

INTAN SAFINAR ISMAIL
Ph.D. (Okayama University)

ASSOCIATE PROFESSOR DR.
Department of Chemistry
Faculty of Science
Tel-Office: 03 89467492
Fax: 03 89435380
safinar@upm.upm.edu.my

**EXPERTISE**

Natural Products Chemistry and Metabolomics

Dr. Intan Safinar Ismail is an Associate Professor in the Dept. of Chemistry, Faculty of Science (2005-present), UPM, and was the Head of Laboratory of Natural Product, Institute of Bioscience, UPM (2011-2017). Her research focus is in discovering the bioactive metabolites from natural resources utilizing metabolomics tool and conventional reduction natural product chemistry approach. Metabolomics approach has been her research tool since she first exposed in 2009 whereby she became among the pioneer researchers in Malaysia in using the tool. Combination of her skillset in multi spectroscopic-platforms especially NMR and LCMS with or without selected bioassays from in vitro (enzyme and cell line) to in vivo (zebrafish and rat), the phenotypic variations of metabolites are observed and deciphered through multivariate data analysis. The holistic metabolic phenotypic variability of a biological system (plant or animal) is a window in understanding the system natural or perturbed state.

CURRENT RESEARCH INTERESTS:**• Proving efficacy of traditional medicinal claims**

Orthosiphon stamineus (Misai kucing), *Nigella sativa* (Habbatus sauda), *Andrographis paniculata* (Hempedu bumi) and *Clinachantus nutans* (Belalai gajah) are among the plants studied by metabolomics platform. The toxico-metabolomics approach helps in understanding the mechanisms of toxicity, identify the biomarkers and predict the bioactivity of the plant extract.

• Food and their medicinal values

Stingless bee (Meliponine) honey is an example of food supplement consumed due to the medicinal claims. Hence scientific evidence of the claims is a value-added to this known common food. Quality control in terms of originality and purity of the honey was addressed through metabolomics tool.

• Using Zebrafish as a preliminary in vivo animal model

Zebrafish is opted mainly due to the advantages of being cost-effective, ease of maintenance, rapid development as well as its high degree of genomic conservation with human. This is a preliminary in vivo model applicable to determine toxicity or bioactivity.

• Bridging the scientific evidence to the public

Knowledge through discovery on evidence-based traditional medicinal properties will be useful if transferred to the community.

LINK TO POSTGRADUATE FIELD OF STUDY:

Natural product chemistry, Metabolomics, Medicinal chemistry

ADDITIONAL INFORMATION: