B6; 129-Pick1(superscript tm1R1h)/J Transgenic Mouse Line

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Technology description

Value Proposition:
This technology is a well-characterized PICK1 knockout mouse, with a standardized genetic background of C57BL/6, as a system of disturbed D-serine metabolism with potential relevance to schizophrenia. Synaptic plasticity is diminished in PICK1 knockout mice because of elimination of PICK1-GluR2 interaction. These mice have normal levels of AMPA receptors, but altered GluR2 ultrastructural localization. There does not appear to be a change in NMDA receptor kinetics, and the mice do not appear to show any gross anatomic and behavioral defects associated with learning.
Technical Details:
Schizophrenia is a chronic, severe, and disabling brain disorder that affects about 1.1 percent of the U.S. population age 18 and older per year. The causes of schizophrenia disorders are not fully understood. Studies suggest that neuronal glutamate receptors and their agonists are implicated in schizophrenia disorders. JHU inventors identified and characterized a protein interacting with C-kinase (PICK1) that interacts with enzymes that synthesize glutamate receptor agonists. JHU inventors suggest that PICK1 has a role as a susceptibility gene for schizophrenia. Mouse models can make essential contributions to understanding of neurological disorders, by permitting study of neuronal signaling pathways. JHU inventors have produced a PICK1 knockout mouse identified as B6; 129-Pick1(tm1R1h)/J transgenic mouse line.

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