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Chapter 16

Retrotransposons and the Eternal Leaves

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Abstract The resurrection plant *Craterostigma plantagineum* can tolerate up to 96% loss of its relative water content and recover within hours after rehydration. In callus tissue desiccation tolerance is induced by pre-incubation with Abscisic acid (ABA). In callus and plant ABA treatment and dehydration induce a set of dehydration-responsive genes. T-DNA activation tagging led to the identification of *CDT-1*, a dehydration- and ABA-responsive gene, which renders calli tolerant without ABA pre-incubation. Molecular analysis indicated that *CDT-1* is a retroelement, present in multiple copy in the genome, able to direct the synthesis of small RNAs responsible for desiccation tolerance. Transposition of *CDT-1*