Homozygotes of this Tet2 knockout strain exhibit increases in the numbers of bone marrow myeloid progenitor cells and hematopoietic stem cells. These mice would be suitable in applications related to DNA demethylation, hematopoietic stem cell self-renewal and differentiation, hematopoiesis and tumorigenesis.

Donating Investigator
Anjana Rao, La Jolla Institute for Allergy and Immunology
Details

Detailed Description

The Tet methylcytosine dioxygenase 2 (Tet2) gene encodes a methylcytosine dioxygenase involved in myelopoiesis, tumor suppression and DNA demethylation. These mice carry a targeted mutation of the Tet2 gene in which exons 8 through 11 (encoding the catalytic domain) are deleted. No gene product (mRNA) is detected by real time PCR analysis of naive CD4 T cells from homozygotes. Homozygotes exhibit an increase in the total number of cells in the bone marrow and spleen. The numbers of bone marrow myeloid progenitor cells and hematopoietic stem cells are increased in homozygotes at 8 to 12 weeks of age. Knockout mice have reduced levels of 5-hydroxymethylcytosine in bone marrow and spleen. During backcrossing, the Y chromosome may not have been fixed to the C57BL/6J genetic background. Mice that are homozygous for the allele are viable and fertile. The Donating Investigator reports that homozygous X homozygous crosses can produce fewer pups than homozygous female X heterozygous male crosses.

Development

Control Suggestions

Selected References

Genetics

Tet2^{tm1.2Rao}

Disease/Phenotype

Disease Terms

Research Areas By Phenotype
Genotyping Protocols
Standard PCR: Tet2
Genotyping resources and troubleshooting

Breeding Considerations
When maintaining a live colony, these mice can be bred as homozygotes. The Donating Investigator reports that homozygous X homozygous crosses can produce fewer pups than homozygous female X heterozygous male crosses.

Additional Breeding and Husbandry Support
Mating System
Heterozygote x Homozygote
Homozygote x Heterozygote

Citation
When using the Tet2- mouse strain in a publication, please cite the originating article(s) and include JAX stock #023359 in your Materials and Methods section.

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Facility Barrier Level Descriptions

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Pricing & Availability

Live Mouse

<table>
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<th>AGE</th>
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Related Products and Services

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