Zfp335 (zinc finger protein 335; also known as identified as a NRC-interacting factor 1 (Nif1)) is a regulator of vertebrate neurogenesis. The mice carry a knockout allele derived from Emx-cre excision of a floxed promoter, exon 1 and exon 2. Homozygous progeny lack almost all cortical structure and cortical neurons, leading to the formation of a small brain with a thin sheath of tissue and enlarged ventricles.

Donating Investigator
Christopher Walsh, Boston Children's Hospital

**GENETIC OVERVIEW**

**Emx1\textsuperscript{tm1(cre)Krf}**

<table>
<thead>
<tr>
<th>Allele Type</th>
<th>Gene Symbol</th>
<th>Gene Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Targeted (Recombinase-expressing)</td>
<td>Emx1</td>
<td>empty spiracles homeobox 1</td>
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</table>

**Zfp335\textsuperscript{tm1.2Caw}**

<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>Zfp335</td>
<td>zinc finger protein 335</td>
</tr>
</tbody>
</table>
**Zfp335** (zinc finger protein 335; also identified as NRC-interacting factor 1 (Nif1)) is a regulator of vertebrate neurogenesis. As a component of the trithorax H3K4-methylation complex that regulates REST/NRSF, it is essential for neural cell progenitor self-renewal, neurogenesis, and neuronal differentiation. A c.3332g>a mutation in the human gene is associated with severe microcephaly, neuronal degeneration, and neonatal death.

In this knock-out strain, a floxed **Zfp335** promoter, exon 1 and exon 2 have been excised by **Emx1-cre** (see Stock No. 005628). Homozygous progeny lack almost all cortical structure and cortical neurons, leading to the formation of a small brain with a thin sheath of tissue and enlarged ventricles. Homozygous knockout mice are unhealthy after birth and almost all die by weaning age.

Although **Emx1-cre** is reported to be expressed primarily in the brain, it has been observed that some germline recombination also occurs in both males and females (notable when genotyping tail tip tissue). In the presence of **Emx1<sup>tm1(cre)Krj</sup>**, the **Zfp335<sup>tm1.2Caw</sup>** floxed allele will type as a null allele that may be transmitted to progeny via the germline.

If the recombinase activity pattern of the **Emx1-cre** allele is further characterized by the Genetic Resource Science group at The Jackson Laboratory, such findings will be reported on the Mouse Genome Informatics (MGI) Allele Detail entry. This same information may also be found searching the MGI Recombinase Activity and MGI Gene Expression + Recombinase Activity Comparison Matrix.

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**Development**

**Expression Data**

**Control Suggestions**

**Selected References**

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**Genetics**
Genotyping Protocols
Separated PCR: Zfp335
Genotyping resources and troubleshooting

Breeding Considerations

Homozygous Zfp335 knockout mice are unhealthy after birth and almost all die by weaning age. Heterozygotes may be bred. In the presence of Emx1^tm1(cre)Krj, the Zfp335^tm1.2Caw floxed allele will type as a null allele that may be transmitted to progeny via the germline.

Additional Breeding and Husbandry Support
Mating System
HET HOM X HET HO

Citation
When using the B6.Cg-Zfp335^tm1.2Caw Emx1^tm1(cre)Krj/J mouse strain in a publication, please cite the originating article(s) and include JAX stock #022762 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 Internationale

Pricing effective for USA, Canada and Mexico shipping destinations

<table>
<thead>
<tr>
<th>CRYORECOVERY - DOMESTIC PRICING</th>
<th>SERVICE/PRODUCT</th>
<th>DESCRIPTION</th>
<th>PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cryo Recovery</td>
<td>Heterozygous or wildtype for Zfp335&lt;tm1.2Caw&gt;, Heterozygous or wildtype for Emx1&lt;tm1(cre)Krj&gt;</td>
<td>$2,854.50</td>
<td></td>
</tr>
</tbody>
</table>

**RELATED PRODUCTS AND SERVICES**

| Frozen Mouse Embryo | B6.Cg-Zfp335<tm1.2Caw> Emx1<tm1(cre)Krj>/J Frozen Embryo | $2595.00 |

**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**
ADDITIONAL USE RESTRICTIONS APPLY
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

- All
- By Allele
- By Gene
- By Collection