B6.Cg-<sup>Fcgrt</sup> tm1Dcr Prkdc<sup>scid</sup> Tg(FCGRT)32Dcr/DcrJ

Stock No: 018441 | scid FcRn-/ hFcRn (32) Tg

Also Known As: scid FcRn-/ hFcRn (32) Tg

These scid FcRn-/ hFcRn (32) Tg mice express a human alpha chain FCGRT molecule in lieu of the endogenous mouse Fcgrt. The scid allele makes the mice immunodeficient, therefore allowing the ability to test potential immunogenic hlgGs and to perform xenograft studies in addition to evaluating the pharmacokinetics of human immunoglobulin and Fc-domain based therapeutics.

Donating Investigator

Dr. Derry Roopenian, The Jackson Laboratory

Genetic Background

| Generation | N11F14×F15 (2018-05-07 00:00:00) |

Prkdc<sup>scid</sup>

<table>
<thead>
<tr>
<th>Allele Type</th>
<th>Gene Symbol</th>
<th>Gene Name</th>
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<tbody>
<tr>
<td>Spontaneous</td>
<td>Prkdc</td>
<td>protein kinase, DNA activated, catalytic polypeptide</td>
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Fcgrtm1Dcr

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<th>Gene Name</th>
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<tr>
<td>Targeted (Null/Knockout)</td>
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Tg(FCGRT)32Dcr

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<td>Transgenic (Inserted expressed sequence, Humanized sequence)</td>
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Details

**Detailed Description**

These mFcRn-/- hFcRn (32) Tg mice are homozygous for the knockout mutation of the FcRn α-chain (Fcgrt<sup>tm1Ocr</sup>) and express a human FcRn α-chain (FCGRT) transgene. By itself, the homozygous Fcgrt KO allele mice have low serum levels of IgG and albumin (Roopenian et al. J Immunol. 2003 Apr 1;170(7):3528-33; Chadhury et al. J Exp Med. 2003 Feb 3;197(3):315-22; Stein et al. 2012).

They fail to recycle IgG and albumin, and to transport IgG across the neonatal gut. By introducing the FCGRT transgene the albumin levels are restored to wild type, but the IgG levels remain low due to species-specific binding of IgG by human FCGRT. The transgenic founder line 32 provides a model to study serum half-life of human IgG (hIgG), with a good correlation to cynomolgus monkey and human. In addition, the model may be used to compare the serum half-life of antibodies as when screening FcRn binding variants (Petkova et al. 2006). When comparing the Tg32 model to Tg276 (see Stock No. 004919) overall longer half-lives have been observed, making it a better model for short-lived hIgs and Fc-fusion proteins. The humanized FcRn-/- hFcRn (32) Tg mice that are also homozygous for the Prkdc<sup>scid</sup> allele produce no mature T cells or B cells, therefore allowing the ability to test potential immunogenic hlgGs and to perform xenograft studies in addition to evaluating the pharmacokinetics of human immunoglobulin and Fc-domain based therapeutics.

Development

Expression Data

Control Suggestions

Genetics

**Prkdc<sup>scid</sup>**

**Fcgrt<sup>tm1Ocr</sup>**
**Technological Support**

**Genotyping Protocols**
- End Point Analysis: Prkd<sup>scid</sup>
- Standard PCR: Fcg<sup>tm1Dcr</sup>
- QPCR: Tg(FCGRT)-qPCR
- MELT: Fcg<sup>tm1Dcr</sup>Alternate1
- MELT: Tg(FCGRT)-Chr2

**Dietary Information**
- LabDiet<sup>®</sup> 5LA6 11%

**Breeding Considerations**
- When maintaining a live colony, mice homozygous for the FcRn <sup>−</sup>-chain targeted allele (Fcg<sup>tm1Dcr</sup>), homozygous for the scid allele, and hemizygous or homozygous for the hFcRn (32) transgene (Tg(FCGRT)32Dcr) may be bred together.

**Citation**
- When using the strain FcRn<sup>−</sup>hFcRn (32) Tg mouse strain in a publication, please cite the originating article(s) and include JAX stock #018441 in your Materials and Methods section.

**Facility Barrier Level Descriptions**
- AX11 (Maximum)

**Pricing & Availability**
- Ask Customer Service for expected lead time.
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<td>Homozygous for Fcgr1&lt;sup&gt;Im1Dcr&lt;/sup&gt; Homozygous for Prkdc&lt;sup&gt;scid&lt;/sup&gt; Homozygous for Tg(FCGRT)32Dcr</td>
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<tr>
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<td>$271.00</td>
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Frozen Mouse Embryo | $2,595.00 per straw or vial

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Email: TechTran@jax.org

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### Related Strains

- All
- By Allele
- By Gene