



## **The royal pheromones of wasp colonies**

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Cuticular hydrocarbons act as conserved queen signals across several independently evolved lineages of social insects, including ants, bees and wasps. An important evolutionary question that arises is what mechanisms keep these queen signaling systems honest, and stable over evolution. If queen signals are honest signals, then this would explain why queen pheromones evolve only slowly, as there would be little selective pressure for queens to evolve new compounds or mechanisms to stop the offspring workers from reproducing. Signal honesty would also imply that queen pheromone production should correlate strongly with the queen's actual reproductive potential. I would like to show that a common signalling pathway underlies the pheromone-induced reproductive division of labour in wasps by the identification and comparison of the active queen pheromone compounds in Vespidae wasps. Furthermore, I will discuss how these hydrocarbon differences between queens and workers can be used in a complementary way of communication.