

Evaluation of antioxidants activity of *Momordica charantia* using LC-MS metabolomics approach

Vikneswari Perumal¹, Qamar Uddin Ahmed¹, Alfi Khatib¹, Bisha Fathamah Uzir¹ and Suganya Murugesu¹.

¹Department of Pharmaceutical Chemistry, Kulliyah of Pharmacy, International Islamic University Malaysia (Kuantan Campus), Pahang.

ABSTRACT

Objectives: The present study was design to identify the significant biomarkers from *M.charantia* that possessing antioxidant activity using liquid chromatography-mass spectrometry (LC-MS) based metabolomics approaches.

Design and method: Initially, the fruit was extracted by soaking in different solvents with different concentrations of ethanol in water (0, 20, 40, 60, 80, 100%, v/v). Then, the extracts were tested for antioxidant activity using 1, 1-diphenyl-2 picrylhydrazyl (DPPH) and ferric reducing antioxidant power assay. LC-MS based metabolomics approach correlated with multivariate data analysis was applied to profile the bioactive compounds present in the extract.

Results The 80% ethanol extract showed a high inhibitory activity on 1, 1-diphenyl-2 picrylhydrazyl (DPPH) radical and high ferric reducing antioxidant power, LC-MS based metabolomics approaches helped to identify several antioxidants in this extract such as ascorbic acid, margarolic acid, brevifolincarboxylic acid, quercetin 3-O-glycoside, kuguacin H, cucurbitacin E, 3-malonylmomordicin I, goyaglycoside G.

Conclusion: The results of the present study shows possible antioxidants from *M. charantia* fruit can be identified

Keywords: *Momordica charantia*, LCMS, Metabolomics, antioxidant, multivariate data analysis.