C57BL/6-Tg(Tcra2D2,Tcrb2D2)1Kuch/J

Stock No: 006912 | TCR MOG

Coisogenic, Transgenic

REPOSITORY LIVE

PLACE ORDER

0–2 week average lead time for 10 or more mice with age range

Also Known As: TCR MOG

These 2D2 TCR transgenic mice develop spontaneous diseases similar in incidence and manifestation to those developed by multiple sclerosis patients. These mice may be useful for studying the myelin oligodendrocyte glycoprotein specific, self-reactive T cell repertoire, as well as to study optic neuritis and its relationship to the development of autoimmunity in the CNS.

Donating Investigator
Vijay Kuchroo, Brigham and Women’s Hospital

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GENETIC OVERVIEW

<table>
<thead>
<tr>
<th>Genetic Background</th>
<th>Generation</th>
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<tr>
<td>N22–N9</td>
<td>(2018-08-08 00:00:00)</td>
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</table>

Tg(Tcra2D2,Tcrb2D2)1Kuch

Allele Type
Transgenic (Inserted expressed sequence)

VIEW GENETICS

RESEARCH APPLICATIONS

Research Tools
Immunology, Inflammation and Autoimmunity Research
Sensorineural Research

VIEW ALL RESEARCH APPLICATIONS
Details

Detailed Description

Mice hemizygous for this "2D2 TCR" (or MOG 35-55 specific TCR) transgene are viable and fertile. The myelin oligodendrocyte glycoprotein (MOG)-specific transgenic T cells are not deleted nor tolerized and are functionally competent. The majority of thymocytes in 2D2 TCR mice express high and intermediate levels of the transgenic T cell receptor (TCR), indicating efficient positive selection of transgenic T cells. The majority of CD4<sup>+</sup> splenocytes express the transgenic TCR (as defined by Valpha3.2 and Vbeta11 expression). Cultured splenocytes are responsive to whole myelin oligodendrocyte glycoprotein (MOG) and to MOG 35-55 peptide, but not to ovalbumin (OVA) control peptides. From between 2.5 to 5 months of age, 4% of 2D2 TCR mice develop spontaneous experimental autoimmune encephalomyelitis (EAE), while within the first year 40% of 2D2 TCR mice develop spontaneous, isolated optic neuritis with neither clinical nor histological evidence of EAE. Standard EAE induction protocols produce typical EAE in 2D2 TCR mice, but injection of suboptimal doses of MOG is sufficient to trigger the optic neuritis without stimulating widespread EAE in the central nervous system (CNS). Because the spontaneous diseases observed in 2D2 TCR mice are similar in their incidence and manifestations to those developed by multiple sclerosis (MS) patients, these mice may be useful in immunological studies to investigate the role and nature of the MOG-specific, self-reactive T cell repertoire, as well as to study optic neuritis and its relationship to the development of autoimmunity in the CNS.

Development

Expression Data

Control Suggestions

Selected References

Genetics

Tg(Tcra2D2, Tcrb2D2)1Kuch

Disease/Phenotype

Disease Terms

Research Areas By Genotype

Mammalian Phenotype Terms by Genotype
Genotyping Protocols
MELT: Tg(Tcra2D2)1Kuch
QPCR: Tg(Tcra2D2,Tcrb2D2)1Kuch
Genotyping resources and troubleshooting

Dietary Information
LabDiet® 5K52 formulation (6% fat)

Breeding Considerations
When maintaining a live colony, hemizygous mice are bred to wildtype (noncarrier) siblings or to C57BL/6J inbred mice (Stock No. 000664).

Additional Breeding and Husbandry Support

Mating System
+/+ sibling x Hemizygote

Citation
When using the Tg(Tcra2D2,Tcrb2D2)1Kuch mouse strain in a publication, please cite the originating article(s) and include JAX stock #006912 in your Materials and Methods section.

Facility Barrier Level Descriptions

AX10 (Standard)

Pricing & Availability

0–2 week average lead time for 10 or more mice with age range

<table>
<thead>
<tr>
<th>Deposit</th>
<th>Live Mouse</th>
<th>SEX</th>
<th>GENOTYPE</th>
<th>PRICE</th>
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<tbody>
<tr>
<td>Repository</td>
<td>Live Mouse</td>
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<tr>
<td></td>
<td></td>
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<td>Male</td>
<td>Hemizygous for Tg(Tcra2D2,Tcrb2D2)1Kuch</td>
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<tr>
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<td>5 weeks</td>
<td>Female</td>
<td>Hemizygous for Tg(Tcra2D2,Tcrb2D2)1Kuch</td>
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<td>5 weeks</td>
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<tr>
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### Breeder Pair

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<td>Male</td>
<td>Noncarrier</td>
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### Related Products and Services

<table>
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<tr>
<th>Product</th>
<th>Price</th>
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<tbody>
<tr>
<td>Frozen Mouse Embryo</td>
<td>$2,595.00 per straw or vial</td>
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