

Proteomic analysis of somatic extracts from the L4 stage intestinal nematode *Heligmosomoides polygyrus*

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Heligmosomoides polygyrus, an intestinal nematode of mice is a model organism for study immunomodulatory and immunosuppressive antigens of parasites. Interestingly, several adult worm immunogenic proteins were characterized, but research of L4 stage *H. polygyrus* hasn't been carried out.

In recent research, somatic extract proteins of premale and prefemale L4 larvae were separated using 2D electrophoresis, independently. Immunogenicity of these proteins were recognized by IgG1, IgA, IgE mouse antibodies. Immunogenic proteins were identified using LC-MS/MS analysis and Mascot software. Gene Ontology, GO annotation was performed using BLAST-2GO 5.2 Software.

There were more immunogenic proteins identified in premale than prefemale somatic extract. Also more proteins were recognized by IgG1 and IgA than IgE antibodies in both groups. A considerable part of prefemale immunogenic proteins were connected with cellular processes, developmental processes and multicellular organismal processes. Identified proteins belong to protein disulfide isomerases, galectins, actins and chaperone proteins, like Heat Shock Protein 70. There was strong dominance of proteins related to cellular processes and metabolic functions among premale immunogenic proteins. Identified proteins of premales included: proteins participated in cellular respiration and pentose phosphate pathway, actin and chaperone proteins such as Heat Shock Protein 70.

Studying the differences in immunogenicity of premale and prefemale nematodes is crucial for identification of immunoregulation mechanisms induced by these helminths. Higher immunogenicity of premale larvae may stay with their shorter survive as adult form after fertilization of female in the intestine.

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