Antioxidant activity of polyphenolic extract of monofloral honeybeecollected pollen from mesquite (Prosopis juliflora, Leguminosae)

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Abstract
The antioxidant capacity related to the phenolic composition of monospecific honeybee-collected pollen extract from the mesquite tree (Prosopis juliflora) from Durango, Mexico, was evaluated in an in vitro-biological system (as inhibitor of lipid peroxidation on mouse hepatic microsomal preparations) and in an in vivo system (on homogenized liver of bromobenzene-intoxicated mice) by quantification of thiobarbituric acid-reactive substances (TBARS). The comparison of results obtained from these two different systems was also made.

The results obtained suggest that pollen of P. juliflora is an important source of flavonoids, which can be considered as natural antioxidants. Mesquite pollen extracts showed antioxidant activity related to the flavonol concentration in both the in vitro-biological system and the in vivo system with a lower activity in the latter of these systems. Under in vivo conditions and in those in which a state of oxidation in not induced, a high concentration of flavonols in the extract of mesquite pollen can have a pro-oxidant effect.

Keywords: Prosopis juliflora; Mesquite; Honeybee-collected pollen; Phenolic profiles; Antioxidant capacity