Title	Identification of volatile components in basil (*Ocimum basilicum* L.) and thyme leaves (*Thymus vulgaris* L.) and their antioxidant properties
Author	Seung-Joo Lee, Katumi Umano, Takayuki Shibamoto and Kwang-Geun Lee
Citation	Food Chemistry Volume 91, Issue 1, June 2005, Pages 131-137
Keyword	Aroma chemicals; Basil; Thyme; Natural antioxidants

Abstract

Aroma compounds in the extracts of basil leaves (*Ocimum basilicum* L.) and thyme leaves (*Thymus vulgaris* L.) were identified by gas chromatography (GC) and gas chromatography/mass spectrometry (GC/MS). The major aroma constituents of basil were 3,7-dimethyl-1,6-octadien-3-ol (linalool; 3.94 mg/g), 1-methoxy-4-(2-propenyl) benzene (estragole; 2.03 mg/g), methyl cinnamate (1.28 mg/g), 4-allyl-2-methoxyphenol (eugenol; 0.896 mg/g), and 1,8-cineole (0.288 mg/g). The major aroma constituents of thyme were 2-isopropyl-5-methylphenol (thymol; 8.55 mg/g), 4-isopropyl-2-methylphenol (carvacrol; 0.681 mg/g), linalool (0.471 mg/g), α-terpineol (0.291 mg/g), and 1,8-cineole (0.245 mg/g). Twelve aroma constituents of basil and thyme were examined for their antioxidant activities using the aldehyde/carboxylic acid assay. Eugenol, thymol, carvacrol, and 4-allylphenol showed stronger antioxidant activities than did the other components tested in the assay. They all inhibited the oxidation of hexanal by almost 100% for a period of 30 days at a concentration of 5 μg/ml. Their antioxidant activities were comparable to those of the known antioxidants, α-tocopherol and butylated hydroxy toluene (BHT).