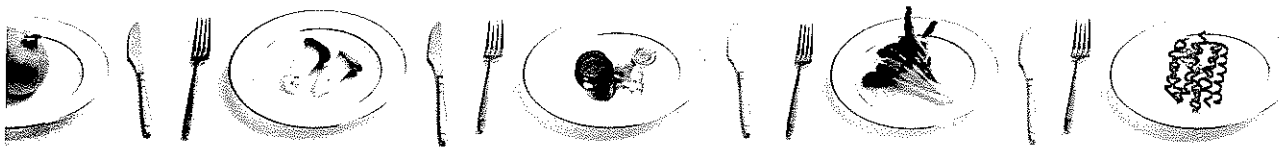

EuroFoodChem XV

FOOD FOR THE FUTURE

- the contribution of chemistry
to improvement of food quality

Book of Abstracts

Copenhagen, Denmark
5-8 July 2009

Ab132:
Characterization of new phenolic derivatives in Portuguese propolis by electrospray mass spectrometry

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Keywords: electrospray mass spectrometry, phenolic compounds, propolis

Propolis is a resinous substance collected by honeybees from tree buds, comprising plant exudates, secreted substances from bee metabolism, pollen and waxes. This product is widely used in traditional medicine [1] and it has recently gained popularity as a health food supplement. Currently, it is extensively used in foods and beverages, and it is claimed to improve health and prevent diseases such as inflammation, heart disease, diabetes and cancer [2].

The composition of raw propolis is extremely complex and dependent on its source. Its main constituents are beeswax, volatiles and resin, this latter mainly composed by flavonoid aglycones, aromatic acids and their esters [3].

This research outlines an extensive characterization of the phenolic composition of a Portuguese propolis sample. For that, an ethanolic extract was prepared, fractionated by HPLC and the identification of the phenolic compounds was done by electrospray mass spectrometry in the negative mode. This technical approach allowed the identification of 38 phenolic compounds in the Portuguese propolis sample, including seven that were described for the first time. Two of these new compounds had [M-H]− ions at m/z 403, and the others had [M-H]− ions at m/z 433, m/z 461, m/z 417, m/z 475, and m/z 565. In general, the molecular weight of these compounds was higher than the common phenolic compounds of propolis and their fragmentation pattern suggested that they belong to the flavonoid family probably linked with a phenylpropanoic acid moiety in the position C3 (m/z 403, 433, 461, 475) and C5 (m/z 403, 417), corresponding to chrysin and pinocembrin derivatives. The ion at m/z 565 seems to be a p-coumaric ester derivative dimer.

Acknowledgement: Soraia I. Falcão thanks FCT for a PhD grant (SFRH/BD/44855/2008).

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