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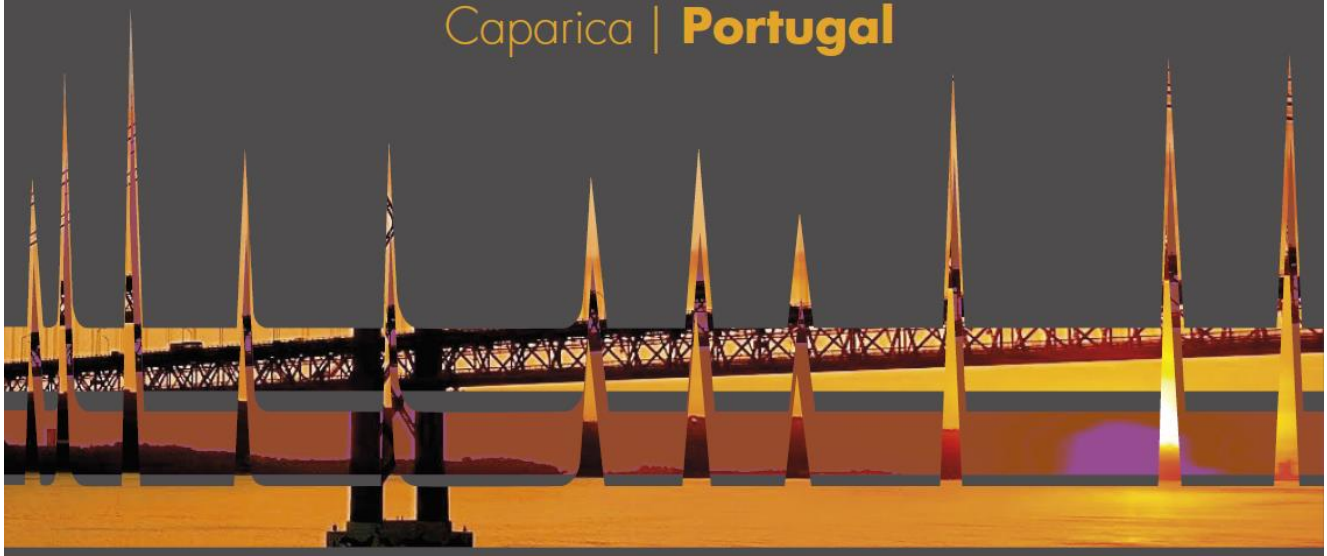

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P13 Insights into the phenolic composition and bioactive properties of *Aloe vera* flower

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Aloe vera leaf has been subject of several scientific studies that aimed to characterize compositional and biological properties.[1,2] However, the flower (**Figure 1**) remains an underexploited plant part. Aiming the prospection of bioactive phytochemicals in this plant matrix, this study was focused on the analysis of phenolic compounds and *in vitro* antioxidant, antimicrobial, and tyrosinase inhibition activities. A dried powder of *Aloe vera* flower underwent a solid-liquid extraction with an hydroethanolic mixture for 1 h, and the phenolic profile of the obtained dried extract was characterized by HPLC-DAD-ESI/MS^n. Regarding biological activities, the antioxidant activity was evaluated by the cellular assays of OxHLIA and TBARS, using sheep erythrocytes and porcine brain cells as oxidizable substrates, respectively, and by the β-carotene bleaching inhibition assay; the antimicrobial activity was screened against skin-associated pathogenic bacteria and fungi; and the capacity to inhibit the activity of the tyrosinase enzyme was tested using L-DOPA as a substrate. It was found a phenolic profile constituted mainly by the flavonoids apigenin-6,8-*C*-diglucoside, apigenin-2''-*O*-pentoxide-*C*-hexoside, apigenin-6-*C*-glucoside, and traces of luteolin glucoside derivatives (accounting for 93.4% of the extract), and by the phenolic acid 5-*O*-caffeoylquinic acid. As far as we know, it is the first time that some of these compounds are described in *Aloe vera* flower. No anthraquinone glycosides were detected in this part of the plant. The extract revealed an interesting antioxidant activity, being able to protect the erythrocyte membranes and the β-carotene from the free radical generated in the *in vitro* reaction system. It was also able to inhibit and kill multidrug-resistant bacteria such as *Pseudomonas aeruginosa* and *Escherichia coli* and some fungi, including *Candida albicans*. It also inhibited the tyrosinase enzyme activity, which translates its potential as a skin whitening agent. Based on these results, it was concluded that the *Aloe vera* flower could be exploited by industrial sectors interested in bio-based ingredients due to its composition in flavonoids and antioxidant, antimicrobial, and tyrosinase inhibition properties.

Figure 1: *Aloe vera* flower.

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