



Chemical identification of different essential oils from *Pelargonium graveolens* L. (Geraniaceae)

Maíra Kerpel dos Santos, Adriana Nunes Wolffenbüttel, Renata Pereira Limberger

Universidade Federal do Rio Grande do Sul (UFRGS)
Faculdade de Farmácia, Programa de Pós Graduação em Ciências Farmacêuticas (PPGCF)
mai.krps@gmail.com

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Dietary supplements and weight-loss products containing 1,3 dimethylamylamine (DMAA) have recently presented an increase in consumption, despite the lack of studies proving its safety and efficacy. Present in small quantities in the oil extracted from the species of *Pelargonium graveolens* (geranium, Geraniaceae), the DMAA has been added to dietary supplements indiscriminately without conclusive scientific evidences about the safe doses for consumption and its adverse effects. Thus, we highlight the importance of the identification of DMAA in the essential oil of *Pelargonium* species, especially from Brazil. Essential oils of six countries were analyzed and compared. The analyses were performed on a 5975C gas chromatograph coupled with a 7890A mass detector (Agilent Technologies, CA, USA). A silica DB-5 column, 30 m x 0.25 mm x 0.25 mm, was employed for chromatographic separation. Oven temperature was raised from 60 to 300 at 3°C/minute. Helium (1 mL/min) was employed as the carrier gas. Mass detector was operated in electronic ionization mode at 70Ev. Source temperature, quadrupole and injector were set at 230°C, 150°C and 220°C, respectively. Oil components were identified by comparison of both mass spectra and linear retention indices of n-alkanes with literature. In the oil from the leaves, obtained by hydrodistillation, were identified between 26 and 43 compounds of oils from Brazil, China, France, Egypt (two different samples), Albania, South Africa (two different samples). The oils present mainly oxygenated monoterpenes and their esters. The major components were citronellol, geraniol, citronellyl formate, geranyl formate and geranyl acetate, with citronelol (22.5-40.5%) and geraniol (5.8-18.7%) as the main components at oils from China, France, South Africa, Albania and Egypt. The oil from Brazil and South Africa (different producer) presents as main components the geraniol (38.7-39.8%) instead citronellol (10.7-11.3%). The DMAA was not identified in oil from Brazil and other countries. Until now, studies demonstrate the presence of DMAA only in oils from China (1,2,3). However, we need to perform more accurate sample preparation and analysis through confirmatory techniques, to prove your absence in the oils, and so, confirm that these samples obtained from six different countries, especially from Brazil and China, do not contain DMAA in your composition.

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