BRIEF COMMUNICATION

PRODUCTION OF MONOCLONAL ANTIBODIES ANTI-Taenia crassiceps CYSTICERCI WITH CROSS-REACTIVITY WITH Taenia solium ANTIGENS

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SUMMARY

We describe the production of the potential monoclonal antibodies (MoAbs) using BALB/c mice immunized with vesicular fluid (VF)-Tcra (T. crassiceps) antigen. Immune sera presented anti-VF-Tcra (<20kD) IgG and IgM antibodies with cross-reactivity with T. solium (Tso) antigen (8-12, 14, and 18 kD). After cell fusion, we selected 33 anti-Tcra and anti-Tso reactive IgM-clones and 53 anti-Tcra specific IgG-clones, 5 of them also recognizing Tso antigens. Two clones identified the 8-14 and 18kD peptides of VF-Tcra.

KEYWORDS: Taenia solium; Taenia crassiceps; Monoclonal antibody; Cysticercosis.

The teniasis-cysticercosis complex is a public health problem in many countries, with neurocysticercosis (NC) being the most severe form caused by the presence of Taenia solium cysticerci (Tso) in the central nervous system. The search for antibodies in serum and cerebrospinal fluid (CSF) using antigens obtained from Tso has been efficiently utilized for diagnosis4,12,13. Monoclonal antibodies (MoAbs) anti-Tso have been used to detect antigens in CSF samples from patients with NC2,3 or to obtain specific antigens by immunoaffinity. The production of sufficient amounts of antigens from Tso cysticerci is impaired by the difficulty in obtaining parasites from infected swine, with the need to investigate alternative parasites. Cross-reactivity between Tso and Taenia crassiceps cysticerci (Tcra) obtained by intraperitoneal inoculation of mice has been reported6,7,10,13.

In the present study we describe the cross-reactivity of the antibodies produced by mice immunized with Tcra and the production of anti-Tcra MoAbs. The total Tso antigen (T-Tso) and the vesicular fluid antigen of Tcra (VF-Tcra) were prepared as described before13. By SDS-PAGE, the T-Tso antigen presented various peptides of 8 to 158kDa and the VF-Tcra antigen was rich in <20kDa peptides (Figure 1). Low molecular weight peptides of Tcra6 and of Tso4,12 antigens have been reported to be immunodominant in cysticercosis.

For cell fusion, female BALB/c mice were immunized with 50 µg VF-Tcra and 30 days later received a booster containing double the initial concentration. The animals were bled before and at different days after immunization. IgM and IgG antibodies were detected in the immune sera by ELISA with the Tcra and Tso (cross-reactivity) antigens starting on the 15th day, with IgM presenting a second peak after the booster. The blots showed that IgM and IgG antibodies identified the 12-14 and 18kDa peptides of VF-Tcra and also cross-reacted with the peptides of 8-12kDa, 14 and 18 kDa of the T-Tso antigen (Figure 1).

Fig. 1 - A: Tso (1, 3) and Tcra (2, 4) peptides identified by SDS-PAGE [Coomassie Blue (1, 2) and silver nitrate (3, 4) staining]. B: Immunoblotting of Tcra (5-8) and Tso (9-12) antigens recognized by IgM (5, 6, 9, 10) and IgG (7, 8, 11, 12) antibodies from serum of mice immunized with VF-Tcra. Lanes 5, 7, 9, 11: before immunization; lanes 6 and 10: 37d day after immunization; lanes 8 and 12: 83d day after immunization.
In conclusion, our results and the successful production of anti-Tcra MoAbs cross-reacting with Tso antigens indicate their potential usefulness in the detection of antigens in samples from human and/or swine cysticercosis. The MoAbs could also be utilized for the purification of cross-reacting antigens of VF-Tcra to be used in immunologic tests to detect anti-Tso cystercercus antibodies.

**REFERENCES**


Received: 26 November 1999
Accepted: 05 April 2000