Antioxydant activity of a biopolymer extract from punica granatum by the DPPH method

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Introduction & Objectives:

The objective of this work is the use of a biopolymer in a study of antioxidant activity by the DPPH method. In addition, the biopolymer used in this study is obtained from a plant, purified and characterized by different spectroscopic techniques (FT-IR, ^{1}H NMR and ^{13}C NMR).

Methodology (Material and methods):

The antioxidant activity study was performed using different concentrations of dilution biopolymer. Samples of various concentrations (0.25-300) mg/ml (biopolymer/distillate water and ethanol) were prepared. The antioxidant activity was measured by the total antioxidant capacity DPPH (1,1-diphenyl-2-picrylhydrazine). The ethanolic solutions of DPPH were mixed with 1ml of each sample of diluted biopolymer solution. All samples were analyzed after 30mn of incubation in the dark using UV-Visible spectrophotometer at 517nm.

Results and Discussion:

The biopolymer samples tested in the antioxidant activity have concentrations varying from (0.25-300) mg/ml. The free radical scavenging activity of the biopolymer was measured by the total antioxidant capacity DPPH (1,1-diphenyl-2picrylhydrazine). The free radical scavenging obtained of biopolymer is 91.44% (expressed as percentage of DPPH free radical activity) at 40ppm. The IC_{50} is 0.77mg/ml

Conclusion:

The biopolymer employed in this investigation gave excellent results; it gave a DPPH inhibition percentage of 91.44% at 40mg/ml of biopolymer and the IC_{50} of biopolymer is 0.77mg/ml.

Keywords: Biopolymer, Extraction, antioxidant activity, DPPH.

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