Overview

This strain carries a floxed allele of **Megf8**, identified as a novel modifier of BMP4 (bone morphogenetic protein 4) signaling in trigeminal ganglion (TG) neurons. Cre excision of the floxed region creates a knockout of the gene.

Donating Investigator

David D. Ginty, Harvard Medical School

**GENETIC OVERVIEW**

**Genetic Background**

**Generation**

**Megf8<sup>tm1.2Ddg</sup>**

<table>
<thead>
<tr>
<th>Allele Type</th>
<th>Gene Symbol</th>
<th>Gene Name</th>
</tr>
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<tbody>
<tr>
<td>Targeted (Conditional ready (e.g. floxed), No functional change)</td>
<td><strong>Megf8</strong></td>
<td>multiple EGF-like-domains 8</td>
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</tbody>
</table>

**RESEARCH APPLICATIONS**

Research Tools
Neurobiology Research

Typically mice are recovered in 10-14 weeks. Contact Customer Service to place an order or for more information.
Megf8 (multiple EGF-like-domains 8) is widely expressed during early embryonic development with strong expression in the somites, limb buds, primordial gut, developing eye, and pharyngeal arches. Throughout embryogenesis and into the postnatal period, MEGF8 is present in the sensory neurons of the dorsal root ganglion and trigeminal ganglion, as well as the central nervous system including the developing neuroepithelium, postnatal hippocampus, layer 4/5 of the cortex and the olfactory bulb. Megf8 has been identified as a novel modifier of BMP4 (bone morphogenetic protein 4) signaling in trigeminal ganglion (TG) neurons. TG axon growth is robustly inhibited by BMP4, and this inhibition is dependent on MEGF8 expression.

The last exon of Megf8 is flanked by loxP sites in this conditional mutant strain. Cre excision of the floxed region creates a knockout of the gene. Loss of MEGF8 disrupts axon guidance in the peripheral nervous system and leads to defects in development of the limb, heart, and left-right patterning, defects that resemble those observed in BMP4 loss-of-function mice.
Genotyping Protocols
Standard PCR: *Megf8*
Genotyping resources and troubleshooting

Breeding Considerations
Homozygotes and heterozygotes are viable and fertile.

Additional Breeding and Husbandry Support

Citation
When using the STOCK *Megf8<sup>tm1.2Ddg</sup>*/J mouse strain in a publication, please cite the originating article(s) and include JAX stock #025417 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

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

| Cryo Recovery | Heterozygous or non carrier for *Megf8<sup>tm1.2Ddg</sup>* | $2,854.50 |
Related Products and Services

| Frozen Mouse Embryo | STOCK Megf8<tm1.2Ddg>/J Frozen Embryo | $2595.00 |

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Related Strains

All

By Allele

By Gene

By Collection

All Related Strains