Function and mechanism of olfactory kin recognition in an avian model system (2. Förderphase)

Initiative: Freigeist-Fellowships

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Kin recognition is a fundamental skill of which the mechanism, particularly in birds, are poorly understood. The applicant uses zebra finches as a model and sets out to understand first, how relatedness is being assessed, and second, how genetic information might be encoded in body odours. Bacteria and other microbes are involved in odour production, and it seems likely that they are involved in individual odour fingerprints, due to biotransformation of body secretions or by adding volatile substances. The Freigeist group discovered that zebra finches harbour a species- as well as individual-specific skin microbiome, which is influenced by the host's genotype as well as the environment. Thus, the individual specific skin microbiome, which carries information about the host's genotype, might cause the individual body odour. Furthermore, the group showed that zebra finches and other birds use olfactory cues in a variety of circumstances not being considered before, such as parent -, sibling - , and offspring recognition. The group found evidence for an olfactory phenotypic cue that allows other individuals to differentiate between kin and non-kin using self-referent phenotype matching.

Projektbeteiligte

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