ラボセミナー・脳科学 GCOE セミナーのお知らせ

Dr. Jean-François Ferveur

(University of Bourgogne, Dijon, France)

Evolution of pheromonal communication in *Drosophila*

2 月 19 日(火)14:00ー15:00
青葉山キャンパス・生物棟 1F　大会議室

Abstract

In most animals, sensory communication is necessary to recognize conspecifics. In particular, chemical signals (pheromones) are ubiquitously used for mate discrimination. For each sensory modality, a tight genetic link must be maintained between the emission and the reception of species-specific signals. If the emission and reception systems diverge, a new species with individuals using new sensory signals may arise. I will present recent genetic, molecular, physiological anatomical, pheromonal and behavioral data gathered in 4 current studies which show how pheromonal communication could be involved in the formation and evolution of *Drosophila* species.

(1) We discovered *desat1,* which is the first known gene acting both on the production and the perception of sensory signals (sex pheromones). The pleiotropy of *desat1* may be related to its complex regulation and/or multiple transcripts. (2) Within *D. melanogaster* species, a variation of homosexual courtship is observed between West-African and cosmopolitan males. This is likely due to a slightly different regulation and expression of the *Natma* gene in few tarsal gustatory neurons, presumably involved in pheromonal detection. (3) The strong mating isolation that almost separate Zimbabwe flies from the rest of the world may depend on the combination of pheromonal, acoustic and visual signals. (4) The fact that the same taste neurons detect a male pheromone and bitter food, both inducing avoidance behavior, suggests that the neural pathway which was initially used to detect toxic food was recycled through evolution to further allow pheromonal detection.

連絡先
生命科学研究科・脳機能遺伝分野・山元研究室・小金澤雅之
kogane@mail.tains.tohoku.ac.jp、内線（青葉山）5790