

## Detection of Proteins Induced In the Haemolymph of Biomphalaria Pfeifferi Infected with Schistosoma Mansoni.

E Okonjo<sup>1</sup>; D Yole<sup>\*1</sup>; E Korir<sup>2</sup>; E Nguu<sup>2</sup>; B Anyango<sup>3</sup> & D Ogoyi<sup>4</sup>;

1 \*Department of Applied and Technical Biology, Technical University of Kenya,

2 Department of Biochemistry, University of Nairobi,

3School of Agri-business, Jaramogi Oginga Odinga University of Agriculture, Science and Technology,

4\*Department of Biochemistry and Biotechnology, Technical University of Kenya

### Abstract

**Objectives:** Snail-schistosome interactions in relation to immunological, and biochemical changes induced in the host's tissues by the developing intramolluscan stages of the parasite form an integral part in understanding the biology of infection. This study focused on determining whether there are induced proteins in an infected snail haemolymph and to determine the cross reactivity of the proteins with antibodies raised against the cercariae and worm antigens.

**Methodology and results:** Proteomic analysis was carried out to analyze differentially expressed proteins. This was done by separation of proteins by SDS-PAGE and 2D electrophoresis on infected snail haemolymph. Later western blotting was done to check for cross reactivity of induced proteins and antibodies. The protein profiles in SDS-PAGE revealed a complex mixture of polypeptides some of which were induced or suppressed on specific days during the infection period. Separation of haemolymph proteins by 2D electrophoresis analysis revealed a progressive increase of expressed proteins during the parasite's developmental period in the snail, however there was no specific trend in distribution of the acidic or basic proteins. Finally, haemolymph proteins from infected snails and the control (uninfected) snails were not recognized by antibodies raised against S. mansoni antigens namely Soluble Worm Antigen (SWAP) and Soluble Cercariae Antigen (SCA).

**Conclusions and application of findings:** Snail- schistosome interaction leads to suppression and induction of proteins. This is important in understanding stage specific interactions of the parasite during intramolluscan development. Lack of cross reactivity was an indication that these proteins could not be used as immunogens for vaccine design.

**Key words:** Schistosomiasis, Biomphalaria pfeifferi, haemolymph, induced proteins

*Journal of Applied Biosciences Vol.88: PP 8211– 8222(2015)*

See more at: <http://www.ajol.info/index.php/jab/article/view/117646/>