

# INVESTIGATION OF ASPARTIC PROTEASE INHIBITORY ACTIVITY IN THE BARK EXTRACT OF *Dillenia retusa*

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*Dillenia retusa*, which belongs to Family Dilleniaceae is a moderate sized tree distributed mainly in the low country wet zone. It is endemic to Sri Lanka. This study was carried out to investigate the occurrence of aspartic protease inhibitory activity in the bark extract of *D. retusa* using porcine pepsin as the model aspartic protease.

First, an assay procedure was developed to determine the pepsin inhibitory activity using the bark extract of *D. retusa*. This developed assay procedure was used throughout the study to investigate the pepsin inhibitory activity. The inhibitor was partially purified by using dialysis and ion exchange chromatography using DEAE - cellulose.

The thermal stability of the crude extract and the partially purified inhibitor was investigated by incubating the samples at 4 °C, room temperature and at 37 °C for 14 days. Aliquots were removed at different time intervals and the percentage remaining protease inhibitory activity was determined.

Significant pepsin inhibitory activity (75 %) was detected in aqueous bark extract. The inhibitory activity retained inside the dialysis bag of 12 kDa cut off. The inhibitor is thermally unstable as a significant amount of activity was lost during incubation at room temperature and above. These data suggest that the inhibitor is a macromolecule presumably a protein.

