

A WOUND-INDUCIBLE PROMOTER THAT DRIVES GENE EXPRESSION IN PLANTS AFTER INSECT ATTACK

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Promoters of genes that are induced by microbial pathogens, wounding and treatment with wound-signaling compound could be valuable in regulating the expression of resistance genes when plants are attacked by insects. A plant expression vector pMP4 was developed using a GUS/GFP fusion construct driven by a *Shpx6b* peroxidase gene promoter (Dr J. Manners, CRC for Tropical Plant Pathology, UQ) from a tropical forage legume *Stylosanthes humilis*. This construct was introduced into insect susceptible tobacco using *Agrobacterium tumefaciens*. Expression of *GUS* and *GFP* reporter genes in T1 transgenic tobacco leaves after infestation/treatment with chewing insects, sucking insects, the plant defense regulator MeJa, and mechanical wounding were investigated. *Gus* reporter gene levels were also assayed to quantify expression and the results were consistent with the observed histological patterns of expression. The results show that the *Shpx6b* gene promoter switches on the expression of linked genes after damage by insect herbivores, and could be useful in regulating the expression of heterologous genes for insect and /or pathogen resistance in transgenic plants.