

## **Abstract**

The effect of the amino sugar D-glucosamine on trypsin in crude midgut homogenates of *Glossina morsitans morsitans* was studied in vitro. The results showed that the midgut trypsin was specifically and competitively inhibited by D-Glucosamine. Glucose, fructose, mannose, inositol, galactose, galactosamine, N-acetyl-D-glucosamine, and methyl-alpha-D-glucosamine were ineffective as inhibitors, even at concentrations exceeding 600 mM. D-glucosamine also had a similar inhibitory effect on bovine pancreatic trypsin. In both cases, the inhibition was incomplete as shown by nonlinear Dixon plots. The Michaelis and inhibition constants estimated for the midgut trypsin were  $41 \pm 2$   $\mu\text{M}$  and  $68 \pm 3$  mM, respectively. These results suggest that the susceptibility of tsetse flies to trypanosome infection, which is associated with high midgut glucosamine levels, could be due to inhibition of trypsin or trypsin-like enzymes by this sugar