

A TRYPSIN INHIBITOR FROM RHIPICEPHALUS (BOOPHILUS) MICROPLUS EGGS

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Rhipicephalus (Boophilus) microplus is an important hematophagous ectoparasite that causes several losses to cattle breeding. Nowadays, tick control is based on chemical acaricides. Due to drug resistance and the possibility of the presence of residues on beef and milk, new control methods must be found. A better understanding of the host parasite relationship is necessary in order to develop alternative control methods. Now, we describe a trypsin inhibitor associated with VTDCE (Vitellin Degrading Cysteine Endopeptidase) from *R. microplus* eggs. The inhibitor was purified from egg extract using ion exchange (Hitrap Q and Mono Q) and size exclusion (Superdex 75) chromatographies. In all these steps the trypsin inhibitor coeluted with VTDCE. This enzyme was inactivated in the final preparation by boiling. This final preparation inhibits trypsin and does not inhibit papain or VTDCE. The kinetic of this inhibitor was performed against trypsin. A trypsin inhibitory activity was also found in hemolymph. In a previous work we showed that VTDCE circulates in hemolymph associated with vitellin. In this context, we suggest that this inhibitor is also associated to this complex in order to avoid both vitellin and VTDCE degradation during the period it circulates in the hemolymph, that is, before they capture by the ovary and storage inside yolk granules.

Support: CNPq.