Overview

These C57BL/6-plt mice harbor the spontaneous plt (or "paucity of lymph node T cells") deletion of the Ccl19 and Ccl21a loci on chromosome 4. Lack of expression of these two CCR7 receptor ligands in the secondary lymphoid organs results in abnormal leukocyte migration and impaired immune response. These mutant mice may be useful in studying leukocyte migration into lymphatic tissues, elucidating differences between T cell and B cell trafficking, and the role of stromal cells in bringing naive T cells and dendritic cells together for the initiation of immune responses.

Donating Investigator

Hideki Nakano, NIEHS/NIH
**GENETIC OVERVIEW**

<table>
<thead>
<tr>
<th>Genetic Background</th>
<th>Generation</th>
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<td>plt</td>
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**Allele Type**
- Spontaneous

**Gene Symbol**
- plt

**Gene Name**
- paucity of lymph node T cells

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**RESEARCH APPLICATIONS**

**Research Tools**
- Immunology, Inflammation and Autoimmunity Research
- Developmental Biology Research
- Internal/Organ Research
- Cardiovascular Research
- Hematological Research
- Cancer Research

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**BASE PRICE**

Starting at: $2,854.50

Domestic price

Cryo Recovery

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**Details**

Homozygous C57BL/6-plt mice are viable and fertile, harboring the spontaneous plt (or "paucity of lymph node T cells") deletion of both the Ccl19 and Ccl21a loci on chromosome 4. Lack of expression of these two CCR7 ligands in the secondary lymphoid organs results in abnormal leukocyte migration and impaired immune response. Specifically, homozygous mice have disrupted trafficking/homing of T cells and dendritic cells to lymphoid tissues. No reported abnormalities in B cell distribution/cellularity are reported for homozygous mice. Transient migration of antigen-stimulated B cells in lymphoid organs (which facilitates B cell/helper T cell interactions) is also impaired in homozygous mice. Homozygous mice exhibit mature single-positive thymocyte arrest in the thymic cortex that results in defective formation of the medullary region of the thymus. Thymic export of T cells in these mice is compromised during the neonatal period but not in adulthood. While CCL21 expression is absent in lymphoid organs because of the Ccl21a deletion, CCL21 expression in non-lymphoid organs is observed because the upstream Cc121b locus remains intact. These C57BL/6-plt mice may be useful in studying leukocyte migration into lymphatic tissues, elucidating differences between T cell and B cell trafficking, and the role of stromal cells in bringing naive T cells and dendritic cells together for the initiation of immune responses.

The donating investigator provided these C57BL/6-plt mice, as well as plt mice congenic on a BALB/c genetic background (BALB/c-plt; Stock No. 012873). The donating investigator reports dendritic cell migration is severely impaired in both homozygous strains. In addition, they report T cell homing to lymph nodes is severely impaired in BALB/c-plt homozygotes, but mildly impaired in C57BL/6-plt homozygotes. BALB/c-plt homozygous mice have been shown to allow enhanced survival of MHC-mismatched islet allografts (this phenotype is not characterized for C57BL/6-plt mice [July 2010]).
C O N T A C T  T E C H N I C A L  S U P P O R T

Genotyping Protocols
Standard PCR: plt/Nkno (D4Mit286)
Standard PCR: plt/Nkno (D4Mit237)
Genotyping resources and troubleshooting

Breeding Considerations
When maintaining a live colony, homozygous mice may be bred together.

Additional Breeding and Husbandry Support

Citation
When using the B6N.DDD-plt/NknoJ mouse strain in a publication, please cite the originating article(s) and include JAX stock #012866 in your Materials and Methods section.

Animal Health Reports
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
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