These Pin1 knock-out mice develop increased levels of insoluble amyloid beta42 and have reduced cytokine expression. These mice may be suitable for use in studies related to Alzheimer Disease and Type 1 immune responses.

**Donating Investigator**

Dale Hoyt, The Ohio State University

**GENETIC OVERVIEW**

<table>
<thead>
<tr>
<th>Genetic Background</th>
<th>Generation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pin1&lt;sup&gt;tm1Tuc&lt;/sup&gt;</td>
<td></td>
</tr>
</tbody>
</table>

<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>Pin1</td>
<td>protein (peptidyl-prolyl cis/trans isomerase) NIMA-interacting 1</td>
</tr>
</tbody>
</table>

**RESEARCH APPLICATIONS**

- Cancer Research
- Research Tools
- Sensorineural Research
- Neurobiology Research
- Reproductive Biology Research

**PLACE ORDER**

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

**VIEW GENETICS**

**VIEW ALL RESEARCH APPLICATIONS**
**Details**

**Detailed Description**

The Pin1 gene encodes for a peptidyl-prolyl cis/trans isomerase which is involved in regulation of cell proliferation and cell survival as well as proline-directed kinase signaling. These mice carry a knock out allele for the Pin1 gene, in which the entire coding region (exons 1 through 4 and flanking sequence) has been replaced by a NEO cassette. No gene product (protein) is detected by Western blot analysis of MEFs from homozygous embryos aged E13.5. Mice that are heterozygous for the targeted mutation are viable and fertile. Homozygotes on the congenic C57BL/6 background are infertile due to impaired primordial germ cell development. Homozygous males exhibit testicular atrophy due to seminiferous-tubule degeneration. Homozygous females and the mammary glands do not undergo ductal proliferation during pregnancy. Knockout mice on the mixed B6;129P2 background develop increased levels (32% more) of insoluble amyloid beta42 in the brain by 15 months of age when compared to similarly aged wild-type mice. On the mixed B6;129P2 background, homozygotes develop motor impairment and half exhibit age dependent retinal degeneration. Cytokine expression and Type 1 immune response is reduced in homozygotes.

*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. 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.*

**Development**

**Control Suggestions**

**Selected References**

**Genetics**

*Pin1<sup>tm1Tuc</sup>*

**Disease/Phenotype**

**Disease Terms**
## Technical Support

### Genotyping Protocols

**Separated PCR:**

- \( \text{Pin1} \) alternate1

**Genotyping resources and troubleshooting**

### Breeding Considerations

When maintaining a live colony, heterozygous mice may be bred together, to wildtype siblings, or to C57BL/6J inbred mice (Stock No. 000664). Homozygotes on the congenic C57BL/6 background are infertile.

### Additional Breeding and Husbandry Support

### Citation

When using the B6.129P2-\( \text{Pin1}^{tm1Tuc} \) HoytArmJ mouse strain in a publication, please cite the originating article(s) and include JAX stock #025883 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>
</tr>
</thead>
<tbody>
<tr>
<td>Cryo Recovery</td>
<td>Heterozygous or wildtype for Pin1&lt;\text{tm1Tuc}&gt;</td>
<td>$2,854.50</td>
</tr>
</tbody>
</table>
RELATED PRODUCTS AND SERVICES

| Frozen Mouse Embryo | B6.129P2-Pin1<tm1Tuc>/HoytArmJ Frozen Embryo | $2595.00 |

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LICENSING INFORMATION

Phone: 207-288-6470
Email: TechTran@jax.org

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Related Strains

- All
- By Allele
- By Gene
- By Collection

All Related Strains