

PURIFICATION AND N-TERMINAL SEQUENCE ANALYSIS OF A KUNITZ-
TRYPSIN INHIBITOR FROM *TAMARINDUS INDICA* SEEDS AND ITS AFFECTS
IN VITRO TO INSECT PESTS

¹Macedo, C.S., ¹Macedo, L.L.P., ^{1,3}Oliveira, A.S., ¹Aquino, R.O. ¹Migliolo, L.,
²Macedo, F.P., ¹Santos, E.A., ³Vasconcelos, I.M., ⁴Franco, O.L., ¹Sales, M.P.

¹Departamento de Bioquímica, ²Departamento de Genética e Biologia Celular,
Centro de Biociências, UFRN, Natal-RN; ³Departamento de Bioquímica e Biologia
Molecular, Centro de Ciências, UFC, Fortaleza-CE; ⁴Centro de Análises
Proteômicas e Bioquímicas, UCB, Brasília-DF

A proteinaceous inhibitor with high activity against trypsin-like serine proteinases was purified from seeds of the tamarind tree (*Tamarindus indica*) by gel filtration on Sephacryl S-200 AND a reverse-phase HPLC Vidac C18 TP. The inhibitor, called TTI, showed a Mr of 21.42 kDa by maldi-tof. TTI was a noncompetitive inhibitor with a Ki-value of 1.7×10^{-9} M. *In vitro* activity against insect digestive enzymes from different orders showed that TTI had remarkable activity against enzymes from coleopteran, *Zabrotes subfasciatus* (51.6%), *Callosobruchus maculatus* (86.7%), *Rhyzopertha dominica* (88.2%), and lepidopteron, *Alabama argillacea* (53.8%), and *Spodoptera frugiperda* (75.5%). Also, digestive enzymes from Diptera, *Ceratitis capitata* (fruit fly), were inhibited (52.9%). Analysis N-terminal of the inhibitor showed TTI had similarity with Kunitz-Inhibitors: *Bauhinia bauhinioides*(80%), *Adenantha pavonina*(75%), *Psophocarpus tetragonolobus* (70%), *Acacia confusa*(70%), *Prosopis juliflora*(70%), *Leucaena leucocephala*(70%) and *Glycine max* (60%).

Supported by CAPES, CNPq, FINEP AND BNB-FUNDECI