B6.129P2-Fmr1<sup>tm1Cgr/J</sup>

Stock No: 003025

Congenic, Targeted Mutation

AVAILABLE NOW

PLACE ORDER

Live mice available in varying quantities. Ask Customer Service for details.

Overview
These Fmr1 knockout mice may be useful in applications related to the study of Fragile X Syndrome.

Donating Investigator
Dr. Stephen T. Warren, Emory University School of Medicine
Ben A Oostra, Erasmus University

GENETIC OVERVIEW

<table>
<thead>
<tr>
<th>Genetic Background</th>
<th>Generation</th>
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<tr>
<td>000664 C57BL/6J</td>
<td>N5F9pN3F13</td>
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<td>(2019-06-17 00:00:00)</td>
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Fmr1<sup>tm1Cgr</sup>

<table>
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<tr>
<th>Allele Type</th>
<th>Gene Symbol</th>
<th>Gene Name</th>
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<tbody>
<tr>
<td>Targeted (Null/Knockout)</td>
<td>Fmr1</td>
<td>fragile X mental retardation 1</td>
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RESEARCH APPLICATIONS

Neurobiology Research
Mouse/Human Gene Homologs
Developmental Biology Research
Details

Detailed Description
These Fmr1 knockout mice have a neomycin resistance cassette replacing exon 5 of the fragile X mental retardation syndrome 1 (Fmr1) gene. Defects in FMR1 cause Fragile X syndrome, one of the most common forms of inherited mental retardation. Fragile X syndrome is associated with an array of deficits in motor control, cognition, learning, and memory, although their overall brain morphology is generally normal. Male hemizygotes and female homozygotes are viable and fertile. Male hemizygotes show macroorchidism (enlarged testes). Macroorchidism in caused by an increased rate of Sertoli cell proliferation during embryogenesis which may be independent of FSH signalling. Male hemizygotes and females homozygotes also exhibit hyperactivity, learning deficits, altered dendritic spines of visual cortex pyramidal cells, and differences in a variety of behavioral tests. Comparison of homozygotes to wildtype littermates in hidden- and visible-platform water maze learning showed deficits in spatial learning and motor performance.

Development

Control Suggestions

Selected References

Genetics

Fmr1<sup>tm1Gr</sup>

Disease/Phenotype

Disease Terms

Research Areas By Genotype

Mammalian Phenotype Terms by Genotype

References

Technical Support
Genotyping Protocols
Melt Curve Analysis: Fmr1<sup>tm1Cgr</sup>
Standard PCR: Fmr1<sup>tm1Cgr</sup>

Genotyping resources and troubleshooting

Dietary Information
LabDiet® 5K52 formulation (6% fat)

Breeding Considerations
When maintaining a live colony, homozygous females can be bred with hemizygous males. Fmr1 is an X linked gene. Expected coat color from breeding Black

Additional Breeding and Husbandry Support

Mating System
Homozygote x Hemizygote

Appearance
black
Related Genotype: a/a

Citation
When using the B6.129<sup>Fmr1<sup>tm1Cgr</sup></sup>/J mouse strain in a publication, please cite the originating article(s) and include JAX stock #003025 in your Materials and Methods section.

Facility Barrier Level Descriptions
- AX11 (Maximum)

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**Pricing & Availability**

Live mice available in varying quantities. Ask Customer Service for details.

### Pricing

**Effective for USA, Canada and Mexico shipping destinations**

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<th>AGE</th>
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<td>Female</td>
<td>Homozygous for Fmr1&lt;sup&gt;tm1Cgr&lt;/sup&gt;</td>
<td>$236.78</td>
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<tr>
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All Related Strains