Antioxidant activity evaluation from *Artemisia gorgonum* extracts

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Introduction

Artemisia gorgonum **(Asteraceae) known as "losna or lorna" (fig. 1) is used in Cape Verde in traditional medicine to treat inflammation, fever and gastroenteritis.[1] The sesquiterpene lactone ridentin 1, furofuran lignan sesamin 2 and the flavonoid artemetin 3 (fig.2), isolated from *A. gorgonum* showed anti-plasmodium *in vitro* activity.[2,3]**

Fig.1

Recently, sesquiterpene lactones (*seco*-guaianolides) isolated from this plant, showed higher phytotoxic activity, and the authors suggested that they can be used as inspiration to develop new herbicides.[4]

A few years ago was established that *A. gorgonum* volatile oil displays several biological properties including outstanding antioxidant activity.[5]

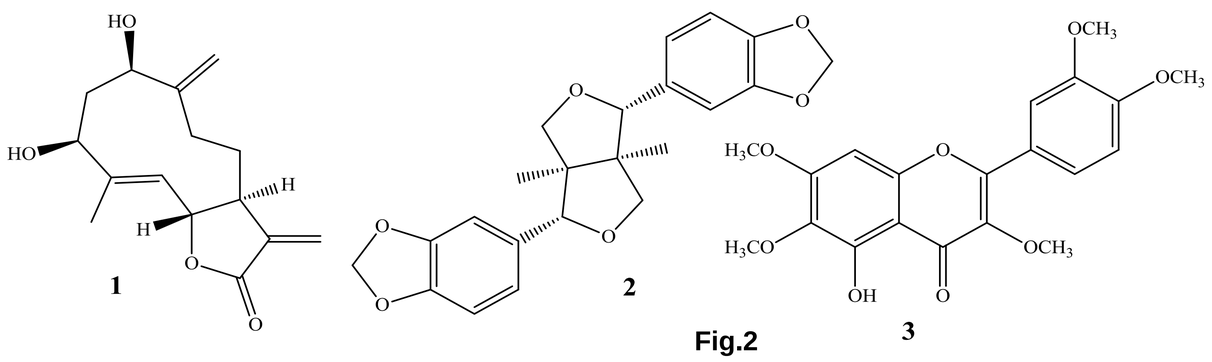


Fig.2

However, to our best knowledge, no study on the potential antioxidant of other *A. gorgonum* extracts has been published.

Material & Methods

Plant collection and extracts preparation

Leaves of *A. gorgonum* were collected in Serra Malagueta Natural Park, Cape Verde, Santiago Island, in January 2012.

Four portion (500 mg each) of dried and powdered leaves of *A. gorgonum* were extracted with 20 mL of chloroform, methanol-chloroform (1:1), methanol and ethanol-water (7:3), C for during 30 minutes at 70º and then maintained at room temperature for 24 hours.[6]

Antioxidant Activity

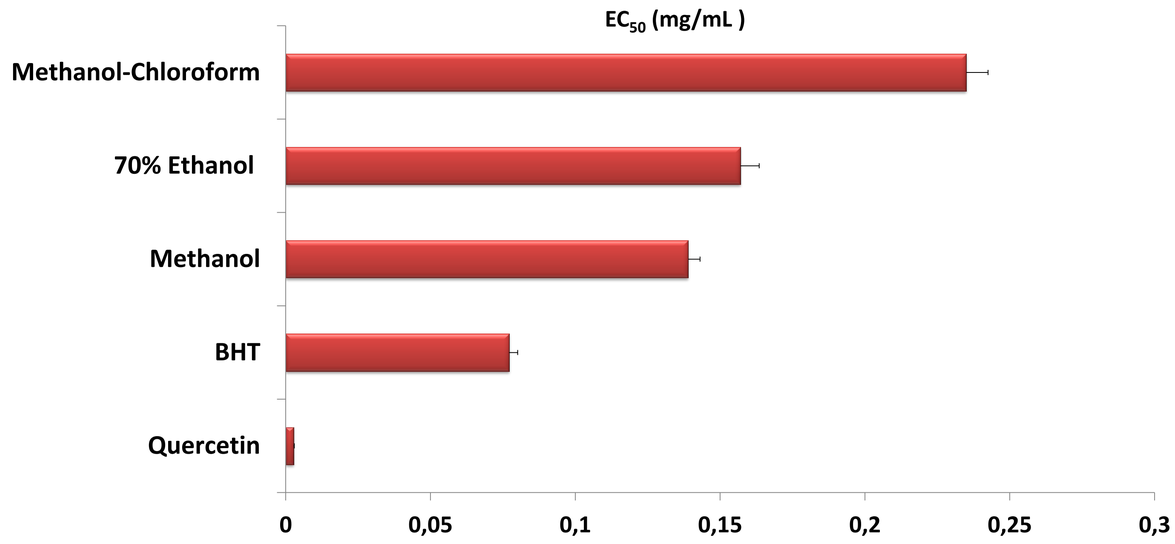
❖Antioxidant activity was assayed by the DPPH (2,2-diphenyl-1-picryl hydrazyl (DPPH)) radical scavenging method.[7] Briefly, to different concentration of ethanolic solutions of each extracts were added fixed volume of DPPH ethanolic solution and solvent (ethanol) to obtain in each case a fixed total volume. In each assay, a control was prepared, in which the sample or standard (quercetin and BHT) was substituted by the same amount of solvent.

❖The absorbance of each solution was measured at 517 nm against a corresponding blank (ethanol solution) after 30 min. in dark at room temperature. The percentage of DPPH inhibition was calculated as follows

$$\%\ DPPH\ Inhibition = \frac{A\ control - A\ sample}{A\ control} \times 100$$

Results and Discussion

- **The extracts antioxidant activity was evaluated using the DPPH assay. Quercetin and BHT (butylated hydroxytolueno) were used as positive control.**
- **To our knowledge, this is the first study providing data on antioxidant activities of the Cape Verde *A. gorgonum* extracts.**



❖The plant extracts exhibit different EC_{50} and in all cases higher than the standard compounds;

❖ In the case of the chloroform extract was not possible to obtain the EC_{50} and the methanol-chloroform extract showed weak potential antioxidant as can be inferred from the EC_{50} obtained;

❖ The methanolic extract presented the higher radical scavenging activity, although much higher than the standard compounds (BHT and quercetin);

❖The results obtained suggest that *A. gorgonum* can be a potential source of natural antioxidant compounds;

❖Chemical composition of the most active extracts will studied and hopefully the obtained natural compounds will enlighten the extract antioxidant properties.

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