[P2.08] Understanding the molecular and neural basis of olfaction in red palm weevil using gene silencing and odor-evoked brain activity studies.
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[P2.09] A study on habitats and behavioral characteristics of hornet wasp (Hymenoptera: Vespidae: Vespa orientalis), An important medical-health pest
R. Dehghani*, H. Kassiri*, 1Kashan University of Medical Sciences, Iran, 2Ahvaz Jundishapur University of Medical Sciences, Iran

[P2.10] Olfactory receptors essential for the blood-feeding process of the major disease vector, Aedes aegypti
D. S. Jeong*, G. E. Park, S. Jeong, Chonbuk National University, Republic of Korea

[P2.11] Mechanism of acetic acid avoidance in Drosophila
Y. Lee, Kookmin University, Republic of Korea

[P2.12] Discovering the umami receptor in the Western honey bee, Apis mellifera
H. W. Kwon*, S. H. Lim, J. W. Jung, H. S. Lee, G. Y. Han, R. A. Ilyasov, H. W. Kwon, Incheon National University, Republic of Korea, 2Convergence Research Center for Insect Vectors, Republic of Korea

[P2.13] Enhanced gene expression of enzymes involved in dopamine biosynthesis by a juvenile hormone analog in male honey bees
T. Watanabe*, K. Matushima, K. Sasaki, Tamagawa University, Japan

[P2.14] Genetic variability of a winter-emerging Chironomidae in trout streams of southeastern Minnesota
L. C. Ferrington Jr., University of Minnesota, USA

[P2.15] Comparative transcriptomes of larval fat body in Helicoverpa assulta under different temperature conditions
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[P2.16] Biological response to chlorpyrifos of two alpine chironomid species (Diamesa spp.)
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[P2.17] Investigation on the ice fly Diamesa steinboecki thermal tolerance with a molecular approach
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[P2.18] Hologencode profiling of the fly Failleria occidentalis reveals a complex microbiome and confirms the presence of two novel symbionts
J. Bhart*, M. Hitchings, P. Facey, R. Del Sol, Swansea University, UK

[P2.19] Gut microbiota of field-collected and laboratory-selected insecticide resistant larvae of Spodoptera frugiperda and the diversity of insecticide degrading bacteria
A. F. F. Gomes, C. Omoto, F. L. Consoli*, University of São Paulo, Brazil

[P2.20] Presence of bacterial endosymbionts in mites of economic importance in Spanish citrus orchards
T. Pina*, J. Cruz-Miralles, M. Cabedo-Lopez, J. A. Jaques, B. Sabater-Muñoz, M. A. Hurtado*, Universitat Jaume I de Castelló, Spain, 2Universitat de Valencia, Spain, 3Instituto de Biología Molecular y Celular de Plantas, Spain

[P2.21] Differential mating behaviours of a tetracycline-treated Tetranychus urticae laboratory strain and their effect on mite microbiota
M. Cabedo-Lopez*, J. Cruz-Miralles, T. Pina, J. F. Alzate-Restrepo, O. Collt, V. Ibañez-Gual, B. Sabater-Muñoz, J. A. Jaques, M. A. Hurtado*, Universitat Jaume I de Castelló, Spain, 2Universitat de Valencia, Spain, 3Universidad de Antioquia, Colombia, 4Instituto de Biología Molecular y Celular de Plantas, Spain

[P2.22] Two complete mitochondrial genomes of the invasive species, Metcalfa pruinosa (Hemiptera: Flatidae): genomic comparison among species of Fulgoroidea and selection of variable sites useful for population genetic analysis
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[P2.23] Microbial dynamics of Xyleborus affinis during its cycle life
L. A. Ibarra-Juarez, M. A. Burton, L. Cruz*, E. Ibarra-Laclette, D. Desgarenes, M. Vázquez-Rosales, L. Alonso-Sánchez, E. Villafañ, G. Hanako-Rosas, A. Lameiras*, Instituto de Ecología A. C. Mexico, 2University of Florida, USA, 3Max-Planck-Institute for Chemical Ecology, Germany, 4Julius-Maximilians-University of Würzburg, Germany, 5Joint Unit of Research in Genomics and Health, Foundation for the Promotion of Health and Biomedical Research in the Valencian Community (FISABIO) and Institute of Integrative Systems Biology (Univers, Spain, 6CIBER en Epidemiología y Salud Pública, Spain
Nutrition sensor regulates neuropeptide in the hypopharyngeal gland of honeybee
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Abstract

In honeybees, nutrient sensors affect the ability to perceive chemosensory, change behavior, social behavior and labor division. Signals detected by nutrition sensors are affected by neuropeptides during sensory communication (Nassel et al., 2019). Currently, 35 neuropeptides are identified in honeybee but some of them did not defined yet (Yeoh et al., 2017). Royal jelly, which is given to larvae from housework nursing bees is important in terms of protein supply. These neuropeptides may have significant roles in developing tissues and social behaviors in honey bees. Here we identified one of the gustatory receptors that showed differential expression patterns during caste development in honeybees. Thus, we here delved into the potential interaction of this Gr with neuropeptides using differentially Expressed Gene (DEG) analysis approach in hypopharyngeal gland where honeybees produce royal jelly. DEG analysis shows 7 neuropeptides are down regulated and 13 neuropeptides are up regulated in honey bees. Especially, insulin-like peptide1 (ILP1), ILP2, which play a role for insulin-signaling pathway were down regulated. Our study indicates that chemosensory receptor not only detect nutrient in peripheral organ such as proboscis and antennae, but this also is likely involved in growth and development with neuropeptides. Key words: Gustatory receptor, Hypopharyngeal gland, RNA interference, DEG analysis, Insulin signaling pathway. RNA interference data shows us that AmGr-X is essential for the survival and growth of bees. According to DEG & GO analysis, AmGr-X knockdown can affect a variety of factors such as neuropeptides and metabolic processes, etc.