

2-8. Molecular Cloning of the cDNA for Glutathione S-transferase Gene Homologue from the Mole Cricket, *Gryllotalpa orientalis*

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The glutathione-S-transferases (GSTs) are enzymes responsible for the protection of cells from chemical toxicants and oxidative stress. In insects, GSTs have been particularly known to be implicated in the resistance to insecticides. In this study, a cDNA encoding the GST gene homologue was isolated from the cDNA library of the mole cricket, *Gryllotalpa orientalis*. The cDNA encoding GST gene homologue of *G. orientalis* is 621 base pairs long with an open reading frame of 207 amino acid residues. The deduced amino acid sequence of GST homologue of the mole cricket showed the highest homology to that of the German cockroach, *Blattella germanica* (57% of percent identity), and least homology to each one isoform of two lepidopteran species, *Helicoverpa armigera* and *Manduca sexta* (both 11% of percent identity). The phylogenetic analysis with some representative GST genes from a diverse insect showed that *G. orientalis* GST belongs to type 1 of insect GSTs. Multiple alignment of *G. orientalis* GST with several insect GSTs showed several conserved residues that may be essential for the function of the enzymatic product of the gene.