

Vernier, CL, IM Chin, B Adu-Oppong, JJ Krupp, J Levine, G Dantas, Y Ben-Shahar. 2020. The gut microbiome defines social group membership in honey bee colonies. *Science Advances* 6: eabd3431. The original text can be found at [DOI: 10.1126/sciadv.abd3431](https://doi.org/10.1126/sciadv.abd3431) under a CC BY-NC license.

Translators

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Intended Audience: High School Students.

Language: Plain language (simplified English)

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Translation

Honey bees that are genetically related naturally have waterproof, skin signal profiles, which help the honey bees recognize one another, and serve as an identifier of bees in their colony. However, even though there are a lot of honey bees that are genetically related in a colony, the development of the chemical signature depends on the environment, not just the actual genetics that link them. Therefore, it is confusing how factors other than pure genetics, such as the environment in this case, can cause the development of a trait that so many honey bees of a colony all share. We believe that this trait is actually linked to characteristics of the bee stomach bacterial environment. This shows the importance of the organism-environment relationship as a source of differences between behavioral traits in honey bees.