

Abstract:

Innate immunity plays a key role in the control of microbial infections in both vertebrates and invertebrates. Haemolymph samples from *Shistocerca gregaria*, obtained after *Trypanosoma brucei brucei* challenge were analyzed for their protein profiles using SDS and 2D-PAGE and also evaluated for antitrypanosomal activity in vitro. Protein induction was found to increase with time, peaking at about 18 hours. In SDS-PAGE, the intensity levels of five polypeptides were found to vary from prechallenge levels. Further analysis of the polypeptides on 2D-PAGE showed variations in their induction pattern with some being induced, upregulated or suppressed with time of induction. Samples collected from insects challenged with parasites followed by sugars, D-glucosamine had the highest inhibitory effect on the level of protein induction while D-galactose had the least effect. When screened for trypanolytic activity against *T. brucei brucei*, the samples had pronounced antitrypanosomal activity which peaked with the 18 hour sample. Antibodies raised against *Glossina* proteolytic lectin (Gpl), showed no cross-reactivity to *Shistocerca gregaria* induced haemolymph proteins in Western blots. Antitrypanosoma proteins induced during vector-parasite interaction have the potential of being used to modulate tsetse fly vectorial capacity.