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Poster Communication Abstract – 5.16

VvMYB60 EXPRESSION IS RESTRICTED TO GUARD CELLS AND CORRELATES WITH STOMATAL CONDUCTANCE IN THE GRAPE LEAF

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grapevine, guard cells, MYB transcription factor, stomatal conductance

Grapevine (*Vitis vinifera* L.) is traditionally grown under non-irrigated field conditions in many cropping environments, including dry lands and semiarid regions. Good osmotic adjustment, architecture of the root system, xylem embolism and efficient stomatal control of water loss account for the drought resistance traits of the Vitis genus. Among these features, the regulation of stomatal activity is of particular relevance, as it directly shapes the isohydric versus anysohydric behaviour of different grape species and cultivars.

Increasing evidence indicates a role for the transcriptional control of gene expression in modulating stomatal responses to both biotic and abiotic stimuli. R2R3 MYB transcription factors have been identified as key regulators of stomatal opening and transpirational water loss under stress in different plant species.

We identified the grape gene *VvMYB60* (VIT_08s0056g00800) as the functional ortholog of *AtMYB60* (At1g08810), involved in the regulation of stomatal activity in Arabidopsis. Here, we report results from the analysis of *VvMYB60* expression in the grape leaf, including:

1. The qPCR analyses of stomata-enriched grape epidermal fragments and lasermicrodissected guard cells;

2. The confocal analysis of grape leaves agro-infiltrated with the *VvMYB60promoter::GFP* construct;

3. The analysis of changes in VvMYB60 expression relatively to variations in stomatal conductance (g_s) in plants grown under control or drought stress conditions.

As a whole our data confirmed the guard cell-specificity of VvMYB60 expression in the grape leaf and revealed a positive correlation between g_s and the relative abundance of the VvMYB60transcripts, thus substantiating the notion of VvMYB60 being a transcriptional mediator of stomatal activity in grape.