This knockout mutant of the \textit{Pdcd4} (programmed cell death 4) gene exhibits reduced cytokine secretion, lower susceptibility to LPS challenge and EAE, resistance to STZ-induced diabetes, and develops spontaneous lymphoma.

Donating Investigator
Youhai Chen, University of Pennsylvania

\textbf{GENETIC OVERVIEW}

\begin{tabular}{l l l}
Genetic Background & Generation & \\
\textit{Pdcd4} & \textit{tm1Yhcn} & \\
\end{tabular}

\begin{tabular}{l l l}
Allele Type & Gene Symbol & Gene Name & \\
Targeted (Null/Knockout) & \textit{Pdcd4} & programmed cell death 4 & \\
\end{tabular}

\textbf{RESEARCH APPLICATIONS}

Research Tools
Immunology, Inflammation and Autoimmunity Research

\textbf{BASE PRICE}
Starting at:
The programmed cell death 4 protein is a proinflammatory agent and tumor suppressor that also inhibits translation initiation and cap-dependent translation. MicroRNA-21 (miR-21) downregulates Pdcd4 expression post-translationally. Mice homozygous for this knockout mutation of Pdcd4 are viable and fertile, however 86% of homozygotes die due to lymphoma by 106 weeks of age (mean life expectancy of homozygotes is reduced to 101 weeks). At approximately 20 months of age, many homozygotes develop spontaneous lymphoma (primarily diffuse B cell), often with metastasis to liver and kidney. Approximately half of homozygotes at 20 weeks of age exhibit kidney, ovary, or prostate cysts. No Pdcd4 mRNA or protein is detected by Northern or Western blot analysis of thymus. Homozygotes are resistant to STZ (streptozotocin) induced diabetes (5% compared to 59% in controls), and exhibit reduced severity and mortality of EAE (experimental autoimmune encephalomyelitis). IL-4, IL-10, and IFNG cytokine secretion is elevated in homozygous animals. Homozygotes display reduced susceptibility to and lower circulating IL-6 levels after lipopolysaccharide (LPS) challenge, and lower resulting mortality compared to wildtype controls. During backcrossing, the Y chromosome may not have been fixed to the C57BL/6J genetic background.
Genotyping Protocols
Separated MCA: Pdcd4alternate1
Separated PCR: Pdcd4alternate1
Standard PCR: Generic Neo
Probe: Generic Neo
Genotyping resources and troubleshooting

Breeding Considerations
When maintaining a live colony, these mice can be bred as homozygotes, however 86% of homozygotes die by 106 weeks of age (mean life expectancy of homozygotes is reduced to 101 weeks).

Additional Breeding and Husbandry Support

Citation
When using the B6.129S6-Pdcd4<tm1Yhcn>/J mouse strain in a publication, please cite the originating article(s) and include JAX stock #018164 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.

<table>
<thead>
<tr>
<th>SERVICE/PRODUCT</th>
<th>DESCRIPTION</th>
<th>PRICE</th>
</tr>
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<tbody>
<tr>
<td>Cryo Recovery</td>
<td>Heterozygous for Pdcd4&lt;tm1Yhcn&gt;</td>
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Related Products and Services

Frozen Mouse Embryo  B6.129S6-Pdcd4<tm1Yhcn>/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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Terms Of Use

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Related Strains

All

By Allele

By Gene

By Collection

All Related Strains