

# 1D-immunoblot as a species-specific diagnostic tool in human trichinellosis: yes or no?

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*Trichinella spiralis* is the etiological agent which causes the most human infections and deaths for trichinellosis. Every year, outbreaks of human trichinellosis caused by other species including *T. britovi*, *T. nativa*, and *T. pseudospiralis* have been reported. Although clinical differences have been observed among people infected with different *Trichinella* species, these have not been attributed to the species of pathogen. Although several methods are widely used for the diagnosis of *Trichinella* in humans, it is not possible to differentiate *Trichinella* species serologically, and serological methods are not suitable for early and species-specific diagnostics. Since there is no “gold standard” for the serological detection of *Trichinella* infection, immunoblotting is regarded as the confirmatory test for ELISA-positive sera. Several studies have evaluated the sensitivity and specificity of immunoblotting, and numerous efforts have been made to identify species-specific proteins with diagnostic value. Recent studies indicate that immunoblotting could be useful for serological species-specific identification of *Trichinella* species infecting humans. The aim of this study was to establish the value of the serological assay (immunoblot) for species-specific diagnosis of human trichinellosis. The excretory-secretory (ES) antigens and crude worm extract (CWE) of *T. spiralis* and *T. britovi* were subjected to 1D-immunoblot with sera from *Trichinella*-infected humans, and pigs experimentally infected with *T. spiralis*, *T. britovi*, *T. nativa* or *T. pseudospiralis*. A distinctive pattern of specifically recognized proteins by sera samples was observed for ES and CWE from *T. spiralis* and *T. britovi*. The most frequently recognized bands were in 55-70 kDa (ES *T. spiralis*) and 55-100 kDa (CWE *T. spiralis*, *T. britovi*). Sera from infected humans and pigs showed similar patterns of reactivity with only minor variations. Variability of the protein pattern was localized in the area between 25 and 35 kDa. Although the diagnostic pattern was defined for both infected humans and pigs, it seems that 1D-immunoblot is not of any value for species-specific *Trichinella* diagnosis in humans. To achieve high accuracy in the interpretation of the immunoblot pattern, it is necessary to carefully measure the relative migration distance of the proteins.

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