



Effect of immune challenge on production of queen pheromones in the honeybee

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Inter-caste communication in social insects relies heavily on queen and fertility pheromones. Mechanisms of production of these pheromones and physiological factors affecting fertility signaling are not yet well understood. Our study explores the effect of immune challenge on production of QMP and fertility signals in the honeybee. Our findings indicate that queens subjected to immune challenge display lower proportions of fertility signaling esters in their Dufour's gland and lower ratios of queen-like to worker-like substances in their mandibular glands. We also found that immune challenge induced a slight reduction of expression of genes involved in pheromone biosynthesis. Beyond that our study explores the correlation between expression of putative biosynthetic genes and production of semiochemicals in the mandibular glands.