



Meeting program **Neurotoxicity Society Virtual Meeting 2021** **June 17-18**

Times noted are US EST (US PST -3 hours, US CST -1 hours, Central Europe + 6 hours)

Day 1 (June 17), Morning session:

9: 45: Welcome (NTS President and Program Committee)

10: 00 -10:15 - MPTP intoxication in the Octodon degus: effects on the nigrostriatal pathway and related areas.
Lorena Cuenca-Bermejo (Mentor: Maria Trinidad Herrero)

10:15 - 10:30 - Early changes in epigenetics and oxidative stress in Old Parkinsonian mice.
Pablo Gallo-Soljancic. (Mentor: Maria Trinidad Herrero)

Daniela Velasquez de Oliveira (Mentor: Humberto Milani)

12:15 – 12:45 – Discussion (Chair: **Harry Steinbusch**)

End morning session

Day 1, afternoon session:

2:00 – 2:15 -Different short-predictable stress in juvenile rats have no long-lasting effects on the volume of corpus callosum, hippocampus neither anxiety-like behavior or object recognition memory.

Lucas Brunati Gremaschi. (Mentor: Silvana Regina de Melo)

2:15 :2:30 - ALDH2 inhibition by Lead and Ethanol co-exposure: impact on bioenergetics and oxidative stress biomarkers in SH-SY5Y cells.

Romina Deza-Ponzio (Mentor: Miriam B. Virgolini)

2:30 – 2:45 - Changes of plasma PACAP-38 level in patients with Parkinson's disease .

Daniel Pham (Mentor: Andrea Tamas)

2:45 – 3:00 - Modeling Parkinson's Disease with AAV viral particles and human PFFs of α -Syn .

Mónica Gómez-Benito (Mentor: Rosario Moratalla)

3:00 - 4:15 - Discussion (Chair: **Elaine del Bel**)

End day 1

Day 2 (June 18):

10: 00 -10:15 - Increased expression of DSCAM and its action on neuronal morphological parameters in immortalized cell models of Down Syndrome. Possible role of the PAK effector pathway.

Ramón Pérez-Núñez (Mentor: Pablo Caviedes)

CHANGES OF BLOOD PACAP LEVEL IN PATIENTS WITH PARKINSON'S DISEASE

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Introduction: 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 compared to HYS2 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.