# Rapid investigation of α-glucosidase inhibitory activity of Clinacanthus nutans leaf using infrared fingerprinting

## ABSTRACT

The analytical method used in the quality control of Clinacanthus nutans leaves has not been well developed. Therefore, this study aimed to develop a simple analytical method to predict α-glucosidase inhibitory activity of this herb based on its infrared fingerprinting. The dried extracts obtained from maceration using solvents with different polarities were evaluated for the α-glucosidase inhibitory activity and analysed through infrared spectroscopy. Multivariate data analysis was performed by correlating the bioactivity and infrared spectrum of each extract using partial least square method. The loading plot from multivariate data analysis revealed that C single bond H and Cdouble bond O infrared signals from terpenoids in the extract were positively correlated with the α-glucosidase inhibitory activity. The developed partial least square model was validated through a testing on the external samples. The result concludes that the developed model is valid and capable of predicting α-glucosidase inhibitory activity of the external samples.

**Keyword:** Clinacanthus nutans; α-Glucosidase; Partial least square Fingerprinting; Infrared spectroscopy; Chemometrics