

## Induction of phenolic compound biosynthesis in *Hydrilla verticillata*

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Aquatic plants, like terrestrial plants, exhibit natural resistance to disease. This natural resistance often includes inducible plant defence mechanisms such as phytoalexin accumulation (i.e. phenolic compound biosynthesis). As the use of microbial biological control agents continues to emerge as a promising technology for the environmentally sensitive management of aquatic weeds, basic research designed to enhance our current understanding of plant/pathogen interactions in an aquatic system also becomes increasingly important. Many researchers of terrestrial plant/pathogen interactions have successfully used RNA blot hybridization studies to demonstrate marked accumulation of specific messenger RNA (mRNA) gene transcripts in host-plant tissue that correspond to key enzymes in phenolic compound biosynthesis. These data show that specific accumulation of plant defence gene transcripts is a key early component in the disease process. Two important enzymes in this interaction are phenylalanine ammonia lyase (PAL) and chalcone synthase (CHS). We are attempting to characterize the induction of these two genes in hydrilla in response to fungal challenge by conducting a temporal analysis of early genetic and physiological events that occur in hydrilla as a result of attempted pathogen ingress. This information can provide valuable insights concerning the relative importance of this plant defence system as it relates to microbial biocontrol of hydrilla.