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Free radical scavenging activity

PLOS One

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ABSTRACT

Free radical scavenging assay was measured using 1,1-diphenyl-2-picrylhydrazyl (DPPH) free radical test. To each aqueous extract 3 mL of 0.1 mM solution of DPPH in methanol was added (Fermont, Monterrey). Tubes were shaken vigorously and allowed to stand for 30 min at room temperature in the dark. Absorbance was measured at 517 nm. Distilled water was the control and ascorbic acid served as the standard. Free radical scavenging activity was expressed as inhibition percentage and was calculated using the formula $(A_0 - A_1)/A_0 \times 100$, where A_0 was the control absorbance and A_1 was the sample absorbance. All tests were performed in triplicate and antioxidant activity was quantified by a regression analysis of percentage of free radical scavenging (%) versus phenolic compound concentration in the aqueous extract; this was defined as an IC_{50} value, which is the amount of antioxidant necessary to decrease the initial DPPH radical concentration by 50%. Ascorbic acid was used as control.

MATERIALS

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1,1-diphenyl-2-picrylhydrazyl Sigma
 Aldrich

methanol Sigma
 Aldrich

- 1** To each aqueous extract 3 mL of 0.1 mM solution of DPPH in methanol was added. Tubes were shaken vigorously and allowed to stand for 30 min at room temperature in the dark.
- 2** Absorbance was measured at 517 nm. Distilled water was the control and ascorbic acid served as the standard.
- 3** Free radical scavenging activity was expressed as inhibition percentage and was calculated using the formula $(A_0 - A_1)/A_0 \times 100$, where A_0 was the control absorbance and A_1 was the sample absorbance.
- 4** Antioxidant activity was quantified by a regression analysis of percentage of free radical scavenging (%) versus phenolic compound concentration in the aqueous extract; this was defined as an IC_{50} value, which is the amount of antioxidant necessary to decrease the initial DPPH radical concentration by 50%. Ascorbic acid was used as control.