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Anti-allergic effect of *Clinacanthus nutans* aqueous extract: Protection against IgE-mediated passive systemic anaphylaxis

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Introduction: Anaphylaxis is a serious, rapid and potentially life-threatening allergic response involving IgE or IgG. Clinacanthus nutans, a small native shrub found in tropical Asia possess analgesic, anti-inflammatory and anti-viral activities and traditionally used for skin rashes, insect and snake-bites. In Thailand, alcoholic *C. nutans* extracts has been used topically for skin rashes, a symptom of allergy.

Aim: To justify that *C. nutans* can treat skin rashes; this study investigated the anti-allergenicity of *C. nutans* extracts.

Methods: Cytotoxicity of *C. nutans* extracts was evaluated by MTT on RBL-2H3. The most active *C. nutans* extract was determined by IgE-mediated mast cell degranulation. Acute toxicity of *C. nutans* aqueous extract was evaluated using female Sprague Dawley rats at 5000 mg/kg. Anti-allergenicity of *C. nutans* aqueous extract was studied by IgE-mediated passive systemic anaphylaxis (PSA). The release of preformed mediator (β-hexosaminidase) as well as newly synthesized mediators (TNF-α, IL-4 and LTC4) was evaluated.

Results: *C. nutans* extracts were not cytotoxic up to 1 mg/ml (ethanolic) and 6 mg/ml (aqueous). In vitro, *C. nutans* aqueous extract was able to inhibit the release of preformed mediators but not newly synthesized mediators at 5 mg/ml. The ethanolic extracts were not able to inhibit all mediators tested. At 5000 mg/kg, *C. nutans* aqueous extract was non-toxic to the rats; no significant difference observed haematologically and biochemically. In vivo, *C. nutans* aqueous extract did not inhibit mediators of IgE-mediated PSA at 500 mg/kg and 2000 mg/kg.

Conclusion: *C. nutans* aqueous extract was most active but could not inhibit mediators of IgE-mediated PSA. As anaphylaxis could be mediated by IgE orIgG, we postulate that *C. nutans* aqueous extract may exhibit its anti-allergenicity in IgG-mediated pathway.

Biography

Audrey Kow is currently a PhD student at the University of Putra Malaysia under the supervision of Dr Tham Chau Ling in Immunopharmacology. She has completed her Bachelor's degree in Medical Biosciences from Monash University, Malaysia and Masters in Biomedical Sciences from Curtin University, Western Australia.

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