

Influence of inflammatory microenvironment on host-parasite relationship

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In evolutionary process, helminths acquire immunomodulatory properties that results in increased adaptation of parasite. Colitis is a chronic inflammation of the colon amongst Inflammatory Bowel Diseases. Invasion with *Heligmosomoides polygyrus* of mice induced by DSS colitis inhibits disease symptoms however, adaptation of nematode to changes in milieu is observed. L4 stage of *H. polygyrus* is bigger and survives longer.

The aim of the study was to determine the changes in milieu and how it influences the composition of excretory/secretory proteome of *H. polygyrus* L4 stage developed in inflammatory microenvironment. Live *H. polygyrus* L4 stage were isolated 6 days after infection of BALB/c mice with colitis induced by 3% DSS. Small intestine mucosa of mice was gently removed and used for analysis of growth factors level with Mouse Growth Factor Array. Parasites were harvested *in vitro* for 48 hours then cultivation medium collected and analyzed by Tandem Mass Spectrometry (LC-MS/MS). Tandem mass spectral data was carried out using the MASCOT program against the NCBI and NEMBase databases to identify proteins.

Induction of inflammation of the colon resulted in changes in growth factor production in small intestine of the host hence had reflection in excretory/secretory proteome variations of the parasite.

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