SJL/J

Stock No: 000686 | SJL

Also Known As: Swiss Jim Lambert, SJL

SJL mice display a very high incidence of reticulum cell sarcomas resembling Hodgkin’s disease by approximately one year of age. This strain is also characterized by extreme aggression in males and its susceptibility to experimental autoimmune encephalomyelitis (EAE) for multiple sclerosis research. SJL/J mice develop a spontaneous myopathy resulting from a splice-site mutation in the Dysferlin gene resulting in decreased levels of dysferlin protein in SJL/J mice and making this strain a good model for limb girdle muscular dystrophy 2B. SJL mice, fed an atherogenic diet (1.25% cholesterol, 0.5% cholic acid and 15% fat), fail to develop atherosclerotic aortic lesions in contrast to several highly susceptible strains of mice. SJL are immunocompetent but have elevated levels of circulating T cells.

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GENETIC OVERVIEW

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RESEARCH APPLICATIONS
Cardiovascular Research
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Immunology, Inflammation and Autoimmunity Research
Mouse/Human Gene Homologs
Neurobiology Research

Details

Important Note
This strain is homozygous for the retinal degeneration allele Pde6<sup>rd1</sup>.

Detailed Description

SJL/J mice display a very high incidence of reticulum cell sarcomas resembling Hodgkin’s disease by approximately one year of age. Sarcomas first appear in the Peyer’s patches and mesenteric lymph nodes and later in the spleen, liver, thymus and other lymph nodes. Most of the tumors are mixed-cell types classified as type B reticulum cell neoplasms, but a few are type A histiocytomas. This strain is also characterized by extreme aggression in males and its susceptibility to experimental autoimmune encephalomyelitis (EAE) for multiple sclerosis research. SJL/J mice develop a spontaneous myopathy resulting from a splice-site mutation in the Dysferlin gene. This Dysferlin allele has been shown to result in decreased levels of dysferlin protein in SJL/J mice and makes this strain a good model for limb girdle muscular dystrophy 2B. This spontaneous myopathy is characterized by a progressive loss of muscle mass and strength corresponding with an increase in muscle pathology including muscle fibers with central nuclei, size variation, splitting, inflammatory infiltrate, necrosis, and eventual replacement of muscle fiber with fat. While muscle weakness can be detected as early as three weeks of age the greatest pathology occurs after six months of age. SJL/J mice have also been shown to have an increased rate of muscle regeneration after injury when compared to BALB/c mice. Due to a mutation in Cecam1 SJL/J mice are resistant to infection by certain strains of mouse hepatitis virus MHV-4.

SJL mice, fed an atherogenic diet (1.25% cholesterol, 0.5% cholic acid and 15% fat), fail to develop atherosclerotic aortic lesions in contrast to several highly susceptible strains of mice (e.g. C57BL/6J, Stock No. 000664; C57L/J, Stock No. 000668, C57BR/cdJ, Stock No. 000667, and SM/J, Stock No. 000667). SJL/J are also useful as a control strain for studying immune defects in NOD/ShiLtJ mice (Stock No. 001976), a model for type 1 diabetes (IDDM). Both NOD and SJL/J are derived from Swiss mice; SJL are immunocompetent but have elevated levels of circulating T cells.

Development

Selected References

Genetics

II2<sup>nt</sup>

Gpr84<sup>del</sup>
Rmcf
Ceacam1fltr
Disc1del
Mx1st
Ahr4
Cd53
Pde6bdt
Ogg1mo
Ogg1m2
Dys3m

Disease/Phenotype

Disease Terms

Research Areas By Genotype

Mammalian Phenotype Terms by Genotype

Phenotype Information

References

Technical Support

CONTACT TECHNICAL SUPPORT

Genotyping Protocols
Genotyping resources and troubleshooting
Inbred mouse strains are maintained through sibling (sister x brother) matings; no genotyping required.

Dietary Information
LabDiet® 5K52 formulation (6% fat)
Breeding Considerations

This strain is a good breeder.

Additional Breeding and Husbandry Support

Mating System
Sibling x Sibling

Appearance

albino
Related Genotype: Oca2b Tyr^c/Oca2b Tyr^c A/A

Citation

Animal Health Reports
When using the SJL mouse strain in a publication, please include JAX stock #000686 in your Materials and Methods section.

Facility Barrier Level Descriptions

- MP16 (Standard)
- MP13 (Maximum)
- RB04 (Maximum)

Related Strains

All

By Allele

By Gene

By Collection

All Related Strains
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