B6.129P2-Fmr1<sup>tm1Ggr</sup>/J

Stock No: 003025

Congenic/Targeted Mutation

PLEASE INQUIRE

PLACE ORDER

Ask Customer Service for an anticipated lead time
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>
</tr>
</thead>
<tbody>
<tr>
<td>000664 C57BL/6J</td>
<td>N5F9pN3F13</td>
</tr>
<tr>
<td></td>
<td>(2019-06-17 00:00:00)</td>
</tr>
</tbody>
</table>

| Fmr1tm1Cgr         |

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

RESEARCH APPLICATIONS

Neurobiology Research
Mouse/Human Gene Homologs
Developmental Biology Research
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.
Genotyping Protocols
Melt Curve Analysis: \( \text{Fmr1}^{\text{tm1Cgr}} \)
Standard PCR: \( \text{Fmr1}^{\text{tm1Cgr}} \)
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 citing use the strain name as \( \text{Fmr1}^{\text{tm1Cgr}} \). If the strain name is abbreviated as Fmr1, 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**

Ask Customer Service for an anticipated lead time

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### Pricing Table

<table>
<thead>
<tr>
<th>AGE</th>
<th>SEX</th>
<th>GENOTYPE</th>
<th>PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 weeks</td>
<td>Female</td>
<td>Homozygous for Fmr1^{tm1Cgr}</td>
<td>$236.78</td>
</tr>
<tr>
<td>4 weeks</td>
<td>Male</td>
<td>Homozygous for Fmr1^{tm1Cgr}</td>
<td>$236.78</td>
</tr>
<tr>
<td>5 weeks</td>
<td>Female</td>
<td>Homozygous for Fmr1^{tm1Cgr}</td>
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<tr>
<td>5 weeks</td>
<td>Male</td>
<td>Homozygous for Fmr1^{tm1Cgr}</td>
<td>$236.78</td>
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<tr>
<td>6 weeks</td>
<td>Female</td>
<td>Homozygous for Fmr1^{tm1Cgr}</td>
<td>$236.78</td>
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<tr>
<td>6 weeks</td>
<td>Male</td>
<td>Homozygous for Fmr1^{tm1Cgr}</td>
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<tr>
<td>7 weeks</td>
<td>Female</td>
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<td>$236.78</td>
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<tr>
<td>7 weeks</td>
<td>Male</td>
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<td>$236.78</td>
</tr>
</tbody>
</table>
Related Products and Services

| Frozen Mouse Embryo | $2,595.00 per straw or vial |

Payment Terms and Conditions

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Email: TechTran@jax.org

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Related Strains

All

By Allele

By Gene

By Collection

All Related Strains

FVB.129P2-Pde6b+ TyrC-ch Fmr1tm1Cgr/J
Stock No: 004624 | Fmr1 KO
Related By: Fmr1, Fmr1tm1Cgr

B6.129-Fmr1tm1Rbd/J
Stock No: 010504
Related By: Fmr1

B6.129P2(Cg)-Fmr1tm2Cgr/DlnJ
Stock No: 029052 | Fmr1 Cgg KI (C57BL/6 congenic)
Related By: Fmr1