

(8)

AUXIN CONJUGATE HYDROLYSIS DURING PLANT-MICROBE INTERACTION AND EVOLUTION

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Plants regulate auxin balance through de novo synthesis, degradation, transport and conjugation. Several genes encoding auxin conjugate hydrolases were isolated from the dicots *Arabidopsis suecica*, a close relative to *Arabidopsis thaliana*, *Brassica rapa*, a more distantly related species from the Brassicaceae, *Medicago truncatula*, a model legume, the monocot *Triticum aestivum* and the gymnosperm *Pinus taeda*. Expression of the hydrolase genes in *E. coli* allowed the biochemical characterization of substrate specificity which clearly differed among the amidohydrolases. Also, different temporal and spatial expression patterns for the hydrolase genes from various species were found. In addition, auxin conjugate hydrolases might play a role in the establishment of pathogenic or symbiotic interactions with microorganisms. We have recently started to include lower land plants, e.g. moss, in our analysis to understand how auxin homeostasis has evolved.