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Abstract

The enzyme NADPH-cytochrome P450 reductase (CPR) plays a central role in cytochromes P450 activity. Gene expression analysis of cytochromes P450 and CPR in deltamethrin-resistant and susceptible populations revealed that P450s genes are involved in the development of insecticide resistance in Triatoma infestans. To clarify the role of cytochromes P450 in insecticide resistance, it was proposed to investigate the effect of CPR gene silencing by RNA interference (RNAi) in a pyrethroid resistant population of T. infestans. Silencing of the CPR gene showed a significant increase in susceptibility to deltamethrin in the population analysed. This result support the hypothesis that the metabolic process of detoxification mediated by cytochromes P450 contributes to the decreased deltamethrin susceptibility observed in the resistant strain of T. infestans.