

EFFECT OF A KUNITZ TRYPSIN INHIBITOR FROM *PITHECOLOBIUM DUMOSUS* SEEDS TOWARD CALLOSOBRUCHUS *MACULATUS* AND *ZABROTES SUBFASCIATUS*

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The seeds of the Leguminosae family contain serine proteinase inhibitors, particularly those of Kunitz-type inhibitors which are the most studied. These inhibitors are molecules of 19-26 kDa that inhibit trypsin and/or chymotrypsin. They are involved in plant defense processes against insect pest attack. A trypsin inhibitor was purified from *Pithecolobium dumosus* seeds by TCA precipitation, affinity chromatography on trypsin-Sepharose and reverse-phase HPLC. The trypsin inhibitor named PDI, had 22 kDa determined by SDS-PAGE and composed of single chain polypeptide. PDI is a potent trypsin inhibitor with a competitive type inhibition mechanism and value of K_i 5.70×10^{-10} M. PDI inhibited chymotrypsin (42%) and papain (10%), but none inhibition on elastase and bromelain was detected. PDI was effective on proteinases from *C. maculatus* and *Z. subfasciatus* with 66 and 60% inhibition, respectively. Results support that PDI is a member of Kunitz-inhibitor family and its insecticidal properties indicate a potent insect antifeedant.

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