The Axin2 mutation both abolishes endogenous gene function and expresses NLS-lacZ under the control of the endogenous promoter/enhancer regions. Homozygous mice exhibit a phenotype resembling craniosynostosis in humans.

Donating Investigator

Walter Birchmeier, Max-Delbrueck-Center for Mol. Medicine
Details

Detailed Description

Homozygous mice are viable and fertile, with the Axin2<sup>lacZ</sup> (or conductin<sup>lacZ</sup>) mutation that both abolishes endogenous Axin2 gene function and expresses NLS-lacZ under the control of the endogenous Axin2 promoter/enhancer regions. Homozygous mice exhibit cranial skull defects and malformations of skull structures; a phenotype resembling craniosynostosis in humans. Specifically, homozygous mice show an obvious reduction in head growth within the first 3 weeks after birth, resulting from developmental defects of the cranial skull (premature fusion of cranial sutures) at early postnatal stages. Axin2-deficient mice have abnormal calvarial morphogenesis/osteoblast development. Because Axin2 is a negative regulator of the canonical Wnt pathway that suppress signal transduction by promoting β-catenin degradation, the NLS-lacZ expression in these Axin2<sup>lacZ</sup> (or conductin<sup>lacZ</sup>) mutant mice may be useful in monitoring endogenous canonical Wnt signals in many tissues and organs during development, regeneration and tumorigenesis.

C57BL/6N-derived mice are homozygous for the recessive mutation retinal degeneration 8 (<i>Crb1</i><sup>rd8</sup>) - identified as a single base deletion in the <i>Crb1</i> gene that causes a frame shift and premature stop codon that truncates the transmembrane and cytoplasmic domain of the protein. Mice homozygous for <i>Crb1</i><sup>rd8</sup> exhibit retinal external limiting membrane fragmentation and outer retinal dysplasia, as well as multifocal retinal degeneration and the accumulation of subretinal microglia/macrophages [Mattapallil et al. 2012 Invest Ophthaimol Vis Sci. 53:2921, Mehalow et al. 2003 Hum Mol Genet. 12:2179, Luhmann et al. 2012 PLoS One 7:e35551]. Of note, C57BL/6J-derived mice are homozygous for the wildtype <i>Crb1</i> allele.

Development

Expression Data

Control Suggestions

Selected References

Genetics

<i>Axin2<sup>tm1Wbm</sup></i>
Disease/Phenotype

Disease Terms

Research Areas By Phenotype

Mammalian Phenotype Terms by Genotype

References

Technical Support

Genotyping Protocols
Standard PCR: Axin2
Probe: Axin2 Probe
Genotyping resources and troubleshooting

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

Additional Breeding and Husbandry Support
Mating System
Heterozygote x +/- sibling

Citation
When using the ConductinlacZ mouse strain in a publication, please cite the originating article(s) and include JAX stock #009120 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**

Pricing effective for USA, Canada and Mexico shipping destinations.

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<thead>
<tr>
<th>SERVICE/PRODUCT</th>
<th>DESCRIPTION</th>
<th>PRICE</th>
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<tbody>
<tr>
<td>Cryo Recovery</td>
<td>Heterozygous or wildtype for Axin2&lt;tm1Wbm&gt;</td>
<td>$2,854.50</td>
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<thead>
<tr>
<th>Related Products and Services</th>
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<td>Frozen Mouse Embryo</td>
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