Also Known As: RCS-10

NONcNZO10/LtJ is a recombinant congenic strain developed at The Jackson Laboratory to model human obesity-induced Type 2 diabetes and Metabolic Syndrome. Type 2 diabetes in males of this strain results from polygenic interactions producing a moderate
obesity rather than the massive obesity elicited by mutations in the leptin/leptin receptor axis. Unlike mice with monogenic obesity syndromes, NONcNZO10/LJ males do not exhibit hypercorticism, are not hyperphagic, and show no obvious thermoregulatory defects. Male mice weaned onto LabDiet® 5K20 (a chow diet containing 10-11% fat by weight) develop visceral obesity, maturity-onset hyperglycemia, dyslipidemia, moderate liver steatosis, and pancreatic islet atrophy.

Donating Investigator
Dr. Edward Leiter, The Jackson Laboratory

GENETIC OVERVIEW

Genetic Background
002423 NON/ShiLtJ

Generation
N1F17p+F14
(2019-07-16 00:00:00)

RESEARCH APPLICATIONS

Diabetes and Obesity Research

BASE PRICE
Starting at:
$278.00 Domestic price for female

DETAILS

Onset of hyperglycemia occurs between 10-12 on a 10-11% fat (wt/wt) chow diet with greater than 85% diabetic by 18 weeks. Males exhibit increased serum triglycerides, moderate to severe liver steatosis and pancreatic islet atrophy similar to NZO/HIlLt males. Serum insulin and leptin values are significantly lower than in NZO/HIlLt, and are only moderately elevated above those recorded in NON/ShiLtJ males. Unlike the very obese NZO/HIlLt mice, NONcNZO10/LJ mice do not exhibit hyperphagia or hypercorticism and are much easier to breed. Although NONcNZO10/LJ males develop only a moderate level of obesity compared to NZO/HIlLt males, the interaction with known diabetogenic QTL from the NON/ShiLtJ strain produce an earlier onset and higher prevalence of chronic hyperglycemia than observed in NZO/HIlLt males.

NONcNZO10/LJ is differentially sensitive to adverse hepatic side effects of thiazolidinediones and may be useful for pharmacogenetic analysis. This strain represents a model of polygenic obesity and obesity-induced diabetes (diabesity).
Note that the diabetes phenotype originally characterized by Dr. Leiter in his research vivarium was performed with mice fed a 6% wt/wt diet. After the strain was rederived it was experimentally determined that it is essential to feed the mice a higher fat diet to force penetrance of the diabetes phenotype.

Genetics

Currently there are no related genes or alleles for this strain.

Disease/Phenotype

Disease Terms

Research Areas By Genotype

Mammalian Phenotype Terms by Genotype

Phenotype Information

References

Technical Support

Genotyping Protocols
Genotyping resources and troubleshooting

Dietary Information
New Diet as of March 2015: Lab Diet® 5K0Q (6% fat)

Breeding Considerations
As of March 2015, mice in breeding are maintained on LabDiet® 5K0Q (6% fat).

Offspring are weaned onto and maintained on LabDiet® 5K20 [minimum 10% fat].

Additional Breeding and Husbandry Support

Mating System
Sibling x Sibling

Appearance
albino

Related Genotype: A/A Tyr+/Tyr
Citation
When using the NONcNZO10/LtJ mouse strain in a publication, please cite the originating article(s) and include JAX stock #004456 in your Materials and Methods section.

AX18 (Maximum)

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

Available

Domestic

Pricing for USA, Canada and Mexico shipping destinations

Live Mouse

<table>
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<th>AGE</th>
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<td>$278.00</td>
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<tr>
<td></td>
<td>Male</td>
<td>Not Applicable</td>
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Terms Of Use

Addition Use Restrictions Apply

Notice regarding NONcNZO10/LtJ Female
Notice regarding NONcNZO10/LtJ Male

Licensing Information
Phone: 207-288-6470
Email: TechTran@jax.org

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Related Strains

All

By Allele

By Gene

By Collection