

FVB.129S4(B6)-*Ptpn1*^{tm1Bbk}/Mmjax

MMRRC Stock No: 32242-JAX

 Congenic, Targeted Mutation

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volume, increased glucose utilization and enhanced glucose tolerance. This mutant mouse strain may be useful in studies of energy regulation, diet-induced obesity and glucose metabolism.

Donating Investigator

Benjamin Neel, NYU School of Medicine

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GENETIC OVERVIEW

Genetic Background

Generation

Ptpn1^{tm1Bbk}

Alele Type

Targeted (Null/Knockout)

Gene Symbol

Ptpn1

Gene Name

protein tyrosine phosphatase, non-receptor type 1

VIEW GENETICS

RESEARCH APPLICATIONS

Diabetes and Obesity Research

Metabolism Research

VIEW ALL RESEARCH APPLICATIONS

Details

Detailed Description

Mice that are homozygous for the targeted mutation are viable and fertile. Homozygous males exhibit decreased body weight on a standard chow diet; weight gain in females is comparable to controls. On a 55% fat diet, both males and females remain lean. Although adipocyte cell number is not decreased, adipocyte volume is significantly decreased. Basal metabolic rate and total energy expenditure are increased in male homozygotes on high fat diet. Additionally, male homozygous mice exhibit decreased leptin levels, increased insulin sensitivity as a result of increased glucose utilization in skeletal muscle and enhanced glucose tolerance.

Heterozygous males exhibit decreased body weight on a standard chow diet; however, on a 55% fat diet weight gain is similar to wild-type. Leptin levels are decreased in heterozygous males on both chow and high-fat diets.

This mutant mouse strain may be useful in studies of energy regulation, diet-induced obesity and glucose metabolism.

In an attempt to offer alleles on well-characterized or multiple genetic backgrounds, alleles are frequently moved to a genetic background different from that on which an allele was first characterized. It should be noted that the phenotype could vary from that originally described. We will modify the strain description if necessary as published results become available.

Development

Control Suggestions

Selected References

Genetics

Ptpn1^{tm1Bbk}

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

Standard PCR:[Ptpn1](#)

[Genotyping resources and troubleshooting](#)

Breeding Considerations

While maintaining a live colony, these mice are bred as homozygotes.

[Additional Breeding and Husbandry Support](#)

Citation

When using the FVB.129S4(B6)-*Ptpn1*^{tm1Bbk}/Mmjax mouse strain in a publication, please [cite the originating article\(s\)](#) and include MMRRC stock #32242 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

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The Jackson Laboratory has rigorous genetic quality control and mutant gene genotyping programs to ensure the genetic background of JAX® Mice strains as well as the genotypes of strains with identified molecular mutations. JAX® Mice strains are only made available to researchers after meeting our standards. However, the phenotype of each strain may not be fully characterized and/or captured in the strain data sheets. **Therefore, we cannot guarantee a strain's phenotype will meet all expectations.** To ensure that JAX® Mice will meet the needs of individual research projects or when requesting a strain that is new to your research, we suggest ordering and performing tests on a small number of mice to determine suitability for your particular project. We do not guarantee [breeding performance](#) and therefore suggest that investigators order more than one breeding pair to avoid delays in their research.

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LICENSING INFORMATION

Phone: 207-288-6470
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