

P-120

Soybean S-adenosylmethionine synthetase gene GmSAMS1 confers resistance to common cutworm to transgenic tobacco

*Hui Wang**, Department of Microbiology, Nanjing Agricultural University, Jiangsu, China

Rui Fan, Nanjing Agricultural University, Jiangsu, China

Xiao Li, Nanjing Agricultural University, Jiangsu, China

Sujing Wang, Nanjing Agricultural University, Jiangsu, China

Deyue Yu, Nanjing Agricultural University, Jiangsu, China

A 3737-bp soybean S-adenosylmethionine synthetase (SAMS) AMS gene, GmSAMS1, was cloned from leaves. Of the 12 soybean SAMS genes, GmSAMS1 showed the highest expression level in the leaves. The GmSAMS1 protein has three special conserved domains and was located in the cytoplasm. Eight motifs in the promoter of GmSAMS1 were related to abiotic or biotic stress responses. The relative growth rate (RGR) of common cutworm larvae was used to assess resistance of GmSAMS1 transgenic tobacco. The RGR of larvae feeding on T0 transgenic leaves was $81 \pm 98\%$, which was significantly less lower than that of larvae feeding on control leaves ($337 \pm 74\%$). The RGR of larvae feeding on T1 transgenic leaves was ranged from $203 \pm 34\%$ (24 h) to $1481 \pm 85\%$ (72 h), which is also significantly less lower than that of larvae feeding on control leaves ($280 \pm 17\%$ for 24 h and $2036 \pm 209\%$ for 72 h).