

ERA-Net NEURON

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EPITHERAPY: An epigenetic approach towards the recovery of neuronal network plasticity and cognitive function in neurodegenerative disease

Project Description


Dementia is affecting more than 7 million Europeans, a number that is expected to double by the year 2025 thereby causing a huge economical and emotional burden to our societies. The major causes of dementia are neurodegenerative diseases such as Alzheimer's (AD) or Huntington's disease (HD). Despite intensive research no effective cure is yet available. Most recent data (including members of EPITHERAPY) suggest that epigenetic mechanisms, such as acetylation-state of the chromatin, play an important role in the pathogenesis of AD and HD. Moreover, targeting such mechanisms such as inhibition of histone-deacetylases seems to hold great potential for neuroprotection and neurorestoration. To this end the EPITHERAPY consortium proposes to further elucidate the role of epigenetic mechanisms during neurodegeneration using post-mortem human brain samples and mice as a model organism to identify the most suitable epigenetic drug targets for neuroprotection and neurorestoration. The combination of distinct expertise from the EPITHERAPY participants will allow us explore an epigenetic approach towards neurodegeneration on the molecular, synaptic, network, systems and behavioral level. EPITHERAPY will therefore significantly contribute to the development of effective therapeutic strategies to treat neurodegeneration.




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