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## ANTIOXIDANT ACTIVITY OF PORTUGUESE HONEY SAMPLES

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Reactive oxygen species are known to be implicated in many cell disorders and in the development of many diseases including cardiovascular diseases, atherosclerosis, cataracts, chronic inflammation, or neurodegenerative diseases such as Alzheimer's or Parkinson's disease. Thus, synthetic antioxidants are widely used in food industry, but because of their toxic and carcinogenic effects, their use is being restricted. The pursuit for novel natural sources of bioactive compounds, namely those who present antioxidant activity, has been acquiring higher significance, since these compounds may contribute for the prevention of diseases in which free radicals are implicated. Honey is a natural food, rich in essential nutrients, produced by different species of bees. The use of honey in medicine is an old tradition being its medicinal properties known since ancient times. Its high content in phenolic compounds might contribute to important antioxidant properties.

In this study, the antioxidant activity of two honey samples from Trás-os-Montes region (light and dark) were evaluated through chemical and biochemical assays: DPPH (2,2-diphenyl-1-picrylhydrazyl) radical scavenging activity, reducing power, inhibition of  $\beta$ -carotene bleaching, and inhibition of lipid peroxidation in pig brain tissue through formation of thiobarbituric acid reactive substances (TBARS). For all the methods  $EC_{50}$  values were calculated in order to evaluate the antioxidant efficiency of each sample. The total phenols and flavonoid contents were also obtained and correlated with antioxidant activity. The dark sample revealed better antioxidant properties, presenting lower  $EC_{50}$  values than the light sample. The highest antioxidant contents (phenols and flavonoids) were also found for the first sample.