These Oprm1 (or MOR-) knock-out mice exhibit a lack of morphine analgesia, reward, and withdrawal. These knock-out mice may be useful in studying the biological activity of opioids, analgesics, and responses to mechanical, chemical and thermal nociception at a supraspinal level.

Donating Investigator
Brigitte L. Kieffer, McGill University

**GENETIC OVERVIEW**

**Genetic Background**

<table>
<thead>
<tr>
<th>Generation</th>
</tr>
</thead>
<tbody>
<tr>
<td>N12+N2F5</td>
</tr>
</tbody>
</table>

**tm1Kff**

<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>Oprm1</td>
<td>opioid receptor, mu 1</td>
</tr>
</tbody>
</table>

**RESEARCH APPLICATIONS**

- Neurobiology Research
- Sensorineural Research
- Research Tools
Mice homozygous for the mu-opioid receptor mutant allele \( \text{Oprm1}^{\text{tm1Kff}} \) (or MOR-) are viable and fertile. MOR-selective ligand binding is absent on brain membranes from homozygous mice. Homozygous mice exhibit a lack of morphine analgesia, reward, and withdrawal. This is accompanied by decreased mechanical, thermal, and chemical pain thresholds. Homozygous mice also show decreased ethanol self-administration and decreased THC-conditioned place aversion. In contrast to mutant mice deficient of delta- or kappa-opioid receptors (Stock Nos. 007557 or 007558, respectively), \( \text{Oprm1}^{\text{tm1Kff}} \) homozygotes exhibit hypolocomotive spontaneous stress responses. Indeed, the reduced anxiety and depressive-like behavior observed in \( \text{Oprm1}^{\text{tm1Kff}} \) mutants is in stark contrast to kappa-opioid receptor deficient mice. These knock-out mice may be useful in studying the biological activity of opioids, analgesics, and responses to mechanical, chemical and thermal nociception at a supraspinal level.

In an attempt to offer alleles on well-characterized or multiple genetic backgrounds, alleles are frequently moved to a genetic background different from that on which an allele was first characterized. These mutant mice were originally published on a mixed genetic background. It should be noted that the phenotype could vary from that originally described. We will modify the strain description if necessary as published results become available.
Genotyping Protocols
Standard PCR: \textit{Oprm1}
Genotyping resources and troubleshooting
Dietary Information
LabDiet® 5K52 formulation (6% fat)
Breeding Considerations

When maintaining a live colony, heterozygous or homozygous mice may be bred.

Additional Breeding and Husbandry Support
Mating System
Homozygote x Homozygote

Citation
When using the MOR- mouse strain in a publication, please cite the originating article(s) and include JAX stock #007559 in your Materials and Methods section.

Animal Health Reports
Facility Barrier Level Descriptions

FGB29 (Standard)

Pricing & Availability

Live mice available in varying quantities. Ask Customer Service for details.
**Related Products and Services**

<table>
<thead>
<tr>
<th>Product</th>
<th>Strain</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frozen Mouse Embryo</td>
<td>B6.129S2-Oprm1&lt;tm1Kff&gt;/J</td>
<td>$2595.00</td>
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**Terms Of Use**

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Related Strains

- All
- By Allele
- By Gene
- By Collection
All Related Strains