



821/D

Analysis of antigenic salivary gland proteins of the *Armigeres subalbatus* mosquito and detection of antibodies against them in the rabbit and human

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Mosquito-borne infectious diseases are life-threatening to humans and animals. Mosquitoes play a major role in the transmission of many deadly diseases such as malaria, dengue hemorrhagic fever, Japanese encephalitis, yellow fever and filariasis. *Armigeres subalbatus* mosquitoes used in this experiment are the most common mosquito species throughout the country and a major vector of canine dirofilariasis caused by *Dirofilaria repens*. The objectives of this study were the isolation of the salivary gland proteins and characterization by SDS-PAGE and Western blotting using experimentally exposed rabbit serum and naturally exposed human serum samples collected from different localities according to the mosquito density in order to identify the specific protein fractions of *Ar. subalbatus* and to study the presence of antibodies against salivary proteins. The collection, identification and maintenance of *Ar. subalbatus* mosquito colonies in experimental cages were performed. Antibodies were raised in the rabbit against salivary proteins by experimental exposure to mosquitoes. Dissection of salivary glands of mosquitoes and extraction of proteins were carried out and protein fractions were identified using SDS-PAGE. Further antigenic protein fractions were identified by Western blotting using experimentally exposed rabbit serum. SDS-PAGE analysis of salivary gland proteins of female *Ar. subalbatus* mosquitoes revealed the presence of minimum of 10 major protein bands with the molecular masses of 241, 79, 56, 35, 22, 19, 17, 15, 10, 8, kDa. Further, Western blotting with rabbit serum showed antibodies against 79, 56, 35, 22 kDa salivary protein fractions suggesting that antibody development occurs during mosquito bites in experimentally exposed rabbits. Similarly, antibody level of human serum samples received from mosquito high density areas showed high antibody levels compared with the other. Therefore it is suggested that mosquito salivary gland antibody levels can be used to monitor mosquito density as well as to assess the risk factors for vector borne infectious diseases.