Also Known As: Arid1b Flox (Arid1b<sup>em2Hzhu</sup>; floxed exon 5)

Arid1b Flox (Arid1b<sup>em2Hzhu</sup>; floxed exon 5) mice have a CRISPR/cas9-generated, Cre-conditional knock-out allele. These mice may be useful in studying the SWI/SNF chromatin-remodeling complex, autism spectrum disorder, intellectual disability, corpus callosum agenesis and Coffin-Siris syndrome.

**Donating Investigator**
Hao Zhu, University of Texas Southwestern Medical Center [UTSW]

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### GENETIC OVERVIEW

<table>
<thead>
<tr>
<th>Genetic Background</th>
<th>Generation</th>
</tr>
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<tbody>
<tr>
<td>Arid1b&lt;sup&gt;em2Hzhu&lt;/sup&gt;</td>
<td></td>
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<table>
<thead>
<tr>
<th>Allele Type</th>
<th>Gene Symbol</th>
<th>Gene Name</th>
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<tbody>
<tr>
<td>Endonuclease-mediated (Conditional ready (e.g. floxed))</td>
<td>Arid1b</td>
<td>AT rich interactive domain 1B (SWI-like)</td>
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</tbody>
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### RESEARCH APPLICATIONS

- Cell Biology Research
- Neurobiology Research
- Research Tools
- Developmental Biology Research
- Cancer Research
ARID1B is a SWI/SNF chromatin-remodeling subunit. ARID1B haploinsufficiency in humans is associated with autism spectrum disorder, intellectual disability, corpus callosum agenesis and short stature. In addition, ARID1B mutation is the most common cause of Coffin-Siris syndrome.

The Arid1b Flox allele (Arid1b<sup>F</sup>) has loxP sites flanking exon 5. Mice homozygous for this floxed allele are viable and fertile, with no reported gross phenotypic or behavioral abnormalities.

Upon exposure to Cre recombinase, the floxed sequences are deleted - resulting in a null allele (Arid1b<sup>Δ</sup>). For example, when Arid1b Flox are bred to Nestin-Cre transgenic mice (e.g., Stock No. 003771), the resulting brain-specific ARID1B haploinsufficiency (Nestin-Cre; Arid1b<sup>F</sup>) leads to growth impairment and reduced plasma insulin-like growth factor (IGF1) levels with inappropriate lack of growth hormone (GH) increase - characteristics of ARID1B mutation in humans. [Celen et al. 2017 Elife 6:e25730]

Furthermore, breeding Arid1b Flox to mice with liver-specific or skeletal muscle-specific Cre-expression (Stock Nos. 003574 or 006475, respectively) generates mice with tissue-specific ARID1B haploinsufficiency. In the resulting offspring, neither Albumin-Cre; Arid1b<sup>F</sup> nor Ckmm-Cre; Arid1b<sup>F</sup> showed growth or morphological defects. [Celen et al. 2017 Elife 6:e25730]

In addition, breeding Arid1b Flox to germline Cre-expressing mice (e.g., Sox2-Cre; Stock No. 008454) should generate mice with the ARID1B global knock-out allele. Mice homozygous or heterozygous for the global knock-out allele can be expected to have the same phenotype as other ARID1B whole-body knock-out alleles. That is, homozygotes are perinatal lethal, while heterozygotes are viable and fertile with social behavior impairment, altered vocalization, anxiety-like behavior (increased self-grooming), neuroanatomical abnormalities and growth impairment. Approximately 7% of mice heterozygous for a whole-body knock-out of the gene also have hydrocephaly.

Selected References
Genetic mouse model: Arid1b<sup>em2Hzhu</sup>

**Disease/Phenotype**

**Disease Terms**

**Research Areas By Phenotype**

**Mammalian Phenotype Terms by Genotype**

**References**

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**Technical Support**

**Genotyping Protocols**

*Standard PCR:* Arid1b

Genotyping resources and troubleshooting

**Breeding Considerations**

Mice homozygous for the Arid1b Flox allele are viable and fertile, with no reported gross phenotypic or behavioral abnormalities. When maintaining a live colony, heterozygous mice may be bred together, to wildtype mice from the colony or to C57BL/6J inbred mice (Stock No. 000664). Alternatively, homozygous mice may be bred together.

**Additional Breeding and Husbandry Support**

**Mating System**

Heterozygote x Heterozygote

**Citation**

When using the Arid1b Flox (Arid1b<sup>F</sup>; floxed exon 5) mouse strain in a publication, please cite the originating article(s) and include JAX stock #032061 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.

### Domestic Pricing

<table>
<thead>
<tr>
<th>SERVICE/PRODUCT</th>
<th>DESCRIPTION</th>
<th>PRICE</th>
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<tr>
<td>Cryo Recovery</td>
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### Related Products and Services

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<tr>
<td>Frozen Mouse Embryo</td>
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**PAYMENT TERMS AND CONDITIONS**

Terms are granted by individual review and stated on the customer invoice(s) and account statement. These transactions are payable in U.S. currency within the granted terms. Payment for services, products, shipping containers, and shipping costs that are rendered are expected within the payment terms indicated on the invoice or stated by contract. Invoices and account balances in arrears of stated terms may result in The Jackson Laboratory pursuing collection activities including but not limited to outside agencies and court filings.

**THE JACKSON LABORATORY'S GENOTYPE PROMISE**

The Jackson Laboratory has rigorous genetic quality control and mutant gene genotyping programs to ensure the genetic background of JAX® Mice strains as well as the genotypes of strains with identified molecular mutations. JAX® Mice strains are only made available to researchers after meeting our standards. However, the phenotype of each strain may not be fully characterized and/or captured in the strain data sheets. Therefore, we cannot guarantee a strain's phenotype will meet all expectations. To ensure that JAX® Mice will meet the needs of individual research projects or when requesting a strain that is new to your research, we suggest ordering and performing tests on a small number of mice to determine suitability for your particular project. We do not guarantee breeding performance and therefore suggest that investigators order more than one breeding pair to avoid delays in their research.

**Terms Of Use**

**TERMS OF USE**

General Terms and Conditions
The use of this mouse model is subject to the terms and conditions of the Limited License from The Broad Institute.
The use of this mouse model is subject to the terms and conditions of the Limited Use Label License from Caribou Biosciences, Inc.
Use of MICE by companies or for-profit entities requires a license prior to shipping.

**LICENSING INFORMATION**

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

### Related Strains

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<tr>
<th>Related Strains</th>
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<tr>
<td>By Gene</td>
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<tr>
<td>By Collection</td>
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