



## Einladung zum Biologischen Kolloquium

Am: **Di, 24.09.2019**

um: **17:00 Uhr**

in: **N25/H8**

Spricht: **Dr. Ya-Tin Lin**

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über: **Live with stress:**

### **The regulatory role of neuropeptide FF on the hypothalamic-pituitary-adrenal axis**

**Abstract:** Neuropeptide FF (NPFF) belongs to the RFamide family and known as a morphine modulating peptide that regulates different physiological functions through its interaction with two cognate receptors, NPFFR1 and NPFFR2. The hypothalamic-pituitary-adrenal (HPA) axis participates in physiological stress response by increasing circulating glucocorticoid levels and modulating emotional responses. Other RFamide peptides, including neuropeptide AF, neuropeptide SF and RFamide related peptide also target NPFFR1 or NPFFR2, and have been reported to activate the HPA axis and induce anxiety- or depression-like behaviors. However, little is known about the action of NPFF on HPA axis activity and the role of the individual receptors remains unclear. In the present study, we explore a novel modulatory role for NPFF-NPFFR2 in stress-related anxiety/depressive behaviors. We first used NPFFR2 agonists to examine the role of NPFFR2 in activating the HPA axis in rodents. The serum corticosteroid levels, hypothalamic paraventricular nucleus (PVN) c-fos protein and anxiety-like behavior were measured after rats treated with NPFFR2 agonist. In addition, transgenic (Tg) mice over-expressing NPFFR2 displayed clear depression and anxiety-like behaviors with hyperactivity in the HPA axis and functionally damage the hippocampus. Chronic stimulation of NPFFR2 in WT mice also shown similar outcomes. Strikingly, bilateral intra-PVN injection of NPFFR2 shRNA pre-dominantly inhibits the depressive-like behavior in CMS-exposed mice. We speculate that persistent NPFFR2 activation, in particular in the hypothalamus, up-regulates the HPA axis and results in long-lasting increases in circulating corticosterone (CORT), consequently damaging hippocampal function. This novel role of NPFFR2 in regulating the HPA axis and hippocampal function provides a new avenue for combating depression and anxiety-like disorder.

Gäste sind herzlich eingeladen!  
- Die Dozenten der Biologie -