



STOCK *gfrb*^{tm143} / J

Stock No: 018435 | PDGFRB KI

Targeted Mutation



CRYORECOVERY

PLACE ORDER

Typically mice are recovered in 10-14 weeks. Contact Customer Service to place an order or for more information.

Also Known As: PDGFRB KI

The PDGFR β ^{(S)K} conditional knockin allele has the endogenous PDGFR β sequences replaced with a floxed-STOP cassette upstream of the constitutively active PDGFR β K mutant isoform (D849V mutation in the kinase domain). Following Cre recombinase-mediated excision of the floxed-STOP cassette, expression of the constitutively active mutant PDGFR β leads to high basal kinase activity without the addition of ligand. These mutant mice may be useful in studying PDGFR signaling in multipotent progenitor mural cells (pericytes and vascular smooth muscle cells), as well as in cardiovascular and obesity-related disease.

Donating Investigator

Dr. Philippe Soriano, Mount Sinai School of Medicine

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GENETIC OVERVIEW

Genetic Background

Generation

Pdgfrb^{tm14(Pdgfrb)Sor}

Allele Type

Gene Symbol

Gene Name

Targeted (Conditional ready (e.g. floxed), Constitutively active, Inserted expressed sequence, No functional change)

Pdgfrb

platelet derived growth factor receptor, beta polypeptide

[VIEW GENETICS](#)

RESEARCH APPLICATIONS

Research Tools

Internal/Organ Research

Developmental Biology Research

Immunology, Inflammation and Autoimmunity Research

Hematological Research

Cardiovascular Research

Cancer Research

Cell Biology Research

[VIEW ALL RESEARCH APPLICATIONS](#)

BASE PRICE

Starting at:

\$2,854.50 Domestic price Cryo Recovery

[VIEW PRICE LIST](#)

Details

Detailed Description

The PDGFR $\beta^{(S)K}$ conditional knockin allele has the endogenous PDGFR β sequences replaced with a *loxP*-flanked PGKneo (*lox-stop-lox*) cassette upstream of the constitutively active PDGFR β K mutant isoform (D849V mutation in the kinase domain interferes with the inactive conformation of the ATP-binding pocket; leading to constitutive PDGFR β activity). Prior to Cre recombinase exposure, no expression of the constitutively active β K mutant isoform is observed, and the mutant allele functions as a knockout. Mice homozygous for the PDGFR $\beta^{(S)K}$ allele are neonatal lethal. Heterozygous PDGFR $\beta^{(S)K}$ mice are viable and fertile with no reported abnormalities. Following Cre recombinase-mediated excision of the floxed-STOP cassette, high basal kinase activity without the addition of ligand is observed in the *cre*-expressing tissues.

Of note, pan-deletion of the floxed-STOP cassette can be achieved by breeding PDGFR $\beta^{(S)K}$ conditional knockin mice with mice expressing Cre recombinase in early embryonic development (Meox2-Cre [Stock No. 003755], Sox2-Cre [Stock No. 004783], or Prm-Cre [Stock No. 003328]). In the resulting double mutant offspring, widespread expression of the constitutively active PDGFR β leads to normal embryonic development but eventual death by ~14 days of age. In these double mutant mice, constitutively active PDGFR β induces a battery of immune response genes in pericytes and mesenchymal cells, and also inhibits *in vitro* differentiation of white adipocytes.

When PDGFR $\beta^{(S)K}$ conditional knockin mice are bred to Sm22-Cre mice [Stock No. 004746], constitutively active PDGFR β drives cell proliferation and downregulates differentiation genes in aortic vascular smooth muscle tissues of the double mutant offspring. Importantly, the donating investigator reports they have not observed any consistent phenotypic differences between the Cre recombinase-activated phenotypes of PDGFR β K and PDGFR β J (see Stock No. 018434) mice, regardless of Cre recombinase tissue specificity.

Development

Expression Data

Control Suggestions

Selected References

Genetics

Pdgfrb^{tm14(Pdgfrb)Sor}

Disease/Phenotype

Disease Terms

Research Areas By Genotype

Mammalian Phenotype Terms by Genotype

References

Technical Support

Genotyping Protocols

Pyrosequencing: [** Pdgrfb*D849V](#)
Standard PCR: [Pdgrfb^{tm14}\(Pdgrfb\)Sor](#)

[Genotyping resources and troubleshooting](#)

Breeding Considerations

When maintaining a live colony, heterozygous mice may be bred to wildtype mice from the colony or with C57BL/6J inbred mice (Stock No. [000664](#)). Homozygous mice die shortly after birth.

[Additional Breeding and Husbandry Support](#)

Citation

When using the PDGFRB^{K1} mouse strain in a publication, please [cite the originating article\(s\)](#) and include JAX stock #018435 in your Materials and Methods section.

[Facility Barrier Level Descriptions](#)

Production of mice from cryopreserved embryos or sperm occurs in a maximum barrier room, [G200](#)

⊖ Pricing & Availability



Cryo Recovery

Typically mice are recovered in 10-14 weeks. Contact Customer Service to place an order or for more information.

Domestic International

Pricing effective for USA, Canada and Mexico shipping destinations

Cryorecovery - Domestic Pricing

SERVICE	GENOTYPE	PRICE
Cryo Recovery	Heterozygous or Wildtype for Pdgrfb<tm14(Pdgrfb)Sor>	\$2,854.50

We will fulfill your order by providing at least two carriers for each strain ordered. The total number, sex, and genotypes provided will vary, although typically 8 or more animals are provided. Please check genotypes which will be recovered. While the genotypes of all animals produced will be communicated to you prior to scheduling shipment, the genotypes of animals provided may not reflect the mating scheme and genotypes described in the strain description. Animals are typically ready to ship in 11-14 weeks. If a second recovery is required to produce the minimum number of animals, then delivery time would increase to approximately 25 weeks. If we fail to produce animals of the correct genotype, you will not be charged. We cannot guarantee the reproductive success of mice shipped to your facility. If the mice are lost after the first three days (post-arrival) or do not produce progeny at your facility, a new order and fee will be necessary.

Cryorecovery to establish a [Dedicated Supply](#) for greater quantities of mice. Mice recovered can be used to establish a dedicated colony to contractually supply you mice according to your requirements. Price by quotation.

Related Products and Services

Frozen Mouse Embryo	STOCK Pdgrfb<tm14(Pdgrfb)Sor>/J Frozen Embryo	\$2595.00
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Terms are granted by individual review and stated on the customer invoice(s) and account statement. These transactions are payable in U.S. currency within the granted terms. Payment for services, products, shipping containers, and shipping costs that are rendered are expected within the payment terms indicated on the invoice or stated by contract. Invoices and account balances in arrears of stated terms may result in The Jackson Laboratory pursuing collection activities including but not limited to outside agencies and court filings.

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