

Abstract

Separation of midgut membrane proteins from the tick, *Amblyomma variegatum*, using a nonionic detergent (Triton X-114), resulted in two protein fractions, namely DET (detergent) and AQ (aqueous). In immunoblotting analysis with polyclonal antibodies against these fractions, 4 proteins (M_r approximately 27,000, 67,000, 86,000 and 95,000,) and 2 proteins (M_r approximately 54,000 and 67,000) were detected in the DET and AQ fractions, respectively. Three of the DET fraction proteins M_r approximately 27,000, 67,000 and 95,000 were glycosylated since they bound to the lectin, concanavalin A. In 2-dimensional gel electrophoresis, the AQ and DET fraction proteins were found to be acidic in nature. In a series of bioassay experiments, rabbits were first immunised with both DET and AQ fractions and then infested with ticks. The egg batch weights of these ticks were reduced by 50% compared to control ticks. Furthermore, there was a significant reduction in the hatchability of eggs laid by ticks fed on rabbits previously immunised with both DET (14%) and AQ (33%) fractions. Based on the egg hatchability, the reproductive capacity of ticks was reduced by 77 and 48% by DET and AQ fractions, respectively.