornon, 33883, France

In plants, microRNAs (miRNAs) are key post-transcriptional regulatory elements approximately 21 nt long, coded by MIRNA genes, which regulate plant architecture, nutrient homeostasis and stress response. The crucial role they play in fine tuning gene regulation clearly implies that a complete characterization of genomes structure and function cannot be attained without a deep analysis of this class of regulatory elements. Here we present the characterization of miRNA genes in grapevine, following the annotation of 140 conserved MIRNA genes (Jaillon et al., 2007). Starting from the description of their transcriptional landscape (Mica et al., 2009) we analyzed their genomic structure and interaction with putative targets. We experimentally validated primary transcript boundaries and alternative splicing events of several miRNA genes, confirming bioinformatic predictions and showing different splicing patterns and alternative transcription end points. Putative targets were identified and validated by means of 5' modified RACE experiments. We are currently focusing on target genes involved in several physiological pathways such as phenylpropanoid pathway and that, according to transcriptome analysis using oligo-chips, are up- or down-regulated in berries after light and heat stress treatments.

Return to the [Intl-PAG](#) home page.

For further assistance, e-mail help18@intl-pag.org