DETECTION OF *ECHINOCOCCUS MULTILOCULARIS* COPRO-ANTIGENS IN EXPERIMENTALLY INFECTED DOGS USING MURINE MONOCLONAL ANTIBODIES PREPARED AGAINST THE ADULT WORMS

Hiromi KOHNO

Department of Parasitology
Faculty of Veterinary Medicine
Hokkaido University, Sapporo 060, Japan

Murine hybridoma-derived monoclonal antibodies (MAbs) were raised against *Echinococcus multilocularis* adult worm for the detection of copro- and circulating antigens in experimentally infected dogs.

Eleven MAbs were obtained after cell fusion, of which six were IgM (designated as EmA1, EmA2, EmA3, EmA4, EmA5 and EmA6) and five were IgG (EmA7, EmA8, EmA9, EmA10, and EmA11). The MAbs were tested by indirect immunoperoxidase tissue staining (IP) of sections of paraffin-embedded *E. multilocularis* adult worms and intestine of infected dogs. The MAbs variously stained the organs of the worms, such as the genital organs, tegument, scolex, sucker, etc. For example, EmA8, EmA9, and EmA11 were observed to stain only the worm's parenchyma, tegument and the host intestinal epithelium around the worm.

All of the MAbs were tested by ELISA against the antigens of other parasites such as *Taenia taeniaeformis* [metacestode (M) and adult worm (A)], *T. crassiceps* (M & A), *T. hydatigena* (A), *Hymenolepis diminuta* (A), *Spirometra erinacei* (A) and *Toxocara canis* (A). The metacestode of *E. multilocularis* was also tested. EmA4 cross-reacted with all the antigens tested, while EmA9 and EmA10 did not cross-react with any. The remaining MAbs variously cross-reacted with some of the antigens tested.

The MAbs could be divided into seven different groups based on their staining patterns against *E. multilocularis* antigens by the Western blot method.

From the results of the cross-reactivity tests, EmA9 and EmA10 were found to be specific for *E. multilocularis* adult worm antigens. Since EmA9 stained the tegument of worms and the host intestinal epithelium in the vicinity of the worms by IP, it was thought to recognize the excretory / secretory antigens of the worms. Thus, EmA9 was used for detecting the copro-antigens in feces and circulating antigens in sera of experimentally infected dogs. *E. multilocularis* copro-antigens were detected by sandwich-ELISA in 3 of the 4 infected dogs as early as 4 to 7 days postinfection during the prepatent period. The sandwich-ELISA failed to detect any circulating antigen in the 4 dogs.