

B6.129(Cg)-*Gria1*^{tm4Rlh} /J

Stock No: **024420**

 Congenic, Targeted Mutation

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Donating Investigator

Richard L Huganir, Johns Hopkins University School of Medicine

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GENETIC OVERVIEW

Genetic Background

Generation

Gria1^{tm4Rlh}

Allele Type

Targeted

Gene Symbol

Gria1

Gene Name

glutamate receptor, ionotropic, AMPA1 (alpha 1)

VIEW GENETICS

RESEARCH APPLICATIONS

Neurobiology Research

VIEW ALL RESEARCH APPLICATIONS

BASE PRICE

Starting at:

Details

Detailed Description

Phosphorylation of various AMPA receptor subunits, including *Gria1* (GluR1), can alter synaptic transmission and plasticity at excitatory glutamatergic synapses in the central nervous system.

These GluR1 "penta" phosphomutant mice express five alanine substitutions (S831A, T838A, S839A, T840A, and S845A) that were introduced to the mouse *Gria1* (glutamate receptor, ionotropic, AMPA1 (alpha 1)) gene, thus blocking T840 phosphorylation and preventing phosphorylation from other upstream sites. Western blots indicate that GRIA1 protein is still expressed in homozygotes. Hippocampal cytoarchitecture is normal as shown by Nissl stain, and protein distribution is normal as shown by immunohistochemistry. Long-term potentiation (LTP) induced by theta burst stimulation (TBS) is reduced in adult homozygotes, and although long-term depression (LTD) induced by a paired-pulse 1 Hz protocol is absent in adult animals, it is present in young animals. Mutant mice do not show any gross abnormalities in anatomy and behavior.

Development

Control Suggestions

Selected References

Genetics

Gria1^{tm4Rlh}

Disease/Phenotype

Disease Terms

Research Areas By Phenotype

[+ Mammalian Phenotype Terms by Genotype](#)

[+ References](#)

[- Technical Support](#)

C O N T A C T T E C H N I C A L S U P P O R T

Genotyping Protocols

Sanger sequencing: [Gria1](#)

[Genotyping resources and troubleshooting](#)

Breeding Considerations

Homozygotes and heterozygotes are viable and fertile.

[Additional Breeding and Husbandry Support](#)

Mating System

Heterozygote x Heterozygote

Citation

When using the B6.129(Cg)-*Gria1*^{tm4Rlh}/J mouse strain in a publication, please [cite the originating article\(s\)](#) and include JAX stock #024420 in your Materials and Methods section.

Animal Health Reports

[Facility Barrier Level Descriptions](#)

Production of mice from cryopreserved embryos or sperm occurs in a maximum barrier room, [G200](#)

[- Pricing & Availability](#)



Cryo
Recovery

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CRYORECOVERY - DOMESTIC PRICING

SERVICE/PRODUCT	DESCRIPTION	PRICE
Cryo Recovery	Heterozygous for <i>Gria1</i> <tm4Rlh>	\$2,854.50

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Q U E S T I O N S A B O U T T E R M S O F U S E

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LICENSING INFORMATION

Phone: 207-288-6470

Email: TechTran@jax.org

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By Gene

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