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Standardization of commercial cinnamon essential oils by gas chromatography-mass spectrometry analysis

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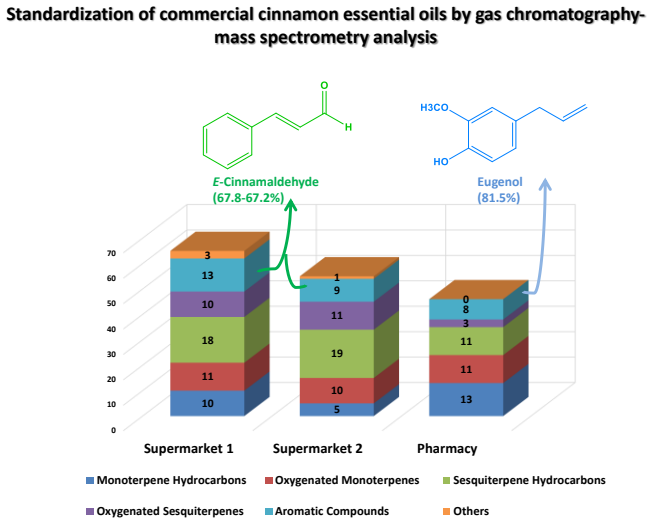
Graphical Abstract



Abstract

The chemical composition of seven *Cinnamomum zeylanicum* Blume essential oils traded as spices and medicinal items has been determined by gas chromatography-mass spectrometry analysis. Eighty-two compounds accounting for 95.39-99.03% of the total essential oil were identified. Qualitative and quantitative differences were found in the essential oils obtained from dried and powdered cinnamon bark purchased at supermarkets and cinnamon leaf essential oil from a pharmacy. The aromatic compound *E*-cinnamaldehyde (67.84±3.15%; 67.16±5.05%) was the principal component of the essential oil in commercial cinnamon bark employed as a spice; whereas eugenol was the main compound (81.51±0.21%), in commercial cinnamon leaf essential oil for medicinal purposes. The qualitative and quantitative differences in the analyzed essential oils can affect the organoleptic properties, mainly the spice's flavor as well as the pharmacological properties of the cinnamon (bark and leaf) essential oils.