Overview

GluA1 knockout mice exhibit behavioral, social, and cognitive deficits. They may have applications in studies related to behavioral, social and cognitive abnormalities, hippocampal synaptic transmission/plasticity, and nociception, as well as neuropsychiatric disorders such as schizophrenia and depression/mania.

Donating Investigator

Rolf Sprengel, Max Planck Institute for Medical Res
The GluA1 knockout allele (also called GluA1\textsuperscript{−/−}, GluR-A\textsuperscript{−/−}, or A1-lox) has a deletion of the sequences necessary in formation of the glutamate receptor transmembrane domain ion channel pore (exon 11). No GluA1 protein expression is detected from the targeted allele. Homozygous mice are viable and fertile, with behavioral, social, and cognitive deficits. Specifically, homozygotes have profound impairment of several different spatial working memory tasks and selective impairment on short-term recognition memory tasks. Homozygotes show no alterations on spatial reference memory tasks or long-term memory tasks. GluA1\textsuperscript{−/−} mice also have novelty- and stress-induced hyperactivity, and increased anxiety-related responses. Hippocampal CA1 pyramidal neurons from homozygous mice have strongly reduced extrasynaptic AMPA currents and do not show the dendritic distance-dependent scaling of excitatory synaptic strengths seen in wildtype neurons.
Genotyping Protocols
Separated PCR: Gria1
Genotyping resources and troubleshooting

Breeding Considerations
When maintaining a live colony, homozygous mice may be bred together.

References
When using the B6N.129-Gria1<sup>tm1Rsp</sup>/J mouse strain in a publication, please cite the originating article(s) and include JAX stock #019011 in your Materials and Methods section.

Production of mice from cryopreserved embryos or sperm occurs in a maximum barrier room, G200

Pricing & Availability

Typically mice are recovered in 10-14 weeks. Contact Customer Service to place an order or for more information.

Pricing effective for USA, Canada and Mexico shipping destinations
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