R E A D  M O R E  +

Also Known As:Cul3

Cul3 (loxP::frt-neo::frt::exons4-7::loxP) is a cullin 3 hypomorphic allele that is converted to a null allele after Cre recombinase exposure. These mice may be useful in studying the function of Cullin-RING-based BTB-CUL3-RBX1 E3 ubiquitin-protein ligase complexes in multiple areas, including autism and cancer.

Donating Investigator
Jeffrey D Singer, Portland State University

PLACE ORDER

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

V I E W  G E N E T I C S

Cul3tm1Jdsr

<table>
<thead>
<tr>
<th>Allele Type</th>
<th>Gene Symbol</th>
<th>Gene Name</th>
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<tbody>
<tr>
<td>Targeted (Conditional ready (e.g. floxed), No functional change)</td>
<td>Cul3</td>
<td>cullin 3</td>
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V I E W  A L L  R E S E A R C H  A P P L I C A T I O N
Cul3 encodes the ubiquitin scaffold protein cullin 3; the core component of multiple cullin-RING-based BCR (BTB-CUL3-RBX1) E3 ubiquitin-protein ligase complexes that function to mediate the ubiquitination and subsequent proteasomal degradation of target proteins.

The Cul3^{loxP} allele has loxP sites flanking exons 4-7 of the Cul3 gene. The floxed region also contains a frt-flanked PGK-neo cassette upstream of exon 4. Cul3^{loxP} is a hypomorphic allele that is converted to a null allele (Cul3^{−/−} or C_R) after Cre recombinase exposure. Compared to wildtype (Cul3^{+/+}) MEFs, the Cul3 expression levels are diminished to ~85% in Cul3^{loxP} MEFs, ~70% in Cul3^{lox/lox} MEFs. Removal of the frt-flanked PGK-neo via Flp recombinase generates the Cul3^{loxΔneo} allele, which is also a hypomorph (Cul3 expression reduced to ~90% in Cul3^{loxΔneo/loxΔneo} MEFs).

When bred to mice that express Cre recombinase, the resulting offspring may be useful in generating tissue-specific CUL3 knockout.

For example, when Cul3^{loxP} are bred to also harbor an Albumin-Cre transgene (see Stock No. 016832) and a p53^{loxP} allele (see Stock No. 008462), the resulting triple mutant mice with liver-specific simultaneous ablation of CUL3 and p53 are useful to study hepatic progenitor cell transformation into malignant tumor-initiating cells and the subsequent primary hepatocellular carcinoma.

Breeding Cul3^{loxP} mice to also have the Pax8-rtTA transgene (Stock No. 007176) and Tet-promoter-driven Cre recombinase transgene (see Stock No. 006234), the resulting triple mutant mice allow doxycycline-inducible renal tubule–specific CUL3 knockout. When temporally induced in adult animals, this triple mutant can be used to study familial hyperkalemic hypertension (FHHt) without the systemic/developmental effects of early CUL3-deficiency.

Mice homozygous for the floxed allele (Cul3^{lox/lox}) are viable and fertile with no reported abnormalities (born at the expected rate and appear normal at birth and throughout development).
Genotyping Protocols
Separated PCR: Cul3-Alternate 1
Genotyping resources and troubleshooting

Breeding Considerations
When maintaining a live colony, heterozygous mice may be bred together, to wildtype mice from the colony or to C57BL/6NJ inbred mice (Stock No. 005304). Alternatively, homozygous mice may be bred together.

Additional Breeding and Husbandry Support
Mating System
Homozygote x Homozygote

Citation
When using the Cul3<sup>flox</sup> mouse strain in a publication, please cite the originating article(s) and include JAX stock #028349 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.

<table>
<thead>
<tr>
<th>SERVICE/PRODUCT</th>
<th>DESCRIPTION</th>
<th>PRICE</th>
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<tr>
<td>Cryo Recovery</td>
<td>Heterozygous for Cul3&lt;tm1Jdsr&gt;</td>
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Related Products and Services

<table>
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<tr>
<th>SERVICE/PRODUCT</th>
<th>DESCRIPTION</th>
<th>PRICE</th>
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<tbody>
<tr>
<td>Frozen Mouse Embryo</td>
<td>STOCK Cul3&lt;tm1Jdsr&gt;/J</td>
<td>$2,595.00</td>
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