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

Congenic, Spontaneous Mutation, Targeted Mutation, Transgenic

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Overview

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 hIgGs and to perform xenograft studies in addition to evaluating the pharmacokinetics of human immunoglobulin and Fc-domain based therapeutics.

Need assistance evaluating antibodies in FcRn mice? Human preclinical pharmacokinetic (PK) analysis is available. See our FcRn full service platform.

Donating Investigator

Dr. Derry Roopenian, The Jackson Laboratory
These mFcRn-/- hFcRn (32) Tg mice are homozygous for the knockout mutation of the FcRn α-chain (Fcgrt<sup>tm1Dcr</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 <i>Prkdc<sup>scid</sup></i> allele produce no mature T cells or B cells, therefore allowing the ability to test potential immunogenic hIgs and to perform xenograft studies in addition to evaluating the pharmacokinetics of human immunoglobulin and Fc-domain based therapeutics.
Genotyping Protocols
End Point Analysis: Prkdc<sup>scid<sub>tm1Dcr</sub></sup>
Standard PCR: Fcgr<sup>im1Dcr</sup>
Standard PCR: Fcgr<sup>im1Dcr</sup>
QPCR: Tg(FCGRT)
Probe: Tg(FCGRT)-Chr2-Probe

Genotyping resources and troubleshooting

Dietary Information
LabDiet® 5LA6 11%

Breeding Considerations
When maintaining a live colony, mice homozygous for the FcRn -chain targeted allele (Fcgr<sup>im1Dcr</sup>), homozygous for the scid allele, and hemizygous or homozygous for the hFcRn (32) transgene (Tg(FCGRT)32Dcr) may be bred together.

Additional Breeding and Husbandry Support

Citation
When using the scid FcRn-/- 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.

Animal Health Reports
Facility Barrier Level Descriptions

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### Live Mouse

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### Related Products and Services

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