

EXPRESSION PROFILING OF THE WRKY MONOCOT-SPECIFIC CLADE IN RICE

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WRKY proteins constitute a large family of plant transcriptional factors which have been shown to be involved in a range of biological processes. They are usually classified in three main groups. In this study, we showed the existence of a monocot-specific (MCS) clade within group 3 in rice WRKY family, composed of 19 genes. Fourteen out of these 19 MCS *WRKYs* fell into three segmental duplicated blocks on chromosomes 1, 11 and 12. Several residues and/or motifs are conserved within these 19 MCS proteins.

Expression analysis indicated that some MCS *OsWRKY* genes are developmentally regulated in rice while others are not. In addition they are differentially regulated in response to several abiotic stress conditions, pathogens or parasites. In particular, the MCS *OsWRKY* genes were transcriptionally regulated upon rice blast fungus infection. Duplicated MCS *OsWRKY* genes have divergent expression profiles, likely reflecting a diversity of rice responses to environmental constraints. The MCS *WRKYs* are also poorly co-regulated among them as showed by co-regulation analysis. To conclude, we defined the existence of a monocot-specific *OsWRKY* clade with diverse transcriptional profiles supporting their role in rice specific regulatory pathways.