ALS/LtJ
Stock No: 003072
Inbred Strain

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

Overview

Also Known As: Alloxan Susceptibility
ALS/LtJ and ALR/LtJ (Stock No. 003070) inbred strains are useful for a wide range of studies including type 1 and type 2 diabetes, obesity, metabolism and toxicology research. Treatment of alloxan or streptozotocin causing pancreatic beta cell destruction, leads to severe hyperglycemia and hypoinsulinemia in ALS/LtJ mice. Alloxan-untreated ALS/Lt males exhibit impaired glucose tolerance when tested by intraperitoneal administration of glucose, and become hyperinsulinemic. ALS/LtJ mice contain genes predisposing to both experimentally-induced type 1 and spontaneously-developing type 2 diabetes mellitus. ALS/Lt mice exhibit significantly lower antioxidant defenses than do ALR/Lt. ALS/Lt is a useful control strain for comparing inbred strain susceptibility to free radical-mediated damage.

GENETIC OVERVIEW

Genetic Background
Generation

RESEARCH APPLICATIONS

Diabetes and Obesity Research
Sensorineural Research
Neurobiology Research
Metabolism Research
Research Tools

BASE PRICE

Starting at:
Details

Important Note
This strain is homozygous for \textit{Cdh23}^{ahl}, the age related hearing loss 1 mutation, which on this background results in progressive hearing loss with onset prior to three months of age and for \textit{Gnat2}^{cpfl3}, cone photoreceptor function loss 3, which affects bright light (photopic) vision.

Detailed Description
ALS/LtJ and ALR/LtJ (Stock No. 003070) inbred strains are of interest to investigators across a wide range of scientific disciplines including type 1 and type 2 diabetes, obesity, metabolism and toxicology research. Treatment of alloxan or streptozotocin causing pancreatic beta cell destruction, leads to severe hyperglycemia and hypoinsulinemia in ALS/LtJ mice. ALR/LtJ mice are resistant to these toxins. By 34 weeks of age, both untreated ALS/Lt and ALR/Lt males fed a 6% fat-containing chow diet attain a mean body weight of around 50 grams. Genome wide scan comparison shows that ALS/LtJ mice are more closely related to NON/ShiLtJ mice (they share the \textit{H2}^{261} haplotype) than to NOD/ShiLtJ. Like two other ICR-derived inbred strains selected in Japan (NON and NSY), alloxan-untreated ALS/Lt males exhibit impaired glucose tolerance when tested by intraperitoneal administration of glucose. However, unlike NON/ShiLt males, which exhibit impaired glucose tolerance in the presence of low plasma insulin concentrations, alloxan-untreated ALS/LtJ males become hyperinsulinemic by 10 weeks of age and maintain hyperinsulinemia as they age. Four untreated males and three females in a research colony have spontaneously developed type 2 diabetes between nine to 32 weeks of age (EH Leiter, unpublished observations). ALS/LtJ mice thus contain genes predisposing to both experimentally-induced type 1 and spontaneously-developing type 2 diabetes mellitus. Since ALS/LtJ mice exhibit significantly lower antioxidant defenses than do ALR/Lt, yet the two strains are closely related, ALS/Lt is a useful control strain for comparing inbred strain susceptibility to free radical-mediated damage.

Development

Selected References

Genetics

- \textit{Cdh23}^{ahl}
- \textit{Gnat2}^{cpfl3}
- \textit{mt-Tr}^{m1}

Disease/Phenotype
Genotyping Protocols
Genotyping resources and troubleshooting

Appearance
albino
Related Genotype: a/a Tyr^c / Tyr^c

Citation
When using the ALS/LtJ mouse strain in a publication, please include JAX stock #003072 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

Typically mice are recovered in 10-14 weeks. Contact Customer Service to place an order or for more information.
Cryo Recovery
Inbred, 1 pair minimum will be supplied
$2,854.50

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