Quantitative HPLC analysis of benzene derivatives of Melicope ptelefolia leaves

Abstract

A high performance liquid chromatography procedure for the quantitative determination of three marker benzene derivatives, 2,4,6-trihydroxy-3-prenyl acetophenone (tHPA) (1), 2,4,6-trihydroxy-3-geranyl acetophenone (tHGA) (2), and p-O-geranyl coumaric acid (GCA) (3), in the Melicope ptelefolia ethanolic leaf extracts, a medicinal herb obtained from a few locations of the Peninsula Malaysia, was described. The quantitative analysis was performed using high performance liquid chromatography-photodiode array detection on Xterra octadecylsiyl silica (ODS; 3.0 × 150 mm, 3.5 μm) column kept at 32°C, using gradient elution with acetonitrile and water containing 0.1% formic acid at a flow-rate of 1 ml/min with UV detection wavelength at 280 nm. All calibration curves showed good linearity (R2 of 0.999 to 1.0000) within the concentrations range of 2.5 × 10-3 to 0.1 mg/mL. The method was shown to be simple, sensitive, and reliable for qualitative and quantitative analysis of the marker compounds in M. ptelefolia leaf preparations.

Keyword: Quantitative analysis; HPLC-DAD; Melicope ptelefolia; p-O-geranyl coumaric acid (GCA).