Overview

This CAG-CAT-Twist1 transgenic line expresses mouse Twist1, twist homolog 1 (Drosophila), gene in a Cre recombinase inducible fashion, and has applications in studies of craniofacial development, cartilage formation, endochondral ossification and heart valve development.

Donating Investigator

Douglas B Spicer, University of New England

GENETIC OVERVIEW

Tg(CAG-cat,-Twist1)1Dbsp

Allele Type
Transgenic (Inserted expressed sequence)

RESEARCH APPLICATIONS

Developmental Biology Research
Neurobiology Research
Research Tools
Details

Detailed Description

The TWIST1 basic helix loop helix transcription factor, plays a role in heart and bone development, as well as lineage specification, differentiation and tumorigenesis. Mutations of TWIST1 in humans are associated with Saethre-Chotzen syndrome and Robinow-Sorauf syndrome. When CAG-CAT-Twist1 transgenic mice are crossed with a Cre recombinase-expressing strain, the floxed (cat) chloramphenicol acetyltransferase gene is deleted and the CAG promoter drives expression of the mouse Twist1, twist homolog 1 (Drosophila), gene in the cre-expressing cells. The floxed (cat) chloramphenicol acetyltransferase gene serves as a reporter/silencer, preventing expression of Twist1 in the absence of Cre recombinase activity, and as a reporter for transgenic expression.

Mice homozygous for the transgenic insert are viable, fertile and exhibit no overt phenotype. The Donating Investigator reports that there are no phenotypic differences between hemizygotes and homozygotes.

When bred to a strain with Cre recombinase expression in neural crest cells (see Stock No. 003829 for example), this mutant mouse strain may be useful in studies of craniofacial development.

When bred to a strain with Cre recombinase expression in endothelial cells (see Stock No. 004128 for example), this mutant mouse strain may be useful in studies of heart valve development.

When bred to a strain with Cre recombinase expression in chondrocytes (see Stock No. 003554 for example), this mutant mouse strain may be useful in studies of ossification, growth plate development, and dwarfism.
Genotyping Protocols
Separated PCR: Tg(CAG-cat,Twist1)1Dbsp
Standard PCR: Tg(CAG-cat,Twist1)1Dbsp
Genotyping resources and troubleshooting

Breeding Considerations
When maintaining a live colony, these mice can be bred as hemizygotes or homozygotes.

Additional Breeding and Husbandry Support

Citation
When using the FVB-Tg(CAG-cat,-Twist1)1Dbsp/J mouse strain in a publication, please cite the originating article(s) and include JAX stock #018543 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.
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**