ANTIGENIC CROSS-REACTIVITY BETWEEN ANOPHELES TESSELLATUS AND CULEX QUINQUEFASCIATUS MOSQUITO TISSUES

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Knowledge of shared antigen between different species of mosquitoes using anti-mosquito antibodies. Head/thorax, abdomen and midgut tissue from Anopheles tessellatus mosquitoes were used to immunize groups of New Zealand White rabbits. Control rabbits were immunized with phospahte buffered saline. After several immunizations, titers of antibodies in rabbit sera were determined by ELISA. The titers ranged from 10^4 to 10^{10}. Strong cross reactions between the tissue preparations of An tessellatus and Culex quinquefasciatus were detected by ELISA. The major cross reactive proteins in An tessellatus and Cu quinquefasciatus were identified by Western blotting of proteins separated by polyacrylamide gel electrophoresis.

The results showed that anti-head/thorax rabbit sera recognize major head/thorax proteins of 82, 78, 26, 19 and <16 kD in An tessellatus and 82,78, 25-20 (diffused band) and <16 in Cu Quinquefasciatus. It is likely that immunogenic proteins of similar molecular weight in head/thorax of both mosquitoes are homologous to each other. The antibodies raised against abdomen recognized major proteins of 85 and 82 kD in An tessellatus and 82 kD in Cu quinquefasciatus. The more immunogenic proteins in An tessellates midgut that were recognized by rabbit anti-midgut sera were 82,52,17 and <16 kD while in Cu quinquefaciatus same sera recognized 84 - 72 (diffused band), 26, 24 and <16 kD proteins. Considerable cross reactivity between head/thorax. abdomen and midgut in An tessellatus was also observed.

References: 1. Ramasamy, M.S. et al (1988). Medical and Veterinary Entomology. 2, 87-93.