



CERTIFICATE OF ATTENDANCE

This is to certify that

Juan Jose Fernandez-Valenzuela

Participated in the

10th FENS Forum of Neuroscience

2-6 July 2016 | Copenhagen, Denmark

A handwritten signature in black ink, which appears to read "Monica Di Luca". The signature is fluid and cursive.

Monica Di Luca
FENS President



10th FENS Forum of Neuroscience

July 2-6, 2016 | Copenhagen, Denmark

Organised by the Federation of European Neuroscience Societies (FENS)
Hosted by the Danish Society for Neuroscience



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POSTER
PRESENTATION I
Sunday July 3, 2016



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PRESENTATION TIME: 11:30 - 13:00

Poster Area

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EPOTHILONE-D RESCUES COGNITION AND ATTENUATES ALZHEIMER'S DISEASE-LIKE PATHOLOGY IN APP/PS1 MICE

Fernandez-Valenzuela JJ.¹, Sanchez-Varo R.¹, De Castro V.¹, Moyano FJ², Vizuete M², Davila JC¹, Vitorica J.² and Gutierrez A.¹

¹Dept. Cell Biology, Genetics and Physiology, Faculty of Sciences, University of Malaga. IBIMA. CIBERNED. Malaga, Spain.

²Dept. Biochemistry and Molecular Biology, Faculty of Pharmacy, University of Seville. IBIS. CIBERNED. Seville, Spain.

AIMS: Cognitive decline in Alzheimer's disease (AD) patients has been linked to synaptic damage and neuronal loss. Hyperphosphorylation of tau protein destabilizes microtubules leading to the accumulation of autophagy/vesicular material and the generation of dystrophic neurites, thus contributing to axonal/synaptic dysfunction. In this study, we analyzed the effect of a microtubule-stabilizing compound in the progression of the disease in the hippocampus of APP_{751SL}/PS1_{M146L} transgenic model.

METHODS: APP/PS1 mice (3 month-old) were treated with a weekly intraperitoneal injection of 2 mg/kg epothilone-D (Epo-D) for 3 months. Vehicle-injected animals were used as controls. Mice were tested on the Morris water maze, Y-maze and object-recognition tasks for memory performance. Abeta, AT8, ubiquitin and synaptic markers levels were analyzed by Western-blot. Hippocampal plaque, synaptic and dystrophic loadings were quantified by image analysis after immunohistochemical stainings.

RESULTS: Epo-D treated mice exhibited a significant improvement in the memory tests compared to controls. The rescue of cognitive deficits was associated to a significant reduction in the AD-like hippocampal pathology. Levels of Abeta, APP and ubiquitin were significantly reduced in treated animals. This was paralleled by a decrease in the amyloid burden, and more importantly, in the plaque-associated axonal dystrophy pathology. Finally, synaptic levels were significantly restored in treated animals compared to controls.

CONCLUSION: Epo-D treatment promotes synaptic and spatial memory recovery, reduces the accumulation of extracellular Abeta and the associated neuritic pathology in the hippocampus of APP/PS1 model. Therefore, microtubule stabilizing drugs could be considered therapeutical candidates to slow down AD progression.

Supported by FIS-PII2/01431 and PII5/00796 (AG), FIS-PII2/01439 and PII5/00957(JV), co-financed by FEDER funds from European Union.