

Establishment of an autologous in vitro human model of neuro-inflammatory diseases, using human induced pluripotent stem cells (hiPSC)

Based on the hiPSC-derived CNS cells, we have different lines of research, all centered on neuro-inflammatory questions. 1) CD8+ T cells are found in abundance in the plaques of multiple sclerosis brain, these CD8+ T cells exhibiting a TCR restriction, are enriched in the brain, suggesting that they are directed against specific antigen(s) in the CNS, however their role remains undetermined. Thanks to this model, we examine whether CD8+ T cells of MS patients recognize CNS antigens in a fully autologous way. 2) We also use this model in an attempt to discover new antibodies directed against CNS antigens in the context of limbic encephalitis. 3) We are setting up a hiPSC-derived astrocytic/oligodendrocytic model to study the pathogenesis of JC virus infection, the agent of progressive multifocal leukoencephalopathy.