

# What do taste receptors tell blood-sucking bugs about food quality?

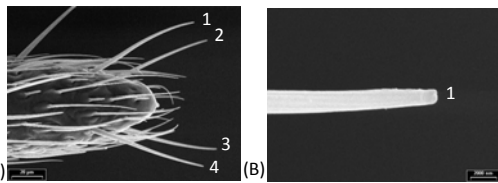


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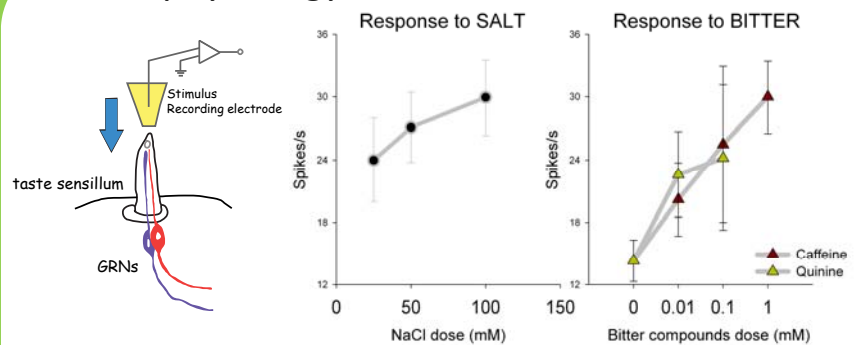
Taste sense enables insects to discriminate among safe-nutritious food sources from toxic substances present in the environment.

**Objective 1:** Characterize the electrophysiological response of antennal taste sensilla to salts and bitter compounds.



(A) Scanning electron microscopy of the antennal flagellum (A) and a detail of a taste sensilla (B)

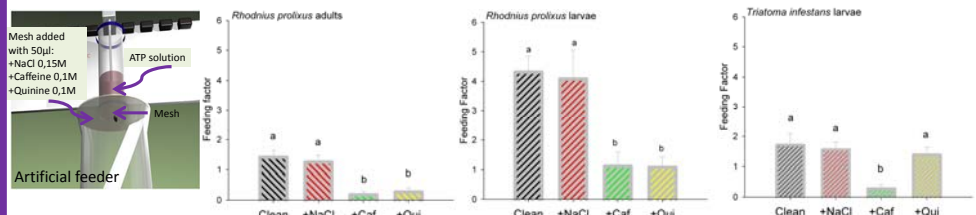
## Electrophysiology



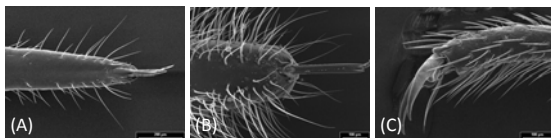
Antennal taste sensilla of bugs respond in a dose-dependent manner to salt and bitter compounds, like quinine and caffeine.

**Objective 2:** To analyze whether the feeding response can be modulated by input taste information provided by the contact surface.

## Behavioural assays



Contacting a bitter (toxic) surface prevents feeding in bugs of 2 species



Scanning electron microscopy of the rostral segment of the *R. prolixus* (A) and *T. infestans* (B); and a leg of the *R. prolixus* (C)

We found taste receptor neurons responding to salt (NaCl) and bitter compounds, like caffeine and quinine, on the antenna of *R. prolixus*. Moreover, whenever insects contact a surface added with bitter compounds they avoid feeding on a diet supplemented with the phagostimulant ATP. Bitter compounds prevents insect to feed on a diet. Contact chemoreception could provide insects with information about the putative quality of food.

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