

B6N.129S6(Cg)-Krt5^{tm1.1(cre/ERT2)Blh} /J

Stock No: **029155** | K5-CreER^{T2} knock-in

 Congenic, Targeted Mutation

Live mice available in varying quantities. Ask Customer Service for details.

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generating conditional alleles for studying basal cells, cancer and epidermolysis bullosa.

Donating Investigator

Brigid LM Hogan, Duke University Medical Center

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GENETIC OVERVIEW

Genetic Background

Generation

?+pN2F5
(2019-03-01 00:00:00)

Krt5^{tm1.1(cre/ERT2)Blh}

Alele Type

Targeted (Recombinase-expressing, Inducible)

Gene Symbol

Krt5

Gene Name

keratin 5

VIEW GENETICS

RESEARCH APPLICATIONS

Cancer Research
Research Tools

VIEW ALL RESEARCH APPLICATIONS

BASE PRICE

Starting at:

\$255.00 Domestic price for female 4-week

333.51 Domestic price for breeder pair

V I E W P R I C E L I S T

Details

Detailed Description

The keratin 5 gene (*Krt5*) encodes cyokeratin-5 or K5, a type II cyokeratin specifically expressed in basal epithelial cells (including epidermis, salivary gland and digestive tract). K5 is a biomarker for several different types of cancer (including breast and lung).

The *Krt5*-CreERT2 knock-in allele has an IRES sequence and a tamoxifen-inducible Cre recombinase (CreER^{T2}) inserted in the 3' UTR of *Krt5*. As such, *Krt5*-CreERT2 mice have both endogenous gene and CreER^{T2} expression directed to basal epithelial cells by the endogenous promoter/enhancer elements of the keratin 5 locus. CreER^{T2} fusion gene activity is inducible; observed following tamoxifen administration. When *Krt5*-CreERT2 mice are bred with mice containing *loxP*-flanked sequences, tamoxifen-inducible Cre-mediated recombination will result in deletion of floxed sequences in the *Krt5*-expressing cells of the double mutant offspring.

Specifically, tamoxifen-inducible Cre recombinase activity recapitulates the endogenous *Krt5* expression pattern. Recombination efficiency is reported to be high in the basal layer of the epidermis, prostate and esophagus, but only 25% in the basal cells of the trachea (which may reflect the lower *Krt5* expression in this tissue). The donating investigator did not characterize if Cre recombinase is expressed prior to tamoxifen exposure. Heterozygotes are viable and fertile with no reported abnormalities. To date (May 2016), it has not been attempted to make this strain homozygous.

For example, when *Krt5*-CreERT2 mice are bred to have a *cre*-conditional knockout of suppressor of cytokine signals 3 (Socs3^{fllox}; Stock No. [010944](#)) and fluorescent *cre*-reporter (R26-LSL-EYFP; Stock No. [006148](#)), the resulting triple mutant mice allow tamoxifen-inducible deletion of Socs3 in basal cells and activation of YFP expression as a lineage tracer. Such animals are useful for studying negative feedback regulation / inhibition of the JAK/STAT3 pathway.

The Cre-ERT2 fusion protein consists of Cre recombinase fused to a triple mutant form of the human estrogen receptor which does not bind its natural ligand (17β-estradiol) at physiological concentrations but will bind the synthetic estrogen receptor ligands 4-hydroxytamoxifen (OHT or tamoxifen) and, with lesser sensitivity, ICI 182780. Restricted to the cytoplasm, Cre-ERT2 can only gain access to the nuclear compartment after exposure to tamoxifen. To counteract the mixed estrogen agonist effects of tamoxifen injections, which can result in late fetal abortions in pregnant mice, progesterone may be coadministered.

Development

Expression Data

Control Suggestions

Selected References

Genetics

+ [Krt5^{tm1.1\(cre/ERT2\)Blh}](#)

Disease/Phenotype

+ [Disease Terms](#)

+ [Research Areas By Phenotype](#)

+ [Mammalian Phenotype Terms by Genotype](#)

+ [References](#)

Technical Support

C O N T A C T T E C H N I C A L S U P P O R T

Genotyping Protocols

Separated PCR:[Krt5 Alternate3](#)

[Genotyping resources and troubleshooting](#)

Breeding Considerations

When maintaining a live colony, heterozygous mice may be bred together, to wildtype mice from the colony or to C57BL/6NJ inbred mice (Stock No. [005304](#)). To date (May 2016), it has not been attempted to make this strain homozygous.

[Additional Breeding and Husbandry Support](#)

Mating System

Wild-type x Heterozygote

Heterozygote x Wild-type

Citation

When using the K5-CreER^{T2} knock-in mouse strain in a publication, please [cite the originating article\(s\)](#) and include JAX stock #029155 in your Materials and Methods section.

