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Authors: Leng Wei Khoo, Siew Foong Audrey Kow, M. Maulidiani, Ming Tatt Lee, Chin Ping Tan, Khozirah Shaari, Chau Ling Tham, Faridah Abas

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Plasma and urine metabolite profiling reveals the protective effect of *Clinacanthus nutans* in an ovalbumin-induced anaphylaxis model: ^{1}H-NMR metabolomics approach

Leng Wei Khoo[a], Siew Foong Audrey Kow[b], M. Maulidiani[c], Ming Tatt Lee[d], Chin Ping Tan[e], Khozirah Shaari[c], Chau Ling Tham[b], Faridah Abas[a,c*]

[a] Department of Food Science, Faculty of Food Science and Technology, Universiti Putra Malaysia, 43400 Serdang, Selangor, Malaysia.

[b] Department Biomedical Science, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, 43400 Serdang, Selangor, Malaysia

[c] Laboratory of Natural Products, Institute of Bioscience, Universiti Putra Malaysia, 43400 Serdang, Selangor, Malaysia.

[d] Faculty of Pharmaceutical Sciences, UCSI University Kuala Lumpur Campus, Jalan Menara Gading, UCSI Heights (Taman Connaught), Cheras 56000 Kuala Lumpur, Malaysia

[e] Department of Food Technology, Faculty of Food Science and Technology, Universiti Putra Malaysia, 43400 Serdang, Selangor, Malaysia.

*Corresponding author:
Faridah Abas, PhD, e-mail: faridah_abas@upm.edu.my, tel: +603 89468343

Highlights

- ^{1}H-NMR metabolomics aids in identification of anaphylaxis biomarkers and pathways
- 2000 mg/kg *Clinacanthus nutans* water leaf extract attenuates anaphylaxis reaction
- Carbohydrate and lipid metabolism are key requisites for induction of anaphylaxis
- Betaine is the most potential biomarker in suppressing ovalbumin induced anaphylaxis

Abstract

The present study sought to identify the key biomarkers and pathways involved in the induction of allergic sensitization to ovalbumin and to elucidate the potential anti-anaphylaxis property of *Clinacanthus nutans* (Burm. f.) Lindau water leaf extract, a Southeast Asia herb in an *in vivo* ovalbumin-induced active systemic anaphylaxis model evaluated by ^{1}H-NMR