JPND research
EU Joint Programme – Neurodegenerative Disease Research

3DMinBrain

High-Throughput, High-Content Screening of human neuroectodermal organoids for innovative drug discovery in neurodegenerative diseases

The goal of the 3D MiniBrain project is to establish and standardize the use of miniaturized human brain-like structures as a relevant three-dimensional (3D) testbed to decipher the roles of the main genetic risk factors for Alzheimer's disease and Parkinson's disease, according to original hypotheses obtained from our genetic studies. Minibrains are lab-grown spheroid-shaped bundles of cells that mimic several aspects of the human cortex architecture, have gene-expression patterns close to those of early stages of development, and can be used to understand neurological diseases or test drugs. They are obtained from skin or blood cells from patients that have been reprogrammed into induced pluripotent stem cells (iPSCs), which possess the ability to turn into any cell type and notably into brain cells.

This ground-breaking 3D model of human brain tissue represents a potential alternative to animal experimentation and will be used to identify targets/genes, for seeding experiments (prion-like mechanisms), and for drug screening. The teams involved are known for their academic excellence in the field of neurobiology and are also highly experienced in the transfer of knowledge and technology to industry, to which the best models will be proposed as a service at the end of the project.

Start Date: January 2016

Duration: 3 years

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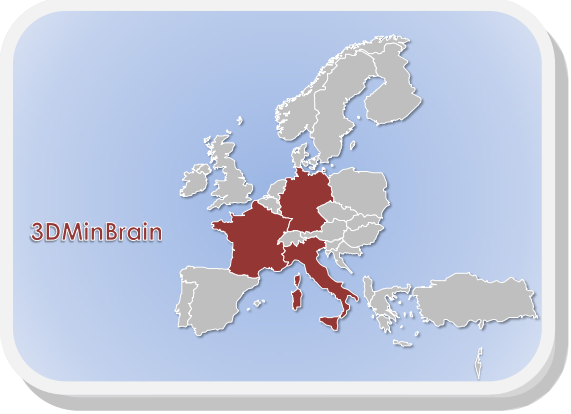
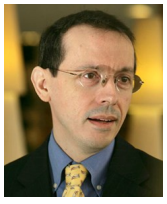


Project Partners:



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