Animal Health Reports

[Facility Barrier Level Descriptions](#)

 [AX18 \(Maximum\)](#)

➔ Pricing & Availability



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| LIVE MOUSE | | | |
|------------|--------|---|----------|
| AGE | SEX | GENOTYPE | PRICE |
| 4 weeks | Female | Heterozygous for Krt5 ^{tm1.1(cre/ERT2)Blh} | \$255.00 |
| | Male | Heterozygous for Krt5 ^{tm1.1(cre/ERT2)Blh} | \$255.00 |
| 4 weeks | Female | Wild-type for Krt5 ^{tm1.1(cre/ERT2)Blh} | \$78.51 |
| | Male | Wild-type for Krt5 ^{tm1.1(cre/ERT2)Blh} | \$78.51 |
| 5 weeks | Female | Heterozygous for Krt5 ^{tm1.1(cre/ERT2)Blh} | \$255.00 |
| | Male | Heterozygous for Krt5 ^{tm1.1(cre/ERT2)Blh} | \$255.00 |
| 5 weeks | Female | Wild-type for Krt5 ^{tm1.1(cre/ERT2)Blh} | \$78.51 |
| | Male | Wild-type for Krt5 ^{tm1.1(cre/ERT2)Blh} | \$78.51 |
| 6 weeks | Female | Heterozygous for Krt5 ^{tm1.1(cre/ERT2)Blh} | \$255.00 |
| | Male | Heterozygous for Krt5 ^{tm1.1(cre/ERT2)Blh} | \$255.00 |
| 6 weeks | Female | Wild-type for Krt5 ^{tm1.1(cre/ERT2)Blh} | \$78.51 |
| | Male | Wild-type for Krt5 ^{tm1.1(cre/ERT2)Blh} | \$78.51 |
| 7 weeks | Female | Heterozygous for Krt5 ^{tm1.1(cre/ERT2)Blh} | \$255.00 |
| | Male | Heterozygous for Krt5 ^{tm1.1(cre/ERT2)Blh} | \$255.00 |
| 7 weeks | Female | Wild-type for Krt5 ^{tm1.1(cre/ERT2)Blh} | \$78.51 |
| | Male | Wild-type for Krt5 ^{tm1.1(cre/ERT2)Blh} | \$78.51 |
| 8 weeks | Female | Heterozygous for Krt5 ^{tm1.1(cre/ERT2)Blh} | \$255.00 |
| | Male | Heterozygous for Krt5 ^{tm1.1(cre/ERT2)Blh} | \$255.00 |
| 8 weeks | Female | Wild-type for Krt5 ^{tm1.1(cre/ERT2)Blh} | \$78.51 |
| | Male | Wild-type for Krt5 ^{tm1.1(cre/ERT2)Blh} | \$78.51 |
| 9 weeks | Female | Heterozygous for Krt5 ^{tm1.1(cre/ERT2)Blh} | \$255.00 |
| | Male | Heterozygous for Krt5 ^{tm1.1(cre/ERT2)Blh} | \$255.00 |
| 9 weeks | Female | Wild-type for Krt5 ^{tm1.1(cre/ERT2)Blh} | \$78.51 |
| | Male | Wild-type for Krt5 ^{tm1.1(cre/ERT2)Blh} | \$78.51 |
| 10 weeks | Female | Heterozygous for Krt5 ^{tm1.1(cre/ERT2)Blh} | \$255.00 |

| | SEX | Genotype | Price |
|----------|--------|---|----------|
| 10 weeks | Female | Wild-type for Krt5 ^{tm1.1(cre/ERT2)Blh} | \$78.51 |
| | Male | Wild-type for Krt5 ^{tm1.1(cre/ERT2)Blh} | \$78.51 |
| 11 weeks | Female | Heterozygous for Krt5 ^{tm1.1(cre/ERT2)Blh} | \$255.00 |
| | Male | Heterozygous for Krt5 ^{tm1.1(cre/ERT2)Blh} | \$255.00 |
| 11 weeks | Female | Wild-type for Krt5 ^{tm1.1(cre/ERT2)Blh} | \$78.51 |
| | Male | Wild-type for Krt5 ^{tm1.1(cre/ERT2)Blh} | \$78.51 |
| 12 weeks | Female | Heterozygous for Krt5 ^{tm1.1(cre/ERT2)Blh} | \$255.00 |
| | Male | Heterozygous for Krt5 ^{tm1.1(cre/ERT2)Blh} | \$255.00 |
| 12 weeks | Female | Wild-type for Krt5 ^{tm1.1(cre/ERT2)Blh} | \$78.51 |
| | Male | Wild-type for Krt5 ^{tm1.1(cre/ERT2)Blh} | \$78.51 |

| BREEDER PAIR | | | PRICE |
|--------------|---|--|----------|
| SEX | GENOTYPE | | |
| Female | Heterozygous for Krt5 ^{tm1.1(cre/ERT2)Blh} | | \$333.51 |
| Male | Wild-type for Krt5 ^{tm1.1(cre/ERT2)Blh} | | |
| Female | Wild-type for Krt5 ^{tm1.1(cre/ERT2)Blh} | | \$333.51 |
| Male | Heterozygous for Krt5 ^{tm1.1(cre/ERT2)Blh} | | |

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|-------------------------------|--|-----------|
| Frozen Mouse Embryo | B6N.129S6(Cg)-Krt5<tm1.1(cre/ERT2)Blh>/J | \$2595.00 |

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