UDP-glucosyltransferases potentially contribute to the pesticide detoxication of insect parasitoids

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Abstract: *Meteorus pulchricornis* (Wesmael) (Hymenoptera: Braconidae) is a predominant endoparasitoid of lepidopteran pests in mulberry fields. Extensive application of insecticides puts natural enemies under threat.UDP-glucosyltransferases (UGTs) are important detoxification enzymes helping insects to enhance the tolerance towards insecticides. However, the exact roles of UGTs in insect parasitoids still re-main unknown. In the present study, we identified ten UGTs genes in *M. pulchricornis*, which is a preponderant parasitoid of many lepidopteran pests. qRT-PCR validation revealed that these UGTs genes were upregulated after the parasitoids exposing to phoxim, cypermethrin and chlorfenapyr. The information obtained from this study potentially suggested that UGTs play vital roles in parasitoids tolerance towards insecticides and hopefully provided useful information for the detoxification mechanisms of UGTs.

Keywords: *Meteorus pulchricornis*; UGT; insecticides; tolerance