

Job opening at the KULeuven department of Biology
Research team Insect Physiology & Molecular Ethology
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The position assures granting for 4 years and is supported by FWO

We are looking for a master in biology or equivalent with extended experience in modern molecular biology techniques. A general physiology background is an asset.

PhD title and abstract

Feeding and starvation effects on the overall endocrinological regulation with special emphasis towards circadian clock regulation, energy metabolism and reproduction

It becomes more and more clear that besides light regimes also feeding regimes are involved in setting the master oscillator driving circadian gene expression. In this context it might not be surprising that feeding and sleeping disorders can be correlated. It is well known in mammals that orexin – orexin receptor interaction is an important player in those processes. We have already cloned the orexin receptor ortholog from *Tribolium castaneum* and are presently working on the de-orphanisation of this receptor. Finding the natural ligand will open perspectives for future research and will result in better understanding the evolutionary interplay between both deuterostomians and protostomians.

Prior goal of this PhD work refers to unravelling the function of the “orexin” pathway within the insect. Q-PCR, bio-assay development and in vitro assays represent keywords in this context. In mammals orexin released from the brain affects peripheral receptors located in the adipose tissue and interferes with energy mobilisation as deduced from the changes in lipase mRNA expression and peroxisome proliferator-activated receptor gamma 2 mRNA

As practical outcome this PhD appeals to a better understanding of food preference (eg. either protein rich pollen or carbohydrate rich nectar) during foraging in the honeybee.

An additional aspect refers to our observation evoked by starvation on the reproductive system. Even short term starvation can postpone the reproductive process albeit still reversible. This observation paves the way to investigate the main players involved in the insect reproductive system.