Antioxidative activity of carbazoles from Murraya koenigii leaves

ABSTRACT

The antioxidative properties of the leaves extracts of Murraya koenigii using different solvents were evaluated based on the oil stability index (OSI) together with their radical scavenging ability against 1-1-diphenyl-2-picrylhydrazyl (DPPH). The methylene chloride (CH2Cl2) extract and the ethyl acetate (EtOAc) soluble fraction of the 70% acetone extract significantly prolonged the OSI values comparable to those of Ŭ-tocopherol and BHT. Five carbazole alkaloids were isolated from the CH2Cl2 extract and their structures were identified to be euchrestine B (1), bismurrayafoline E (2), mahanine (3), mahanimbicine (4), and mahanimbine (5) based on 1H and 13C NMR and mass (MS) spectral data. The OSI value of carbazoles at 110 ℃ decreased in the order 1 and 3 > Ŭ-tocopherol > BHT > 2 > 4, 5 and control. It is assumed that compounds 1 and 3 contributed to the high OSI value of the CH2Cl2 extract of M. koenigii. The DPPH radical scavenging activity for these carbazoles was in the order ascorbic acid > 2 > 1, 3 and Ŭ-tocopherol > BHT > 4 and 5.

Keyword: Carbazole; Murraya koenigii; Curry leaf; Antioxidant; Oil stability index (OSI); 1-1-diphenyl-2-picrylhydrazyl (DPPH)