A DOT-ELISA TEST USING A GNATHOSTOMA SPINIGERUM RECOMBINANT MATRIX METALLOPROTEINASE PROTEIN FOR THE SERODIAGNOSIS OF HUMAN GNATHOSTOMIASIS

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Abstract. Gnathostomiasis caused by \textit{Gnathostoma spinigerum}, is a hazardous foodborne helminthic zoonosis, and is endemic especially in developing countries in Asia. Definitive diagnosis, relying upon identification of worms from human tissues or body, is rarely accomplished. Consequently, sensitive supporting tools such as serological tests have been used widely. But these methods are time consuming, need sophisticated equipment and are impractical in some settings. In the present study a dot enzyme-linked immunosorbent assay (dot-ELISA), using \textit{G. spinigerum} recombinant matrix metalloproteinase protein as the antigen, was developed and assessed using sera of gnathostomiasis and other parasitosis patients as well as healthy controls. The accuracy, sensitivity, specificity, positive and negative predictive values were 97.4\%, 100\%, 96.1\%, 92.9\%, and 100\%, respectively. The dot-ELISA appears to be a suitable rapid test for diagnostic purpose as well as epidemiological studies.

Keywords: \textit{Gnathostoma spinigerum}, dot-ELISA, human gnathostomiasis, recombinant matrix metalloproteinase