

ABSTRACT

The carcinogenic liver fluke *Opisthorchis viverrini* (*Ov*) is an endemic trematode parasite in Thailand that have a poor prognosis and high fatality rate. The infection is conventionally diagnosed by stool-based examination method that has been unreliable in light infection cases. Recently, a mucinase enzyme secreted by the fluke called *Ov*-M60-like 1 metallopeptidase, was successfully purified and characterized. The goal of this study was to assess the potential of the *Ov*-M60-like 1 metallopeptidase as a serodiagnostic marker in opisthorchiasis detection. A recombinant *Ov*-M60-like 1 of 100 kDa was expressed in *E. coli* strain BL21 (DE3), and mice anti r*Ov*-M60-like 1 antibody was produced. The antibody was deployed as the detection antibody in an in-house sandwich ELISA setting. In total of 4 infected mice sera, 3 infected hamster sera, and 4 infected patient sera were investigated. However, immunoreactivities were unable to be analyzed due to the inconclusiveness of the obtained results. But several positive values were obtained, and thus still indicated the potential of *Ov*-M60-like 1 antigen for a diagnostic marker of opisthorchiasis. In addition, adult fluke body sections were fixed and processed for immunohistochemistry for *Ov*-M60-like 1 localization. The localization can enhance the understanding of the parasite and the pathogenesis of opisthorchiasis. Overall, positive staining was only observed on the eggs inside the fluke's reproductive organs. Even though the study was failed to meet the expected results, several problems and reasons were discussed.

Keywords: Immunodetection, M60 metallopeptidase, *Opisthorchis viverrini*, Opisthorchiasis, Serodiagnostic