

Identification of bioactive compounds with GC–Q-TOF–MS in the extracts from *Clinacanthus nutans* using subcritical carbon dioxide extraction

Abstract

Subcritical carbon dioxide Soxhlet extraction of biologically active compounds from *Clinacanthus nutans* was investigated by full factorial design to identify and optimize the factors (particle size and co-solvent) affecting extract yield, antioxidant activity, total phenolic content, total flavonoid content, and α -glucosidase inhibitory activity. An average of 3.103% yield, 98.90% antioxidant activity, 49.40 mg/g (GAE) TPC, 43.76 mg/g (RE), and 88.58% AGI activity can be achieved using the optimum levels of independent variables. The GC-Q-TOF MS identification of optimized extract shown that different classes of phytoconstituents were successfully separated by CO₂-Soxhlet to produce potential antioxidant and α -glucosidase inhibitory activity.