

**DIFFERENTIAL PATTERN OF PROTEIN EXPRESSION IN *Apis mellifera*
(HYMENOPTERA: APIDAE) BRAIN**

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The colonies of *Apis mellifera* are constituted by drones, workers and queens. Males fecund the queen, which in turn both lay the eggs and influences the workers' physiology and behavior. The workers are responsible for all other tasks of colony maintenance. Honeybees display a rich behavioral repertoire and have long been recognized as a model system for the study of social interactions. Different patterns of morphology, physiology and behavior are reflected by a different profile of protein expression in the brain of each caste. The present work analyzed the pattern of proteins expression in the brain of workers, queens and males recently-emerged of *A.mellifera* through 2D electrophoresis. Analyzing the gel images it was verified about 430 spots (pI=3-10, MW=14-120KDa) for workers, 310 (pI=4-7, MW=14-76KDa) for queens and 205 (pI=4-7, MW=12-150KDa) for drones. Comparing the obtained profiles, it is observed that approximately 10% of the total proteins appear in all castes. There is approximately 40% of matching proteins between workers and queens, from whose the large most are downregulated. A comparison between the profiles of males and females in general, revealed 25% of matching proteins, with 60% of these proteins differentially expressed. These results supply preliminary informations about the proteins profiles involved with the different biological processes related to several tasks carried out by workers, queens and drones in the colony.

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