

## Immuno-proteomic analysis of *Trichinella spiralis* and *Trichinella britovi* excretory-secretory antigens recognized by human *Trichinella*-infected sera

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Protein identification of *Trichinella* is crucial for understanding host-parasite interactions, which is, in turn, important for the development of a vaccine against the parasite and immunological diagnostic methods for detecting early-stage infections. The combination of immunoblot analysis and proteomic techniques, is a comprehensive way to identify *Trichinella* proteins. The differences in the immunological characteristics between *T. spiralis* and *T. britovi* excretory-secretory antigens of muscle larvae have been demonstrated and the specific proteins (recognized by sera derived from pigs experimentally infected with *T. spiralis* or *T. britovi*) of both species were identified using two-dimensional gel electrophoresis combined with tandem mass spectrometry.

The purpose of the present study was to compare the excretory-secretory proteins of two species *T. spiralis* and *T. britovi* recognized by human *T. spiralis*-infected sera using immunoblotting and mass spectrometry. The profile of *T. spiralis* and *T. britovi*, potentially immunogenic proteins recognized by sera of patients with trichinellosis have been poorly examined.

Forty one of the positive spots recognized by the human sera from adult patients infected with *T. spiralis* were matched and located on the silver-stained gels and subjected to LC-MS/MS analysis. Among proteins specific for each of *Trichinella* species some of them were identified as common for both of *Trichinella* as serine protease, deoxyribonuclease-2-alpha, Actin-1, P49 antigen, antigen targeted by protective antibodies. These proteins were related to many important molecular functions and biological processes of the parasite, suggesting that the excretory-secretory proteins of two species might be used in the diagnosis of human trichinellosis. Therefore, the strategy for generating recombinant antigenic proteins described in this study may lead to the discovery of new targeted diagnostic antigens and could be fundamental in improving for the vaccine development against trichinellosis.

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