Universitat Pompeu Fabra Barcelona | Master in Bioinformatics for Health Sciences

Master project 2020-2021

Personal Information

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Project

Computational genomics

Project Title:

EGCG induced change in the phospho-proteome of DYRK1A overexpressing cells

Keywords:

Down syndrome; Proteomics; Time-course; EGCG; Hippocampus

Summary:

DYRK1A is a gene triplicated in Down syndrome that regulates the phosphorylation of several targets. Mice overexpressing DYRK1A show cognitive alterations. Interestingly, EGCG, the main polyphenol extracted from green tea, it is a DYRK1A inhibitor and ameliorates the cognitive impairment in DYRK1A transgenic mice and other DS mouse models. We performed an iTRAQ experiment on hippocampal primary neuronal cultures, labeling 5 different time points upon EGCG treatment, 5 uM (0, 5', 15', 30', 120') both in transegenic and wild type cells. This will shed lights in the acute phase action of EGCG actions, with the future goal to improve its efficacy for treatment purposes.

Expected skills::

Using R and RStudio

Possibility of funding::

No

Possible continuity with PhD: :

To be discussed