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## Transcriptionally regulated gma-miR166a and its target GmPHB in two different soybean genotypes under various stresses

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As sessile organisms, plants are subjected to a wide range of abiotic and biotic stresses that affect their growth and development. Plants have evolved sophisticated adaptive responses involving reprogramming gene expression at the transcriptional, post-transcriptional and post-translational levels and microRNAs in plants have firmly established as one of the master regulator of gene expression at the posttranscriptional level that control plant development response to biotic and abiotic stress. The miR166 is one of the conserved miRNAs that exist in many dicot and monocot plant species including rice, wheat, *Arabidopsis*, soybean, etc. In this study, only Glyma09g02750 was found to be cleavage by gma-miR166 by 5' RACE among 21 putative target genes under various stresses and subsequent sequence analysis of this gene Glyma09g02750 (named GmPHB), Class III Homeo Domain Leucine Zipper (HD-ZIP) family of transcription factors is 88% similarity to *Arabidopsis* PHABULOSA. We investigated the effect of various stress on the expression of gma-miR166a and GmPHB. Gma-miR166a was induced in various stress of different soybean genotype. Quantitative real-time PCR showed that the expression of GmPHB showed a significantly inverse correlation with corresponding gma-miR166a at different time courses. In addition, there are two DREs (dehydration-responsive element) in the upstream of the gma-miR166a by sequence analysis and suggested that miR-166a expression may be regulated by CBF/DREBs. These differentially expressed miRNAs can help in further study into the role of transcriptome homeostasis in the adaptation responses of soybean resistance to abiotic stresses.

### Biography

Nang Myint completed her Master degree at Laboratory of Crop Science, Graduate School of Bioresource and Bioenvironmental Sciences, Kyushu University, Japan during 2006-2008. She worked at Myanmar Agricultural Department, Ministry of Agriculture and Irrigation, Myanmar. From 2011 till 2015 she is working as a PhD candidate at Key Laboratory of Germplasm & Biotechnology, Institute of Crop Science, Graduate School of Chinese Academy of Agricultural Sciences, Beijing, People Republic of China. There are some renowned awards on her name mentioning one is the Organization for women in Science for the Developing World (OWSD) Fellowship award (2011-present)

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