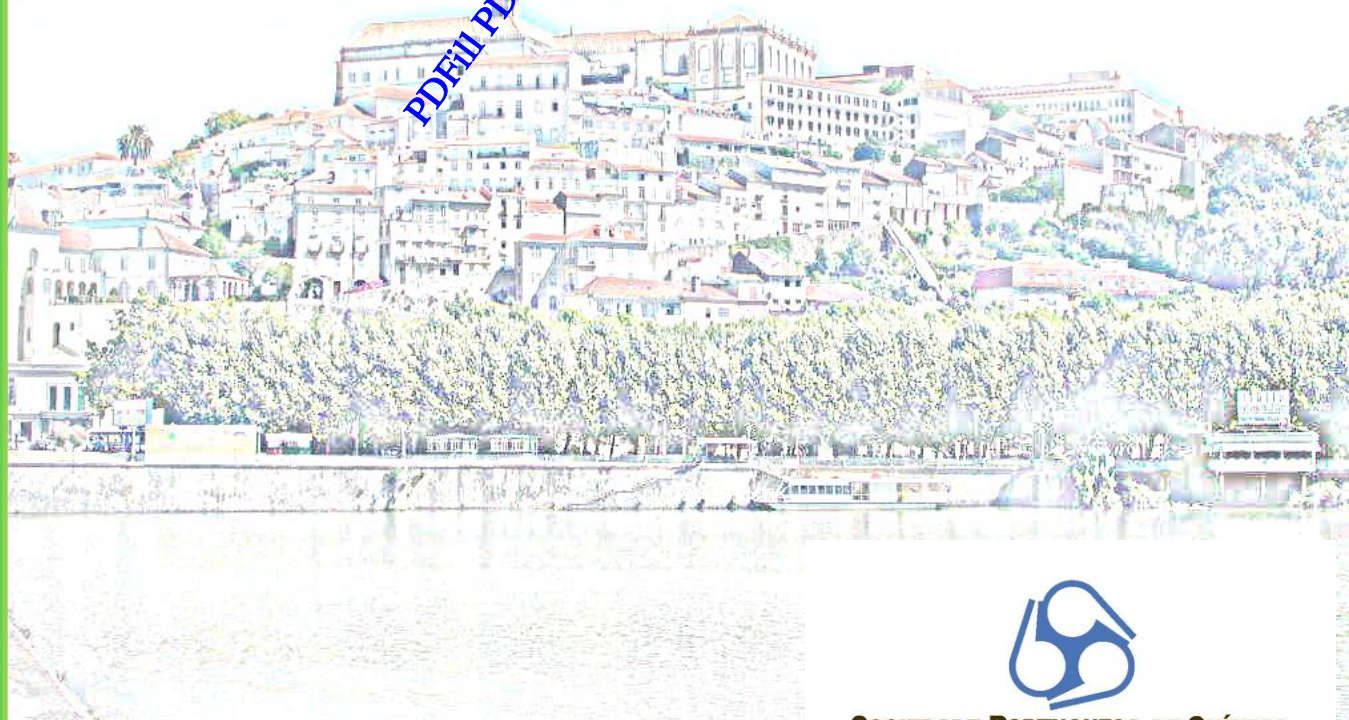


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# XXIV ENCONTRO NACIONAL da Sociedade Portuguesa de Química



LIVRO DE RESUMOS  
BOOK OF ABSTRACTS



SOCIEDADE PORTUGUESA DE QUÍMICA

## **P-105 CHEMICAL CHARACTERIZATION AND BIOACTIVE EFFECTS OF DECOCTED MELISSA OFFICINALIS L. AND THE POSSIBILITY OF FOOD INCORPORATION**

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*Melissa officinalis* L. (lemon balm) has been consumed as infusions and decoctions for hundreds of years. Its consumption is linked with various health benefits like the relief of headaches, rheumatism, digestion, neurodegenerative disorders and also antitumor, antioxidant and anti-inflammatory effects [1]. Herein, the chemical characterization (polyphenols, free sugars, tocopherols and organic acids) of its decoctions is presented, along with the reports of its antimicrobial, antioxidant and antitumor activity. The most abundant polyphenols, detected through HPLC-DAD-ESI/MS, were rosmarinic and lithospermic A acids, while fructose was the only free sugar detected by HPLC-RI. The most abundant tocopherol was  $\gamma$ -tocopherol detected through HPLC-FL, while in terms of organic acids, quinic acid was the most representative one (HPLC-PDA). Furthermore, after antimicrobial and antifungal screening, the most sensitive species were *Pseudomonas aeruginosa*, *Salmonella thyphimurium*, and *Penicillium funiculosum*. The inhibition of the growth of two human tumor cell lines, MCF-7 and HepG2, was also observed, along with very high free radical scavenging activity and reducing power. *M. officinalis* aqueous extracts, namely obtained by decoction, could be strong candidates to be incorporated into foodstuffs regarding antioxidant and antimicrobial effects, working as natural additives, substituting the synthetic ones which have been losing interest due to consumer preferences to natural and healthier products. Furthermore, our research group is working in this proof-of-concept incorporating *M. officinalis* extracts in "Serra da Estrela" cheese.

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[1] Martins, E. N.; Pessano, N. T. C.; Leal, L.; Roos, D. H.; Folmer, V.; Puntel, G. C.; Rocha, J. B. T.; Aschner, M.; Ávila, D.S.; Puntel, R.L. *Brain Res. Bull.* **2012**, 87, 74-79.