BALANCING ENDOCANNABINOID-MEDIATED PLASTICITY WITH NICOTINE

https://neurodegenerationresearch.eu/survey/balancing-endocannabinoid-mediated-plasticity-with-nicotine/

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Title of project or programme

BALANCING ENDOCANNABINOID-MEDIATED PLASTICITY WITH NICOTINE

Source of funding information

Swedish Research Council

Total sum awarded (Euro)

€ 228,509

Start date of award

01/01/2015

Total duration of award in years

3

Keywords
Research Abstract
The overall aim with this preclinical research project is to determine if changes in the endogenous endocannabinoid (eCB) system is responsible for inducing neurological adaptations associated with Alzheimer´s disease, and if pharmacological manipulation of nicotinic acetylcholine receptors could stabilize, or even reverse, neurophysiological and behavioral changes deriving during the progression of Alzheimer´s disease. The striatum express high levels of eCBs and show early signs of amyloid deposition, and this research project aims to define if administration of nicotine at could offset striatal eCB signaling in an animal model of Alzheimer´s disease. Using in vivo and in vitro electrophysiology on genetically modified mice and animal models, combined with optogenetic, animal behavior and

morphological studies of spine density we will test the following hypotheses; ONE: Nicotine promotes eCB signaling in a synapse-specific manner TWO: Nicotine shapes eCB signaling in a life-long manner THREE: Nicotine rescues the eCB system from misfiring in Alzheimer´s disease If these hypotheses hold true, this project could set the ground for new pharmacological interventions in the treatment of Alzheimer´s disease. In addition, this line of research will outline the role of eCB signaling in controlling basal ganglia dynamics and has great potential for defining novel mechanisms that can be targeted by pharmacotherapy.

Further information available at:

Types:
Investments < €500k

Member States:
Sweden

Diseases:
N/A

Years:
2016

Database Categories:
N/A

Database Tags:
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