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### Mass spectrometry identification of antigenic proteins of the adult tapeworm *Hymenolepis diminuta*

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Adult tapeworms attach to their host's intestine with scolex armed with adhesive structures. In addition, cestodes use tegumental surface structures – microtiches - to anchor to the intestinal wall. In a number of cases this mechanical contact between the parasite and host small intestine leads to irritation of the intestinal mucosa. This may finally result in inflammatory processes leading to ulceration and intestinal dysfunctions. Therefore, parasite proteins should be recognized by the host immune system as antigens. These proteins are associated with: excretory-secretory products; surface and tegumental proteins. The aim of the present study was to identify antigenic proteins of the adult cestode *Hymenolepis diminuta*. To achieve our goal we subjected the total protein extract from adult tapeworms to two-dimensional immunoblotting with sera from experimentally infected rats. Thirty-six protein spots showed reactivity to the rat sera. These immunoreactive spots were excised from the gel and further protein identification was carried out using LC-MS/MS. We identified 66 proteins including enolase, heat shock proteins, kinases, phosphatases, glycolytic enzymes and structural muscle proteins such as actin, myosin, and paramyosin. Most of the identified proteins are reported for the first time in the adult cestode as potential antigens. They are predominantly associated with binding and catalytic activity and are engaged in metabolic and cellular processes. The presented data suggest that the immune response to adult cestode infection is stimulated by diverse antigens, including proteins with cytoplasmic expression. This data extends our knowledge concerning complexity of host-parasite interplay during cestodiasis.

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