

Alternative Splicing of an Arabidopsis Gene, At2g24600, Encoding Ankyrin-Repeat Protein

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Abstract : In Arabidopsis, several genes encoding proteins with ankyrin repeats and trans-membrane domains (AtANKTM) have been identified as mediators of biotic and abiotic stress responses. It has been known that the expression of an AtANKTM gene, At2g24600, is induced in response to abiotic stress and that there are four splicing variants derived from this locus. In this study, by RT-PCR and sequencing analysis, an unknown splicing variant of the At2g24600 transcript was identified. Based on differences in the predicted amino acid sequences, the five splicing variants are divided into three groups. The three predicted proteins are highly homologous, yet have different numbers of ankyrin repeats and trans-membrane domains. It is generally considered that ankyrin repeats mediate protein-protein interaction and that the number of trans-membrane domains affects membrane topology of proteins. The protein variants derived from the At2g24600 locus may have different molecular functions each other.

Keywords : alternative splicing, ankyrin repeats, trans-membrane domains, arabidopsis

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