



2nd Symposium on Medicinal Chemistry of University of Minho

8 May 2015

SCHOOL OF SCIENCE, CHEMISTRY DEPARTMENT

Campus de Gualtar

Bioactive properties of *Mentha spicata* L. infusions: a comparison between standard and reserve lots

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Mentha spicata L., commonly known as spearmint and belonging to the Lamiaceae family, is widely used as infusion due to its exquisite and outstanding flavour [1]. This medicinal and aromatic plant is also known for its antioxidant properties due to naturally occurring active compounds, such as phenolic compounds including flavonoids. [2] Recently, with the increased consumption of herbal infusions, several novel products are emerging and different lots with distinct compositions of the same plant are available for herbal infusions preparation [3]. As an outstanding example, the standard lots have evolved to "reserve lots", which are prepared from the apical leaves of the plant, presenting different compositions and sensorial characteristics. In the present study, the aim was to evaluate and compare the antioxidant activity as well as the bioactive compounds (phenolics and flavonoids) content of *M. spicata* infusions prepared from standard and reserve lots, in order to understand the potential differences between both batches. The antioxidant activity was assessed by different assays (free radicals scavenging activity, reducing power, and lipid peroxidation inhibition), whereas total phenolics and flavonoids were estimated by colorimetric assays.

The best results of antioxidant activity were achieved with the reserve lot that presented the lowest EC₅₀ values in all the assays performed (152 to 336 µg/mL) in comparison to the standard lot (173 to 546 µg/mL). Both the infusions revealed higher potential in lipid peroxidation inhibition, in concentrations of 173 (standard tot) and 152 µg/mL (reserve lot), followed by reducing power (301 and 198 µg/mL, respectively) and free radicals scavenging activity (546 and 336 µg/mL). As expected from the antioxidant assays results, the amounts of total phenolics and flavonoids were higher in the reserve lot (2.86 and 0.378 mg GAE/mL, respectively) when compared to the standard lot (1.83 and 0.268 mg GAE/mL), which is in accordance with the well-known bioactivity of these compounds. Thus, in our perspective, this study represents a major contribution of scientific information, allowing the consumer to understand the increased benefits of these new emerging tea products.

Acknowledgments:

The authors are grateful to "Cantinho das Aromáticas" for samples providing and to FCT (Portugal) for financial support to CIMO (PEst-OE/AGR/UI0690/2014).

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