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Antioxidant activity of cinnamon (*Cinnamomum Zeylanicum*, Breyne) extracts.

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Abstract

JUSTIFICATION: Lipid oxidation is one of the major changes that can occur during processing, distribution, storage and final preparation of foods. The oxidation could be prevented by adding synthetic or natural antioxidants in spite of safety of synthetic ones has been questioned. This situation promotes increasing demand for food additives of natural origin.

OBJECTIVE: The objective of this study was to evaluate the antioxidant activity of cinnamon extracts.

METHODS: Cinnamon samples were obtained at local market, milled (32 mesh sieve) and submitted to sequential extraction using as solvents: ether, methanol and water. The antioxidant activity in the extracts was measured by the b-carotene/linoleic acid system, at 50 degrees C and absorbances reading at 470 nm every 15 min intervals for 120 min. Two controls were used in this determination: one with synthetic antioxidant (BHT, 100 ppm) and other without antioxidant. The water extract was fraccionated using silica Gel 60 and 60G and through chromatographic processes: thin layer, (T.L.C.) and column, using BAW as mobile phase and ethylacetate, petroleum ether, methanol and water as eluent, respectively.

RESULTS: The etheric (0.69 mg), methanolic (0.88 mg) and aqueous (0.44 mg) cinnamon extracts, inhibited the oxidative process in 68%; 95.5% and 87.5% respectively. The BHT control inhibited 80% oxidation. The spray reagents (1) beta-carotene/linoleic acid and (2) Fe Cl₃/K₃ Fe (CN)₄ 1% sol, showed spots in T.L.C. with antioxidant activity (1) and blue color (2), indicating the presence of phenolic compounds with R_f values of 0.50. Five fractions were obtained by column partition with antioxidant activity and the presence of phenolic compounds.

SIGNIFICANCE: These results suggest that the cinnamon extracts can be used as food antioxidant together with the improvement of food palatability. Further studies are in processing of analysing the synergic association of extracts with synthetic antioxidant and to identify compounds with antioxidant activity in cinnamon extracts.



MeSH Terms, Substances



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