DEGRADATION OF HUMAN MATRIX METALLOPROTEASE-9 BY SECRETORY METALLOPROTEASES OF *ANGIOSTRONGYLUS CANTONENSIS* INFECTIVE STAGE

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Abstract. *Angiostrongylus cantonensis* infection is the major cause of eosinophilic meningitis. Successful migration and evasion of the immune system by infective-stage larvae (L3) rely heavily on secreted proteases, which activate human pro-matrix metalloprotease (MMP-9) into active MMP-9. This study showed that the proteases in excretory-secretory (ES) products of *A. cantonensis* third stage larvae degraded recombinant and native human proMMP-9 in a dose- and time-dependent manner. Protease inhibitory assays showed that metalloproteases were the key enzymes involved in the degradation of human proMMP-9. To assess the effects of ES products on inflammation, ES products were incubated with THP-1 human monocytic cells, which showed induction of MMP-2 and not MMP-9 production. These results indicated that degradation of human MMP-9 was due to metalloproteases present in ES of *A. cantonensis* L3, which may be involved in suppressing the host's immune response to allow parasite migration to the host central nervous system.

Keywords: *Angiostrongylus cantonensis*, eosinophilic meningitis, matrix metalloprotease-9, excretory-secretory products, proteases, protease inhibitors

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