



<b>Research No.</b>	<b>7</b>
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## **Contributions on trematoda-snail interactions**

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### **Abstract:**

With increasing the incidence of human *Fasciola* infection in Egypt, there had been speculations about an adoption of *Schistosoma* snail to transmit *Fasciola* infection, but the previous knowledge demonstrated more data about snail-trematode specification. For this reason the present study was designed to follow up the reaction of domestic and foreign snails for exposure to adapt or non-adapted miracidia on the tissue and cellular level. The data revealed failure of *Fasciola gigantica* and *Schistosoma mansoni* miracidia to complete their development in hosts other than *Lymnaea natalensis* (*L. cailliaudi*) or *Biomphalaria alexandrina* snails after exposure to low or high dose of miracidia. The foreign miracidia were able to penetrate the snail but the sporocysts were unable to migrate deeply in the sub-epithelial tissue of the foot. As marked specific tissue reaction was develop by the snail, trying to capsulate them. The degree and thickness of tissue reaction was increased with the increase in time post exposure till complete disappearance of the invading sporocysts. Besides, no tissue reaction and successful infection was recorded when the miracidia penetrate their specific snail host. On the cellular level, *B. alexandrina* snail haemolymph contained two types of cells as hyalinocytes (H) which related mainly to humeral type of defense and phagocytic cell called granulocyte (G), The cells were in different forms and structures related to time elapsed

post exposure to infection. G-3 was actively divided cell detected in infected snail only. *L. natalensis* and *Physa acuta* contained granulocytes (amoebocyte) in HL and 3 connective tissue related cells as C.T. amebocytes, pore cell and granular cell. Amoebocyte is phagocytic cell showing morphological and numeral changes in relation to exposure of the snail for infection by different miracidia. Granulocytes in *P. acuta* were trapped close to foot epithelium and between C.T. matrix and playing a role in early destruction of the foreign invading miracidia.

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