

My Account

Login
Create Account

Resources

View All (813)
Adenoviruses (137)
Antibodies (175)
Bioimages (67)
Genomics Studies (145)
mESC Lines (68)
Mouse Strains (120)
Miscellaneous (46)
Protocols (55)
Research Data (4)
Resource Tags (389)
Visualization (9)

Research & Cores

Core Facilities (5)
Research Highlights (5)
Research Networks
Research Objectives

Information

About the BCBC
BCBC Events
Branding & Logos
Career Opportunities
Health
NIH hESC Registry
Policies & Guidelines
Member Publications
Research Programs
Research Investigators
Member Directory
Tutorials

NOD-Rag-Perforin Akita - Mouse Strain RES211**Mouse Information**

Common Name:	NOD-Rag-Perforin Akita
MGI Official Name:	NOD.Cg-Rag1 ^{tm1Mor} Ins2 ^{Akita} Prf1 ^{tm1Sdz} /Sz
Description:	The NOD-Rag1 ^{null} Prf1 ^{null} Ins2 ^{Akita} mouse is the first immunodeficient, spontaneously hyperglycemic mouse strain described that is based on the Ins2 ^{Akita} mutation. This strain is suitable as hosts for human islet and human beta stem and progenitor cell transplantation in the absence of the need for pharmacological induction of diabetes. This strain of mice also has low levels of innate immunity and can be engrafted with a human immune system for the study of human islet allograft rejection.
Categories:	HUMANE


Genetic Alterations

1) Targeted Mutagenesis					
Type of Allele	Global Null				
Targeted Gene	recombination activating gene 1 (Rag1 - NCBI GeneID:19373)				
Targeted Allele	<i>Not provided</i> (MGI:97848)				
Description of Targeting Vector	<i>Not provided</i>				
Targeting Vector Genbank File	<i>Not provided</i>				
Citations	<table border="1"> <thead> <tr> <th>PubMedID</th> <th>Citation</th> </tr> </thead> <tbody> <tr> <td>18785974</td> <td>Non-obese diabetic-recombination activating gene-1 (NOD-Rag1 null) interleukin (IL)-2 receptor common gamma chain (IL2r gamma null) null mice: a radioresistant model for human lymphohaematopoietic engraftment. (2008) <i>Clin Exp Immunol</i> 154: 270-84 (Added 2009-04-21 09:46:49)</td> </tr> </tbody> </table>	PubMedID	Citation	18785974	Non-obese diabetic-recombination activating gene-1 (NOD-Rag1 null) interleukin (IL)-2 receptor common gamma chain (IL2r gamma null) null mice: a radioresistant model for human lymphohaematopoietic engraftment. (2008) <i>Clin Exp Immunol</i> 154 : 270-84 (Added 2009-04-21 09:46:49)
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2) Targeted Mutagenesis					
Type of Allele	Global Null				
Targeted Gene	perforin 1 (pore forming protein) (Prf1 - NCBI GeneID:18646)				
Targeted Allele	<i>Not provided</i> (Prf1 ^{tm1Sdz} - MGI:97551)				
Description of Targeting Vector	<i>Not provided</i>				
Targeting Vector Genbank File	<i>Not provided</i>				
Citations	<table border="1"> <thead> <tr> <th>PubMedID</th> <th>Citation</th> </tr> </thead> <tbody> <tr> <td>18563383</td> <td>A new immunodeficient hyperglycaemic mouse model based on the Ins2Akita mutation for analyses of human islet and beta stem and progenitor cell function. (2008) <i>Diabetologia</i> 51: 1449-56 (Added 2009-04-20 17:03:25)</td> </tr> </tbody> </table>	PubMedID	Citation	18563383	A new immunodeficient hyperglycaemic mouse model based on the Ins2Akita mutation for analyses of human islet and beta stem and progenitor cell function. (2008) <i>Diabetologia</i> 51 : 1449-56 (Added 2009-04-20 17:03:25)
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Strain Information

Strain Type:	Congenic Strain
Chimera/Founder Genetic Background:	Not provided

Access Status

 This resource is publicly viewable.

Request this Resource

 Request from a repository


Primary contributor: [Shultz Lab](#)

Co-contributed by:

- [Greiner Lab](#)
- [Herrera Lab](#)

Resource Tags

mouse, mouse strain, NOD, NOD-Rag-Perforin Akita, Perforin, RAG

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Resource History & Actions

Approved on Dec 21, 2007

Last modified on Dec 21, 2007

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Related resources**BCBC**

No matching resources

Other Consortia

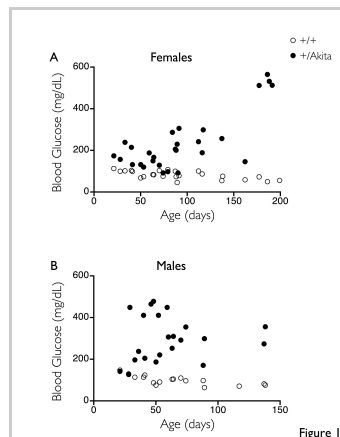
No matching resources

Data courtesy of [dkCOIN](#). Only public resources are displayed.

Current Genetic Background: Not provided (date recorded: Not provided)**Strain Description:** Not provided

Associated Images

Image 1

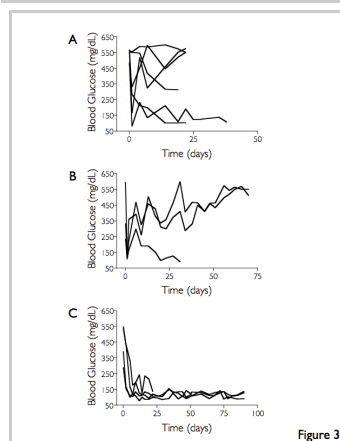
**Description:**

Spontaneous development of hyperglycemia in NOD-Rag1nullPrf1nullIns2+/Akita mice. Groups of mice were analysed for the development of hyperglycemia over time and stratified by sex. Additionally, littermates of each sex were typed at Ins2 to determine mice that were homozygous wild-type (white circles) or harboured a single Akita allele (black circles). (hyperglycemia)

Reference:

18563383

Image 2

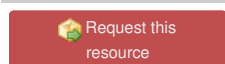
**Description:**

Reversal of diabetes in NOD-Rag1null Prf1 null Ins2+/Akita mice following human islet transplantation. Hyperglycemic male mice were randomised into three groups and received either 2,000 (a, n=6), 3,000 (b, n=3), or 4,000 (c, n=4) IEQ of human islets into the renal subcapsular space. Blood glucose levels in individual mice at each human islet dose are shown over the follow-up period. (islet transplantation)

Reference:

18563383

Repositories

Herrera Lab**Stock #:** Not provided**Availability Notes:** Not provided

Contact Information

Preferred Contact

Name	Leonard Shultz
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Associated Publications

No publications associated

Comments

There are no comments for this entry.

