

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.