Immunodetection of MRJP1 in honey and pollen *pellet*

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The aim of this study was to investigate the protein profile and presence of major royal jelly protein (MRJP1) in samples of pollen *pellet* and honey produced by *Apis mellifera* honeybee using affinity purified anti-MRJP1. Honey samples exhibited different electrophoresis protein profile. Among these samples we observed similar polypeptides with 140, 118, 84, 72, 51, 44, 33, 28, 17 and 9 kDa. Some honey samples showed distinct polypeptides with 20 (*Alternanthera tenella* flowers) and 26 kDa (*Myracrodruon sp* flowers). Pollen *pellet* samples showed a protein profile with 69, 53, 49, 31 and 29 kDa polypeptides. Immunoblotting of the honey samples revealed polypeptides of 130, 118, 51 and 44 kDa. The 51 kDa polypeptide migrates similar to MRJP1 and was the most intense band detected. The anti-MRJP1 cross reacted only with a 53 kDa polypeptide in the pollen *pellet*. Therefore, this protein is a regular component of honeybee products. Data from the literature suggested that the MRJP1 present in honey and pollen may confer to these products physiological properties similar to royal jelly, such as enhanced proliferation, suppression of allergic reactions, anti-fatigue effect, and antihypertensive activity, broaden their potential application in pharmacy and food industry. In this way, MRJP1 could be used as potential biomarker for physiological evaluation of honey and pollen *pellet* as a functional food.

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