Overview

This knockout allele causes severely impaired T helper cell (Th2) immune responses, retinal detachment, as well as abnormal insulin signaling and glucose transport. These mice are suitable for use in applications related to T cell development, Th2-mediated disease, asthma, diabetes, and exudative retinal detachment.

GENETIC OVERVIEW
Mice homozygous for the Prkcq<sup>tm1Litt</sup> targeted allele are viable, fertile, normal in size, and do not display any behavioral abnormalities. No endogenous or truncated protein product was detected in thymocytes or T cells. Mature T lymphocytes from null mice have blunted proliferative responses with decreased levels of both IL-2 and IL-2 receptor, and defective T cell receptor-initiated IkappaB-degradation/NF-kappaB activation. Homozygous mice exhibit severely impaired Th2, but normal Th1, immune responses as well as abnormal insulin signaling and glucose transport. Mutant mice also have defective regulatory T cell development (very low CD25 expression). Additionally, homozygotes develop retinal detachments and late-onset retinal pigment epithelium atrophy. This strain is also homozygous for the Crb1<sup>rd8</sup> mutation, which itself causes retinal spotting and retinal degeneration. Crb1<sup>rd8</sup> is also absent from Stock No. 028488. This mutant may be suitable for use in studies related to T cell proliferation/signal transduction/immunodeficiency, Th2-mediated disease, asthma, diabetes, and exudative retinal detachment. No significant difference in ocular phenotype has been detected between mice homozygous for Prkcq<sup>tm1Litt</sup> and wild-type at Crb1 with those doubly homozygous for both Prkcq<sup>tm1Litt</sup> and Crb1<sup>rd8</sup>. 

Details

Detailed Description

Mice homozygous for the Prkcq<sup>tm1Litt</sup> targeted allele are viable, fertile, normal in size, and do not display any behavioral abnormalities. No endogenous or truncated protein product was detected in thymocytes or T cells. Mature T lymphocytes from null mice have blunted proliferative responses with decreased levels of both IL-2 and IL-2 receptor, and defective T cell receptor-initiated IkappaB-degradation/NF-kappaB activation. Homozygous mice exhibit severely impaired Th2, but normal Th1, immune responses as well as abnormal insulin signaling and glucose transport. Mutant mice also have defective regulatory T cell development (very low CD25 expression). Additionally, homozygotes develop retinal detachments and late-onset retinal pigment epithelium atrophy. This strain is also homozygous for the Crb1<sup>rd8</sup> mutation, which itself causes retinal spotting and retinal degeneration. Crb1<sup>rd8</sup> is also absent from Stock No. 028488. This mutant may be suitable for use in studies related to T cell proliferation/signal transduction/immunodeficiency, Th2-mediated disease, asthma, diabetes, and exudative retinal detachment. No significant difference in ocular phenotype has been detected between mice homozygous for Prkcq<sup>tm1Litt</sup> and wild-type at Crb1 with those doubly homozygous for both Prkcq<sup>tm1Litt</sup> and Crb1<sup>rd8</sup>.

Development
Genetics

Crb1\textsuperscript{rd8}

Prkcq\textsuperscript{tm1Litt}

Disease/Phenotype

Disease Terms

Research Areas By Phenotype

Mammalian Phenotype Terms by Genotype

References

Technical Support

Genotyping Protocols
Genotyping resources and troubleshooting

Breeding Considerations
This strain is maintained by sibling intercrossing mice homozygous for both Crb1\textsuperscript{rd8} and Prkcq\textsuperscript{tm1Litt}.

Additional Breeding and Husbandry Support
Mating System
Homozygote x Homozygote

Citation
When using the B6.Cg-Crb1\textsuperscript{rd8}Prkcq\textsuperscript{tm1Litt}/JBoc mouse strain in a publication, please cite the originating article(s) and include JAX stock #031293 in your Materials and Methods section.

Animal Health Reports

Stock #031293

MGL277 (Low)

Pricing & Availability

Availability Varies

Domestic International
Live Mouse

<table>
<thead>
<tr>
<th>AGE</th>
<th>SEX</th>
<th>GENOTYPE</th>
<th>PRICE</th>
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</thead>
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<tr>
<td>Approx 4-8 weeks</td>
<td>Female</td>
<td>Homozygous for Crb1&lt;sup&gt;rd8&lt;/sup&gt; Homozygous for Prkcq&lt;sup&gt;tm1Litt&lt;/sup&gt;</td>
<td>$242.59</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Homozygous for Crb1&lt;sup&gt;rd8&lt;/sup&gt; Homozygous for Prkcq&lt;sup&gt;tm1Litt&lt;/sup&gt;</td>
<td>$242.59</td>
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</tbody>
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Related Strains

All

By Allele

By Gene

By Collection

All Related Strains