NOD/ShiLtJ-Tg(Ins1-EGFP/GH1)14Hara/HaraJ

Stock No: 005282 | NOD.MIP-GFP

Transgenic

PLACE ORDER

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

Also Known As: NOD.MIP-GFP
These MIP-GFP mice express a transgene containing a fusion gene joining enhanced green fluorescent protein to a fragment of the human growth hormone 1. Homozygotes develop diabetes by 9 weeks of age.

Donating Investigator
Manami Hara, University of Chicago

GENETIC OVERVIEW

<table>
<thead>
<tr>
<th>Genetic Background</th>
<th>Generation</th>
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<tbody>
<tr>
<td>Tg(Ins1-EGFP/GH1)14Hara</td>
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Allele Type
Transgenic (Reporter)

RESEARCH APPLICATIONS

Research Tools
Diabetes and Obesity Research
Immunology, Inflammation and Autoimmunity Research

BASE PRICE
Starting at:
$2,854.50 Domestic price Cryo Recovery

Details
Important Note

The expression of fluorochromes in the beta cells of hemizygous Ins1-EGFP transgenic mice elicit pathophysiological changes which may complicate interpretations if islets from this model are used in transplantation studies. These pathophysiological changes alter the normal pathogenic progression in the NOD mouse model of autoimmune diabetes. Preliminary studies indicate that hemizygous mice are not suitable as recipients of diabetogenic T cells.

Detailed Description

Donating investigator reports transgenic mice develop normally and behave similarly to controls with respect to glucose tolerance and and pancreatic insulin content. Histology confirms transgenic mice have normal islet architecture with coexpression of insulin and GFP. The enhanced GFP reporter allows the beta cells to be easily identified and purified for further studies.

Studies completed at The Jackson Laboratory indicate there is strong non-mosaic expression of green fluorescent protein in NOD/LtJ-Tg(Ins1-EGFP/GH1)14Hara/HaraJ islets. 100% of homozygous Ins1-EGFP transgenic males and females, identified by qPCR, become diabetic by 9 weeks of age. Pancreatic histopathology of homozygous mice shows beta cell loss without insulitis. Hemizygous Ins1-EGFP mice are viable and are used for breeding. A 30-week incidence study comparing NOD/LtJ controls with mice hemizygous for the Ins1-EGFP transgene shows severely depressed diabetes incidence in these hemizygotes, with males atypically at greater risk than females. Glucose tolerance in prediabetic, Ins1-EGFP transgenic hemizygous 8-week-old males is selectively impaired compared to wild type controls. Although these 8-week-old Ins1-EGFP transgenic and wild type males did not differ in plasma insulin content; a significant decline was noted in hemizygous Ins1-EGFP transgenic males compared to normoglycemic wildtype males when sampled at 30 wk. Adoptive transfer of highly diabetogenic CTL (AIC TCRTg Rag) CD8+ T cells produced diabetes within 8 days post-injection into NOD/Lt females, but failed to produce any diabetes or even home to islets weeks after injection into hemizygous females. Pancreatic histopathology of 31 week old, non-diabetic, hemizygous Ins1-EGFP transgenic males and females indicate peri and intra islet fibrosis, peri-insulitis and depleted beta cell granulation in 70% of the animals, while only 30% of the mice have intra islet insulin.

This model provides a valuable tool for studying beta-cell biology, including identification of progenitor cells.

Development

Expression Data

Control Suggestions

Selected References

Genetics

Tg(Ins1-EGFP/GH1)14Hara

Disease/Phenotype

Disease Terms

Research Areas By Genotype

Mammalian Phenotype Terms by Genotype

References

Technical Support
Genotyping Protocols
Probe: Fluorescent Proteins (Generic GFP)
Standard PCR: Fluorescent Proteins (Generic GFP)
Genotyping resources and troubleshooting

Appearance
albino, pink eyed
Related Genotype: A/A Tyr<sup>c</sup>/Tyr<sup>c</sup>

Citation
When using the NRG-MIP GFP mouse strain in a publication, please cite the originating article(s) and include JAX stock #005282 in your Materials and Methods section.
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.

<table>
<thead>
<tr>
<th>SERVICE</th>
<th>GENOTYPE</th>
<th>PRICE</th>
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<tbody>
<tr>
<td>Cryo Recovery</td>
<td>Hemizygous or Non carrier for Tg(Ins1-EGFP/GH1)4Hara</td>
<td>$2,854.50</td>
</tr>
</tbody>
</table>

We will fulfill your order by providing at least two carriers for each strain ordered. The total number, sex, and genotypes provided will vary, although typically 5 or more animals are provided. Please check genotypes which will be recovered. While the genotypes of all animals produced will be communicated to you prior to scheduling shipment, the genotypes of animals provided may not reflect the mating scheme and genotypes described in the strain description. Animals are typically ready to ship in 11-14 weeks. If a second recovery is required to produce the minimum number of animals, then delivery time would increase to approximately 25 weeks. If we fail to produce animals of the correct genotype, you will not be charged. We cannot guarantee the reproductive success of mice shipped to your facility. If the mice are lost after the first three days (post-arrival) or do not produce progeny at your facility, a new order and fee will be necessary.

Cryorecovery to establish a Dedicated Supply for greater quantities of mice. Mice recovered can be used to establish a dedicated colony to contractually supply you mice according to your requirements. Price by quotation.

Related Products and Services

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<th>SERVICE</th>
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<tr>
<td>Frozen Mouse Embryo</td>
<td>$2,595.00 per straw or vial</td>
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All

By Allele

By Gene

By Collection

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TOMORROW'S CURES

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