**Overview**

**Also Known As: Vasa-Cre**

Ddx4-Cre (Vasa-Cre) transgenic mice have Cre recombinase expression directed to male and female embryonic germ cells. These mice may be useful in generating conditional germ cell knock-outs in both males and females for studies including infertility, gonadogenesis, gametogenesis, and the assembly, activation, and growth of primordial follicles.

In Goodwin et al. 2019 Genome Res. 29:494, it was discovered that Ddx4-Cre founder line 1 has more than 20 transgene copies integrated on chromosome 18 that caused a 1098 kbp deletion encompassing two loci - neuropilin (NRP) and tolloid (TLL)-like 1 (*Neto1*) and cerebellin 2 precursor protein (*Cbln2*).
Details

Detailed Description

Vasa-Cre (Ddx4-Cre) transgenic mice express Cre recombinase under the direction of the mouse Ddx4 promoter.

In Goodwin et al. 2019 Genome Res. 29:494, it was discovered that Vasa-Cre founder line 1 has more than 20 transgene copies integrated on chromosome 18 that caused a 1098 kbp deletion encompassing two loci - neuropilin (NRP) and tolloid (TLL)-like 1 (Neto1) and cerebellin 2 precursor protein (Cbln2). The deletion results in a functional knock-out of both genes in homozygous mice.

Mice hemizygous for this Ddx4-Cre transgene are viable and fertile. Transgenic cre activity is directed to male and female germ cells starting at embryonic day (e)15-e18. When bred with mice containing a loxP-flanked sequence of interest, Cre-mediated recombination will result in deletion of the flanked sequence. In such breedings, occasional hemizygous mice may exhibit variegated cre expression in skin epithelium or global cre expression (<20% incidence). Differential parent-of-origin transgene expression is observed. When the mother harbors Ddx4-Cre, virtually all progeny undergo global Cre-mediated recombination, even those that do
not inherit the transgene (which may be useful in converting a "floxed" allele to a null while obviating the need to perform additional crosses to remove the transgene). To achieve germ-line specific Cre-mediated recombination in offspring, paternal Ddx4-Cre mice should be used.

In crosses with some floxed alleles, global recombination may occur even when males are used as the Ddx4-Cre carriers. The basis of this "paternal" effect is not known, but may relate to the presence of Cre protein in sperm. This global recombination can occur more frequently with older males. Thus, when paternal-effect global recombination is observed, it is recommended that the youngest available Ddx4-Cre males be used for breeding (ideally 5-6 weeks, but less than 9 weeks of age). Once a male has proven to repeatedly give rise to globally-recombined progeny, he should no longer be used as a breeder.

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While another germ line cre-expressing strain, ZP3-Cre (see Stock No. 003651), permits recombination/deletion of loxP-flanked genes in growing follicles, Ddx4-Cre mice have additional cre expression in primordial follicles (early oogenesis) and in the male germline.

If the recombinase activity pattern of this 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 (Tg(Ddx4-cre)1Dcas). This same information would also be found searching the MGI Recombinase Activity database.
Genotyping Protocols
QPCR: Tg(Ddx4-cre)1Dcas
Probe: Gt(rosa)26sor

Standard PCR: Tg(Ddx4-cre)1Dcas
Standard PCR: Tg(Ddx4-cre)1Dcas
 Probe: Tg(Ddx4-cre)1Dcas-Chr18

Genotyping resources and troubleshooting

Breeding Considerations
When maintaining a live colony, hemizygous mice may be bred together or to wildtype siblings.

Additional Breeding and Husbandry Support
Mating System
Noncarrier x Hemizygote

Citation
When using the Vasa-Cre mouse strain in a publication, please cite the originating article(s) and include JAX stock #006954 in your Materials and Methods section.

Facility Barrier Level Descriptions
Production of mice from cryopreserved embryos or sperm occurs in a maximum barrier room, G200

Pricing & Availability

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

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<tr>
<th>SERVICE</th>
<th>GENOTYPE</th>
<th>PRICE</th>
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<tbody>
<tr>
<td>Cryo Recovery</td>
<td>Hemizygous or Non carrier for Tg(Ddx4-cre)1Dcas</td>
<td>$2,854.50</td>
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We will fulfill your order by providing at least two carriers for each strain ordered. The total number, sex, and genotypes provided will vary, although typically 8 or more animals are provided. Please check genotypes which will be recovered. While the genotypes of all animals produced will be communicated to you prior to scheduling shipment, the genotypes of animals provided may not reflect the mating scheme and genotypes described in the strain description. Animals are typically ready to ship in 11-14 weeks. If a second recovery is required to produce the minimum number of animals, then delivery time would increase to approximately 25 weeks. If we fail to produce animals of the correct genotype, you will not be charged. We cannot guarantee the reproductive success of mice shipped to your facility. If the mice are lost after the first three days (post-arrival) or do not produce progeny at your facility, a new order and fee will be necessary.

Cryo recovery to establish a Dedicated Supply for greater quantities of mice. Mice recovered can be used to establish a dedicated colony to contractually supply you mice according to your requirements. Price by quotation.

Related Products and Services
Frozen Mouse Embryo
FVB-Tg(Ddx4-cre)1Dcas/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.

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Related Strains

- All
- By Allele
- By Gene
- By Collection

All Related Strains