Phytochemical Investigation, Antioxidant and Anti-Inflammatory Activities of *Moringa oleifera* Extracts from Bechar Region

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Abstract

Moringa oleifera plant has been widely used for a vast number of folkloric medicinal purposes. The aim of this study was characterize the phytochemicals present in *Moringa oleifera* leaves extracts and study their Antioxidant and anti-inflammatory activities and to analyze their phenolic and flavonoid constituents.

Moringa oleifera plant were extracted with three different solvents namely, water, methanol, ethanol and chloroform. The extracts were analyzed for their total phenolic content (TPC), total flavonoid content (TFC), antioxidant (AA) and anti-inflammatory activity.

The in vitro antioxidant activity was evaluated by the use of the 1,1- diphenyl-2-picryl hydrazyl (DPPH) scavenging assay which showed the reflux extracts to have the highest reducing power, though lower than that of the standard, acid ascorbique and evaluation of the antibacterial and anti-inflammatory activity.

The highest amount of total phenolic was found in ethanol extract (947± 100 EAG/g) and gallic acid equivalens respectively. The highest amount of flavonoid content was found in water, chloroform extract of *Moringa oleifera* followed, which were (63,26 ± 0,7 and 67,25±3,28 EAG/g) respectively and quercetin equivalents.

The maximum DPPH free radical scavenging activity was shown in methanol and ethanol extract (IC50= 0,293 ±0,035 and 0,485 ±0,009 mg/ml respectively). The highest activity of anti-inflammatory assay was observed in methanol and aqueous extract (229,14±0,61 and 177,8±10,52 respectively).

These results suggest that leaves *Moringa oleifera* are rich in metabolites and possess a high antioxidant and anti-inflammatory activity that could contribute to prevention of chronic diseases such as cancer, among others.

Keywords

Natural product, *Moringa oleifera*, phenolic, flavonoids, Antioxidant activity, Anti-inflammatory activity.