

[P-67]**Purification and characterization of a serine protease (CPM-2)
with fibrinolytic activity from the dung beetle**

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Catharsius protease-1 (CPM-2) was isolated from the whole body of the dung beetles, *Catharsius molossus* using three purification steps (ammonium sulfate fractionation, gel filtration on Bio-Gel P-60, and affinity chromatography). The purified CPM-2 that has a molecular weight of 24 kDa was assessed homogeneous by SDS-polyacrylamide gel electrophoresis. N-terminal amino acid sequence of the protease was composed of X Val Gln Asp Phe Val Glu Glu Ile Leu. The enzyme was inactivated by Cu^{2+} and Zn^{2+} and strongly inhibited by typical serine proteinase inhibitors such as TLCK, soybean trypsin inhibitor, aprotinin, benzamidine and α -antitrypsin. But EDTA, EGTA, cysteine, β -mercaptoethanol, E64, elastatinal and TPCK did not/less affect activity. Also, antiplasmin and antithrombin III were not sensitive to CPM-2. On the basis of amidolytic activity test, CPM-2 readily digested A α - and γ -chains and more slowly B β -chain of fibrinogen. The nonspecific action of the enzyme resulted in extensive hydrolysis, releasing a variety of fibrinopeptides of fibrinogen and fibrin.

Keyword : dung beetle, fibrinolytic enzyme, serine protease