



Queen pheromones did not inhibit reproduction but maintain social cohesion in an Orchid bee

Author(s): Fabio Nascimento, Fabio Nascimento , Aline Candida Andrade , Giuliano Cesar Clososki , Rafael Augusto Soldi , Fabio Nascimento

Institution(s): Departamento de Biologia, Universidade de São Paulo, Ribeirão Preto, Brazil ; Departamento de Genética, Universidade Federal de São Carlos, São Carlos, Brazil ; Departamento de Física e Química, Faculdade de Ciências Farmacêuticas de Ribeirão Preto, Universidade de São Paulo ; Departamento de Física e Química, Faculdade de Ciências Farmacêuticas de Ribeirão Preto, Universidade de São Paulo ; Departamento de Biologia, Universidade de São Paulo, Ribeirão Preto, Brazil ; Departamento de Biologia, Universidade de São Paulo, Ribeirão Preto, Brazil

In animal societies, chemical communication provides an adaptive discriminatory mechanism by which group members evaluate each other individual variability. Reproduction is a major trait in which pheromones can be used to signal individual status. In some social insects, queens and workers are morphologically indistinguishable, dominant individuals can suppress subordinates' reproduction by either physical aggression or secondarily through odor recognition. Here we showed that chemical cues of *Euglossa melanotricha* dominants may be used as an honest signal of reproduction. We experimentally demonstrated that the cuticular hydrocarbon extract but not putative synthetic compounds signal the dominant's presence and also help to keep social cohesion in such incipient societies.