

# 31<sup>ST</sup> ECNP CONGRESS

6-9 OCTOBER 2018

BARCELONA

*The future of CNS treatments*

PROGRAMME



**ECNP** *neuroscience  
applied*

## SUNDAY POSTER SESSION

12.00-14.00 POSTER AREA

SUNDAY

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### **Antidepressant effect of adipokinetic hormone/red pigment-concentrating hormone family of peptides in olfactory bulbectomy model of rats**

*O. Mutlu\**, L. Kleteckova, J. Horáček, K. Holubová, T. Páleníček, G. Ulak, C. Höschl, K. Valeš (Turkey)

Animal models - Method; Pharmacology - Method; Mood and bipolar disorder

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### **Different effects of adipokinetic hormone/red pigment-concentrating hormone family of peptides in posttraumatic stress disorder model of rats**

*O. Mutlu\**, C. Cerit, N. Pinterová, J. Horáček, F. Akar, T. Páleníček, C. Höschl, K. Valeš (Turkey)

Animal models - Method; Stress related disorder; Pharmacology - Method

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### **Researching the effects of witnessing trauma in rats**

*A. Coskun\**, S. Candansayar, H. Bolay Belen, A. Donmez, O. Gulbahar, N. Coskun (Turkey)

Animal models - Method; Anxiety - Disorder

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### **A gene expression study of the glutamate-nitric oxide pathway in schizophrenia**

*M. Kinoshita\**, E. Candemir, S. Kittel-Schneider, A. Reif, F. Freudenberg (Germany)

Genetic & molecular approaches - Method; Post-mortem / pathology - Method; Psychotic disorder

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### **Photoperiodic responses of behavior and the brain monoamines in obese AY/a and wild-type a/a mice**

*E. Bazhenova\**, N. Khotskin, I. Sorokin, D. Fursenko, A. Kulikov (Russia)

Genetic & molecular approaches - Method; Animal models - Method; Mood and bipolar disorder

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### **Level of DNA methylation in BDNF gene is significantly decreased in anorexia nervosa**

*G. Maussion, J. Clarke, P. Gorwood, N. Ramoz\** (France)

Genetic & molecular approaches - Method; Eating disorder



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(/)





## Programme of the 31st ECNP Congress - Barcelona 2018

The scientific programme forms the central part of the congress.

Below you can browse the provisional programme of the 31st ECNP Congress.

More symposia, industry sessions and poster sessions (including abstracts and e-posters) will be added once they become available, including abstracts and biographies of the speakers.

Download the preliminary programme here

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### Different effects of adipokinetic hormone/red pigment-concentrating hormone family of peptides in posttraumatic stress disorder model of rats

O. Mutlu <sup>(1)</sup>, C. Cerit <sup>(2)</sup>, N. Pinterová <sup>(3)</sup>, J. Horáček <sup>(4)</sup>, F. Akar <sup>(1)</sup>, T. Páleníček <sup>(4)</sup>, C. Höschl <sup>(4)</sup>, K. Valeš <sup>(3)</sup>

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<sup>(2)</sup>Kocaeli University Medical Faculty, Psychiatry, Kocaeli, Turkey

<sup>(3)</sup>National Institute of Mental Health, Experimental Neurobiology, Topolova 748- 250 67 Klecany, Czech Republic

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It was suggested that adipokinetic hormone may contribute to neuronal function in human central nervous system. AKH exerted improving effects in depression and anxiety by increasing neurogenesis and brain neurotropic factors in central nervous system [1, 2]; therefore, it might also be important to study whether AKH shows improved effects in model of posttraumatic stress disorder (PTSD) in rats. The aim of this study was to investigate effects of Anax imperator AKH (Ani-AKH), *Libellula auripennis* AKH (Lia-AKH) and Phormia-Terra hypertrehalosemic hormone (Pht-HrTH) on animal behavior in PTSD model of Wistar-albino rats. We had 8 different groups: Non-traumatized control (administered saline+%5 DMSO; n=9), Nontraumatized Ani-AKH 2 mg/kg (n=8), Non-traumatized Lia-AKH 2 mg/kg (n=8), Non-traumatized Pht-HrTH 2 mg/kg (n=8), Traumatized control (administered saline+%5 DMSO; n=9), Traumatized Ani-AKH 2 mg/kg (n=9), Traumatized Lia-AKH 2 mg/kg (n=9), Traumatized Pht-HrTH 2 mg/kg (n=9). The results of the study were evaluated by two-way ANOVA followed by Bonferroni's post hoc test when significant differences were detected. In PTSD model, rats were exposed to 31 days of psychosocial stress including acute and chronic component. Acute component include 2 hour predator odor exposure (immobilization during predator odor exposure) on days 1 and 11, and chronic component include social stress to be applied for 31 days. During social stress, animals were placed 2 animals per cage and everyday these paired animals were changed. One week after the second exposure to predator odor, drug administration started and continued for 3 weeks. During the last week of drug administration, locomotor activity test, elevated plus-maze test (EPM), forced swimming test (FST), exploratory

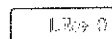
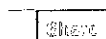
activity test and acoustic startle reflex (ASR) tests were applied for the evaluation of behavioral parameters of animals. In locomotor activity test, there was no significant difference between total distance moved and speed of animals. Ani-AKH ( $p < 0.01$ ) and Lia-AKH ( $p < 0.05$ ) significantly decreased immobility time compared to traumatized control group in the FST test. In the EPM test, there was a partial effect of Lia-AKH and Pht-HrTH on %open arm entry but it did not reach to a significant level. In the exploratory activity test, number of entries to new area and total number of entries were decreased in traumatized groups. There was a partial improving effect of Pht-HrTH on number of entries to new area and total number of entries compared to traumatized animals although it did not reach to a significant level. Ani-AKH ( $p < 0.05$ ) and Pht-HrTH ( $p < 0.05$ ) significantly decreased weight gain in 3 weeks of administration compared to non-traumatized control group while Ani-AKH ( $p < 0.05$ ) and Pht-HrTH ( $p < 0.001$ ) significantly increased weight gain compared to traumatized control group in the PTSD study. In the ASR test, Ani-AKH ( $p < 0.01$ ), Lia-AKH ( $p < 0.01$ ) and Pht-HrTH ( $p < 0.05$ ) significantly decreased average startle amplitude compared to non-traumatized control group. In conclusion, AKH/RPCH family peptides may demonstrate improved effects on animal behavior in PTSD model in rats although effects were varying depending on the test applied and type of insect hormone used.

## References

- [1] Mutlu, O., Gumuslu, E., Kokturk, S., Ulak, G., Akar, F., Erden, F., Kaya, H., Tanyeri, P., 2016. Effects of chronic administration of adipokinetic and hypertrehalosemic hormone on animal behavior, BDNF and CREB expression in the hippocampus and neurogenesis in mice. *Fundam Clin Pharmacol* 30, 4-13.
- [2] Mutlu, O., Ulak, G., Akar, F., Erden, F., Celikyurt, I.K., Bektas, E., Tanyeri, P., Kaya, H., 2017. Effects of acute administration of adipokinetic hormone on depression, anxiety, pain, locomotion and memory in mice. *Chin J Physiol* 60, 106-113.

## Keywords:

Animal models - Method  
 Stress related disorder  
 Pharmacology - Method



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