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Antioxidant and anticholinesterasic activities of Morella faya (Aiton) Wilbur extracts

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- Congress Abstract

Morella faya (Aiton) Wilbur (Myricaceae), formerly *Myrica faya*, is a shrub or small tree native to Macaronesia, Spain and Portugal and invasive in Hawai'i [1]. In the present study, bioactivities of extracts from leaves and bark collected in S. Miguel, Azores, were determined. Extracts were prepared by sequentially extracting the dry material with dichloromethane and acetone at room temperature. The antioxidant activity of the extracts was determined by the DPPH radical scavenging and $FeCl_3$ reduction assays, total phenolics by the Folin-Ciocalteau method and *in vitro* anticholinesterasic (anti-AChE) activity by a modification of the Ellman method [2]. The dichloromethane extracts did not present any of these activities between 4.9 and 1250 µg/mL. Both acetone extracts presented a high antioxidant activity. For the DPPH scavenging activity, EC_{50}= 17.7 ± 0.13 and 16.9 ± 0.36 µg/mL for leaves and bark, respectively and 4.5 ± 1.1 µg/mL for quercetin (positive control). In the $FeCl_3$ reduction assay, EC_{50} values were 3.8 ± 0.40 and 3.9 ± 0.16 µg/mL for leaves and bark respectively, and 0.995 ± 0.06 µg/mL for gallic acid (positive control). The acetone extracts also showed anti-AChE activity, stronger for the bark, with IC_{50}= 82.9 ± 6.16 µg/mL and weaker for the leaves, with IC_{50}= 333.0 ± 27.3 µg/mL, which are interesting values for whole extracts. Anti-AChE activity was inversely proportional to the amount of phenolic compounds, 639.3 ± 17.8 mg GAE/g of leaf extract and 95.3 ± 6.55 mg GAE/g of bark

extract, therefore the compounds responsible for this effect do not belong to this group. The antioxidant activity cannot be explained by the amount of these compounds alone, since it was quite similar for both acetone extracts and did not therefore reflect the differences in polyphenol content.

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Keywords: Morella faya, antioxidant, anticholinesterasic

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