## Clinacanthus nutans aqueous extract suppresses the release of histamine and β Hexosaminidase inin-vitro model of IgE-mediated mast cell degranulation

## ABSTRACT

Introduction: Clinacanthus nutans (Burm. f.) Lindau, a shrub found in South East Asia, particularly in Malaysia, Thailand, and Indonesia has many potential medicinal uses. It is used as a traditional herbal medicine for treating many diseases including skin rashes. Skin rash often appear in an allergic reaction. Recently, we have shown that C. nutans aqueous extract has the ability to alleviate ovalbumin-induced active systemic anaphylaxis rats from anaphylaxis – the acute form of allergy. This present study is aimed at comparing the ability of ethanolic and aqueous extracts of C. nutans to suppress IgE-mast cell degranulation. Materials and Methods: IgE-presensitized rat basophilic leukemic (RBL-2H3) cells pretreated with C. nutans ethanolic (100% ethanolic, 70% and 50% aqueous ethanolic) or 100% aqueous extracts were challenged with dinitrophenyl-bovine serum albumin to analyze the release of early and late-phase pro-inflammatory mediators. Results: We found that at concentrations of 5 mg/ml and above, C. nutans aqueous extract was able to suppress the levels of  $\beta$ -hexosaminidase and histamine while suppression was not seen in ethanolic extracts pretreated RBL-2H3 cells.Conclusion: Hence, we proposed that C. nutans aqueous extract is more active compared to the ethanolic extracts in suppressing the mediators of IgEmast cell degranulation.

**Keyword:** Clinacanthus nutans; Histamine; IgE-mediated mast cell degranulation; Proinflammatory mediators;  $\beta$ -hexosaminidase