

B6.129S7(Cg)-*Pik3ca*^{tm1Jdo}/J

Stock No: 025929 | *Pik3ca* RBD

 Congenic, Targeted Mutation

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resistance to endogenous Ras oncogene-induced tumorigenesis.

Donating Investigator

Julian Downward, Francis Crick Institute

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GENETIC OVERVIEW

Genetic Background

Generation

Pik3ca^{tm1Jdo}

Alele Type

Gene Symbol

Gene Name

Targeted (Not Specified)

Pik3ca

phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit alpha

VIEW GENETICS

RESEARCH APPLICATIONS

Developmental Biology Research

Cardiovascular Research

Immunology, Inflammation and Autoimmunity Research

Cancer Research

VIEW ALL RESEARCH APPLICATIONS

BASE PRICE

Starting at:

\$2,854.50 Domestic price Cryo Recovery

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

Details

Detailed Description

Ras proteins signal through direct interaction with a number of effector enzymes, including type I phosphoinositide (PI) 3-kinases.

In this *Pik3ca* (phosphatidylinositol 3-kinase, catalytic, alpha polypeptide; also known as p110 α) mutant strain, two point mutations in the Ras binding domain (RBD) block interactions with the Ras oncogene. Threonine 208 was changed to aspartic acid (T208D), and lysine 227 was modified to alanine (K227A) in exon 3. The mutations in the RBD do not otherwise interfere with the basic enzymatic activity.

Cells from these mice show proliferative defects and selective disruption of signaling from growth factors. Mice display defective development of the lymphatic vasculature, resulting in perinatal appearance of chylous ascites (a milky-appearing peritoneal fluid that is rich in triglycerides). Importantly, the mice are highly resistant to endogenous Ras oncogene-induced tumorigenesis. Disruption of the interaction between RAS and PIK3CA within host tissue reduces tumor growth and tumor-induced angiogenesis, leading to improved survival of tumor-bearing mice, even when this interaction was intact in the transferred tumor. Furthermore, functional interaction of RAS with PIK3CA in host tissue is required for efficient establishment and growth of metastatic tumors.

Viability of homozygotes is significantly reduced (~2% from heterozygous crosses).

Development

Control Suggestions

Selected References

Genetics

Pik3ca^{tm1Jdo}

– 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

Sanger sequencing:[Pik3ca](#)

Probe:[Generic Cre Probe](#)

Standard PCR:[Generic Neo](#)

Probe:[Generic Neo](#)

[Genotyping resources and troubleshooting](#)

Breeding Considerations

Heterozygotes are viable and fertile. Most homozygotes die perinatally, exhibiting a milky appearance at birth.

[Additional Breeding and Husbandry Support](#)

Mating System

Heterozygote x Wild-type

Wild-type x Heterozygote

Citation

When using the [Pik3ca RBD](#) mouse strain in a publication, please [cite the originating article\(s\)](#) and include JAX stock #025929 in your Materials and Methods section.

Animal Health Reports

[Facility Barrier Level Descriptions](#)

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

🔍 Pricing & Availability



Cryo
Recovery

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Domestic | International

Pricing effective for USA, Canada and Mexico shipping destinations

CRYORECOVERY - DOMESTIC PRICING

| SERVICE/PRODUCT | DESCRIPTION | PRICE |
|-------------------------------|---|------------|
| Cryo Recovery | Heterozygous or wildtype for Pik3ca<tm1Jdo> | \$2,854.50 |

RELATED PRODUCTS AND SERVICES

| | | |
|-------------------------------------|---|-----------|
| Frozen Mouse Embryo | B6.129S7(Cg)-Pik3ca<tm1Jdo>/J Frozen Embryo | \$2595.00 |
|-------------------------------------|---|-----------|

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Q U E S T I O N S A B O U T T E R M S O F U S E

LICENSING INFORMATION

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- By Gene
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