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*Royal jelly of Apis cerana japonica acts as a bee-attracting pheromone*

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The flower of the oriental orchid *Cymbidium floribundum* is known to attract the Japanese honeybee *Apis cerana japonica* not only workers but also drones and queen, that is, to attract even swarm and absconding-bees. A mixture of 3-hydroxyoctanoic acid (3-HOAA) and 10-hydroxy-(E)-2-decenoic acid (10-HDA) was identified as the active principles from the orchid flower. Both compounds are also mandibular gland components of worker honeybees (*Apis cerana japonica*) with related compounds. In this study, aliphatic compounds in the mandibular gland of nurse and forager workers were analyzed by GC-MS. Aliphatic compounds in royal jelly made in the mandibular gland were also analyzed. In addition, by a bioassay, a queen cell containing royal jelly was demonstrated to attract bees and the royal jelly constituents which have attraction activity were identified. Finally, it was shown that royal jelly acted as a bee-attracting pheromone.