

REGULATION OF MATRIX METALLOPROTEINASES SECRETION BY TOXOPLASMA GONDII DURING INVASION OF MONOCYTIC CELLS

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The apicomplexan *Toxoplasma gondii*, an obligate intracellular parasite, can infect humans and a wide range of vertebrates. Following oral infection, the parasite invades tissues by crossing non-permissive biological barriers such as the placenta or the blood-brain barrier. The crossing of the various basal membranes and infiltration into extracellular matrix by *Toxoplasma gondii* may be due to proteases. We investigated the secretion of matrix metalloproteinases (MMPs) during *T. gondii* infection of human myelomonocytic THP-1 cells. We demonstrated a decrease in proMMP-2 and proMMP-9 secretion by THP-1 cells at 24 and 48 hours post invasion; and a decrease in expression of these two proteins. This down regulation was associated with a decrease in TIMP-2 secretion and an activation of MT1-MMP. On the other hand *T. gondii* is at the origin of an increase in both uPA (urokinase activator plasminogen) secretion and activity by THP-1 cells.

Moreover, our results showed a proteinase activity at 94 kDa in infected THP-1 culture supernatant. The same experiment with tachyzoites alone showed the same proteolytic activity. This protease is able to degrade elastine too and its activity is strongly inhibited by EDTA and Batimastat, suggesting that this protease has similar characteristics of MMPs.

Key words: *Toxoplasma gondii*, Matrix Metalloproteinases, Tissue Inhibitor of Matrix Metalloproteinases, human monocytic cells, invasion.

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