



CDB SEMINAR

Hiroaki Matsunami

Department of Molecular Genetics and Microbiology
Duke University Medical Center

Thursday, November 22, 2007
16:00~17:00 C1F Auditorium

Functional variation and evolution of human odorant receptors

Summary

Human olfactory perception differs enormously between individuals, with large perceptual variations in the intensity and pleasantness of a given odor. For instance, androstenone, an odorous steroid derived from testosterone, is variously perceived by different individuals as offensive ("sweaty, urinous"), pleasant ("sweet, floral"), or odorless. Similar variation in odor perception has been observed for a number of other odors. We investigated whether genetic variation in human odorant receptor genes accounts for interindividual variation in odor perception. We found that a human odorant receptor, OR7D4, is selectively activated in vitro by androstenone. We show that genotypic variation in OR7D4 accounts for a significant proportion of the pleasantness and intensity variance in perception of androstenone. We are currently investigating what evolutionary pressure have shaped functional variation of OR7D4 in humans and other primate species.

Host:

Masatoshi Takeichi
Cell Adhesion and Tissue Patterning, CDB
takeichi@cdb.riken.jp
Tel:078-306-3116
(ext:1321)