P005 Characterisation of sphingolipid metabolising enzymes in *Arabidopsis*

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Sphingolipids are a structurally diverse group of compounds which are present in eukaryotic cells. In yeast and mammals sphingolipids and their metabolites have been attracting considerable attention due to their involvement in the control of a wide range of biological processes. Recent research has shown that plants contain components in common with the animal sphingolipid signalling pathways. The sphingolipid metabolite, sphingosine-1-phosphate (S1P), has been shown to function as a calcium mobilising molecule active in guard cell drought/ABA signalling. In the current study we are further investigating the role of S1P in cell signalling by manipulating S1P levels *in planta*. Our strategy depends on manipulating the expression of genes whose products are involved in S1P metabolism. Accordingly we have cloned and characterised the genes encoding the enzymes responsible for S1P production (sphingosine kinase) and breakdown (S1P lyase and phosphatase). We have used knock-out and RNAi strategies in attempts to alter S1P levels. We describe the functional characterisation of the enzymes and report on our phenotypic analysis of the knockout and RNAi plants