



Comparative analysis of MIR168 promoters in three plant species

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ABSTRACT. MicroRNAs (miRNAs) play important roles in the regulation of gene expression by post-transcriptionally targeting mRNAs for cleavage or translational repression. miR168 is a key miRNA because it regulates the expression of the slicer protein ARGONAUTE1 (AGO1), which catalyzes mRNA cleavage. Interestingly, plant miR168s are highly evolutionarily conserved; however, it is unclear whether MIR168 promoter elements and expression patterns are also conserved. Here, we isolated MIR168 promoters from monocot rice and dicot grape genomes. To determine the expression pattern, different promoters were fused to a beta-glucuronidase reporter gene and the resulting constructs were then transformed in *Arabidopsis*. The results revealed clear differences in the MIR168 promoter sequence of monocot and dicot plant species. Moreover, the pattern of MIR168 promoter expression differed between monocots and dicots. These

results suggest that, unlike that of miR168, the MIR168 promoter is not conserved in monocots and dicots.

Key words: MIR168; Promoter; Rice; Grape