

Screening of natural inhibitors of aspartic proteinase from medicinal plants in Sri Lanka

Recently aspartic proteinase have become enormously important since two of aspartic proteinases, Human Immunodeficiency Virus proteinase and malarial parasite proteinase were identified as key therapeutic intervention point in the treatment of AIDS & Malaria. Investigation of natural inhibitors of proteinases is very important since it might offer novel therapeutic approach.

Inhibitory assay procedure was developed by using denatured haemoglobin as the substrate and the porcine pepsin as the enzyme to screen natural inhibitors. Various parts (fruits, leave, stem barks, seeds & root barks) of 200 medicinal plants were collected from available forests. Crude extracts of collected plant tissues were prepared by homogenizing dried plant tissue powder in distilled water and centrifuging at 12,000 rpm for 15 minutes. Clear supernatant was separated and used as a crude extract. Plant crude extract was screened against known inhibitors of aspartic proteinase.

Ten plant extracts showed significant inhibition (>50%) of pepsin activity. Four plant extracts (*Spondias pinnata*, *Tarenna asiatica*, *Tetracera sarmantosa*, *Diospyros malabarica*) out of ten showed higher percentage (>80%) of inhibition. Specific inhibitory assay procedures for HIV proteinase, Cathepsin E and Cathepsin D were developed and further studies are in proteinase family and to purify the positive selective ingredient from the crude extract.