Overview

This faculty strain has been discontinued but is available as Stock No. 007878.

This BXSB congenic strain lacks alpha/beta T cells and thus the homozygous null males do not develop the Yaa-induced lupus-like autoimmune disease. Mice from this strain are valuable for adoptive transfer experiments that study the role of T cells in systemic autoimmunity and lupus.
GENETIC OVERVIEW

<table>
<thead>
<tr>
<th>Genetic Background</th>
<th>Generation</th>
</tr>
</thead>
<tbody>
<tr>
<td>000740 BXSB/MpJ</td>
<td></td>
</tr>
</tbody>
</table>

**Yaa**

<table>
<thead>
<tr>
<th>Allele Type</th>
<th>Gene Symbol</th>
<th>Gene Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spontaneous</td>
<td>Yaa</td>
<td>accelerated autoimmunity and lymphoproliferation transposition</td>
</tr>
</tbody>
</table>

**Tcra<sup>tm1Mjo</sup>**

<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>Tcra</td>
<td>T cell receptor alpha chain</td>
</tr>
</tbody>
</table>

RESEARCH APPLICATIONS

Immunology, Inflammation and Autoimmunity Research
Research Tools
Hematological Research

**Details**

**Detailed Description**

Male mice on the BXSB recombinant inbred genetic background (see Stock No. 000740) develop spontaneous autoimmune disease closely resembling the human disease systemic lupus erythematosus (SLE), including moderate lymph node and spleen enlargement, hemolytic anemia, hypergamma-globulinemia, and immune complex glomerulonephritis. Homozygotes for the \( Tcra \) null allele lack alpha/beta T cells, which are essential for the development of the lupus-like autoimmune disease of Yaa-bearing males on the BXSB/MpJ background. Lacking alpha/beta T cells, these homozygotes do not develop anti-chromatin autoantibodies or hypergamma-globulinemia, do not develop glomerulonephritis, do not have the expanded Mac<sup>1</sup> MHC class II negative monocytosis, which is found in BXSB/MpJ males, but instead were found to survive 300 days essentially disease-free. Transfer of alpha/beta T cells from adult BXSB mice into these TCR alpha/beta null hosts conferred disease to the host even when the donor was female and therefore lacking the Yaa translocation (Lawson et al., 2001).
Genotyping Protocols
Genotyping resources and troubleshooting

Mating System
Homozygote x Homozygote

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

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Related Strains

All Related Strains

All

By Allele

By Gene

By Collection

<table>
<thead>
<tr>
<th>Strain Name</th>
<th>Stock No</th>
<th>Related By</th>
</tr>
</thead>
<tbody>
<tr>
<td>C57BL/6-Tg(TcraTcrb)1100Mjb/J</td>
<td>003831</td>
<td>Tcra</td>
</tr>
<tr>
<td>B6.129S2-Tcra(^{tm1Mom})/J</td>
<td>002116</td>
<td>Tcra KO</td>
</tr>
<tr>
<td>B6.Cg-Tg(TcraTcrb)425Cbn/J</td>
<td>004194</td>
<td>Tcra</td>
</tr>
</tbody>
</table>

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