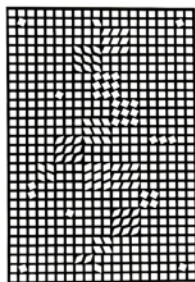


11th

ISCTICO - HUPHAR-IUPHAR CONFERENCE

OCTOBER 27-30, 2021
PÉCS, HUNGARY



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by Victor Ivanov

11th INTERNATIONAL SYMPOSIUM ON
CELL/TISSUE INJURY AND CYTOPROTECTION/
ORGANOPROTECTION (ISCTICO),

JOINT MEETING OF THE HUNGARIAN SOCIETY
FOR EXPERIMENTAL AND CLINICAL
PHARMACOLOGY (HUPHAR)
AND THE INTERNATIONAL UNION OF BASIC
AND CLINICAL PHARMACOLOGY (IUPHAR)

PROGRAM



HUPHAR
Hungarian Society for Experimental
and Clinical Pharmacology



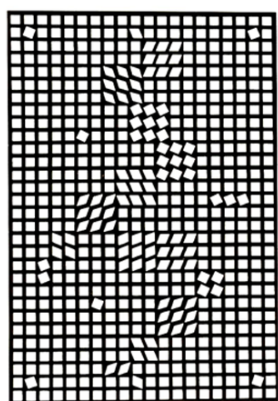
UNIVERSITY OF PÉCS
SZENTGÖTHAI RESEARCH CENTRE

10:35-11:05	Coffee break
11:05-11:25	Special talk
	Sándor Kerpel-Fronius (<i>Department of Pharmacology and Pharmacotherapy, Semmelweis University, Budapest, Hungary</i>) Clinical pharmacology of modern vaccine development Chair Péter Ferdinandy (<i>Department of Pharmacology and Pharmacotherapy, Semmelweis University, Faculty of Medicine, Budapest, Hungary</i>)
11:25-12:55	S4 - Novel mechanisms in neuroprotection Chairs Beáta Sperlágh (<i>Institute of Experimental Medicine, Eötvös Loránd Research Network, Budapest, Hungary</i>) Ádám Dénes (<i>Laboratory of Neuroimmunology, Institute of Experimental Medicine, Budapest, Hungary</i>)
11:25	Péter Illés (<i>Department of Pharmacology, University of Leipzig, Leipzig, Germany</i>) P2X7 receptors amplify CNS damage in neurodegenerative diseases
11:55	Ádám Dénes (<i>Laboratory of Neuroimmunology, Institute of Experimental Medicine, Budapest, Hungary</i>) Modulation of microglial activity to shape neurovascular responses and brain injury
11:20	András Iring (<i>Institute of Experimental Medicine, Eötvös Loránd Research Network, Budapest, Hungary</i>) Central inhibition of P2Y12R differentially regulates survival and neuronal loss in MPTP induced Parkinsonism in mice
11:40	Andrea Tamás (<i>Department of Anatomy, University of Pécs, Medical School, Pécs, Hungary</i>) Pituitary adenylate cyclase-activating polypeptide, a potential new biomarker in Parkinson's disease
12:55-14:00	Lunch break

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*OP-087 dedicated
to the symposium
by Victor Szűcs*

U. Szűcs -

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ABSTRACT BOOK



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UNIVERSITY OF PÉCS
SZENTGÖTHAI RESEARCH CENTRE

PITUITARY ADENYLATE CYCLASE-ACTIVATING POLYPEPTIDE, A POTENTIAL NEW BIOMARKER IN PARKINSON'S DISEASE

Daniel Pham¹, Beata Polgar², Tunde Toth¹, Adel Jungling¹, Norbert Kovacs³, Istvan Balas⁴,
Endre Pal³, Dora Szabo⁵, Balazs Daniel Fulop¹, Dora Reglodi¹, Zalan Szanto⁶, Robert Herczeg⁷,
Attila Gyenesei⁷, Andrea Tamas¹

¹Department of Anatomy, MTA-PTE PACAP Research Team, Centre for Neuroscience;

²Department of Medical Microbiology and Immunology; ³Department of Neurology;

⁴Department of Neurosurgery, ⁵Heart Institute; ⁶Department of Surgery, Medical School,
University of Pecs, Hungary; ⁷Szentagothai Research Centre, Pecs, Hungary

Background: Pituitary adenylate cyclase-activating polypeptide (PACAP) is a neuropeptide with antiapoptotic, antioxidant, regulatory and antiinflammatory effects proved by numerous *in vitro* and *in vivo* studies. In the last few years several studies examined changes of PACAP levels in human samples to show alterations in various physiological and pathological conditions.

Plasma PACAP concentrations were significantly increased after acute spontaneous basal ganglia hemorrhage and reduced in the cerebrospinal fluid (CSF) of Alzheimer's disease patients. We showed correlation between patient mortality and PACAP levels in severe traumatic brain injury. Earlier experiments did not show changes of PACAP levels in the CSF of Parkinson's disease (PD) patients.

Aim: Our aim was to examine the PACAP in blood samples of patients with PD (n=107, control=39).

Methods: We measured the plasma PACAP38 level of PD patients with sandwich-type ELISA and searched for correlations with clinical parameters such as gender, age, stage and subtype of disease, type of treatment and specified scores for PD [Hoehn-Yahr, Movement Disorder Society - Unified Parkinson's Disease Rating Scale (MDS-UPDRS)].

Results: We showed significantly decreased PACAP38 levels in PD patients over 50 compared to younger group and in Hoehn-Yahr scale stage 3 and 4 compared to stage 2 group. Elevated levels were found after deep brain stimulation. We didn't find significant correlations between plasma PACAP38 levels and the MDS-UPDRS or the type of pharmacological treatment.

Conclusion: Earlier experiments did not find significant changes in CSF PACAP levels of PD patients, however, our experiments showed decreased level in plasma samples. The reduced levels of PACAP found in PD patients and the significant increase after DBS treatment confirm the hypothesis that the neuroprotective effect of PACAP could have a role in PD. Based on our results we assume the possibility of using PACAP as a biomarker to monitor the course of the disease.