

CDKL5 Program of Excellence Pilot Grant Program

Application Title: Rescuing CDKL5 mice phenotype by targeting developmental critical period mechanisms

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There are critical periods of development during which circuit refinement is strongly influenced by experience. Interfering with plasticity process during these periods is thought to have dramatic consequences on brain development. In this project we intend to analyze whether mouse models of CDKL5 disorder show a normal critical period adopting the classical paradigm of ocular dominance plasticity. Moreover, because the organization of excitatory synapses is important for critical period regulation, we will investigate how CDKL5 mutation affects the molecular architecture of glutamatergic synapses. Finally, since our preliminary data show a reduction of metabotropic glutamate receptors expression, we will pharmacologically challenge this deficit and investigate whether visual and other behavioral impairments characteristic of this disorder are rescued by this treatment.