NOD.Cg-Prkdc<sup>scid</sup>/SzJ

Stock No: 023848 | NSG-(K<sup>bd</sup> b<sup>null</sup>)

Available

PLACE ORDER

Live mice available in varying quantities. Ask Customer Service for details.
Overview

Also Known As: NSG-(K^b D^b)^null

NSG-(K^b D^b)^null mice are NOD.scid.Ii2R^null ("NSG") animals with knockout alleles of the MHC class I genes (K^b null and D^b null). Homozygous NSG-(K^b D^b)^null mice lack murine major histocompatibility complex (MHC) class I and exhibit reduced xenogeneic graft-versus-host disease response (xeno-GVHD) following human peripheral blood mononuclear cells (PBMC) engraftment. These mice may be useful for transplantation studies to investigate the role of MHC class I and central and peripheral tolerance in the xeno-GVHD.

Donating Investigator

Dr. Leonard D. Shultz, The Jackson Laboratory
**Allele Type**

**Gene Symbol**

**Gene Name**

| Targeted (Null/Knockout) | H2-D1 | histocompatibility 2, D region locus 1 |

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**VIEW GENETICS**

**RESEARCH APPLICATIONS**

Immunology, Inflammation and Autoimmunity Research  
Research Tools  
Internal/Organ Research  
Virology Research  
Cancer Research  
Cardiovascular Research  
Hematological Research  
Developmental Biology Research

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**VIEW ALL RESEARCH APPLICATIONS**

**BASE PRICE**

Starting at:

- $232.18 Domestic price for male 4-week
- $2,854.50 Domestic price Cryo Recovery

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**VIEW PRICE LIST**

**Details**

**Detailed Description**

NSG-(K\(^b\)\(^b\)\(^b\)\(^null\) mice are NOD.scid.II2R\(^c\)\(^null\) ("NSG"; Stock No. 005557) animals also harboring knockout alleles of the MHC class I genes (K\(^b\)\(^null\) and D\(^b\)\(^null\)). NSG-(K\(^b\)\(^D\)\(^b\)\(^null\) females homozygous for all three mutations, and males homozygous for scid, homozygous for K\(^b\)\(^null\), homozygous for D\(^b\)\(^null\) and hemizygous for the X-linked II2R\(^c\)\(^null\) may be collectively referred to as homozygous NSG-(K\(^b\)\(^D\)\(^b\)\(^null\) mice.

Although viable and fertile, homozygous NSG-(K\(^b\)\(^D\)\(^b\)\(^null\) mice are immunodeficient: they have no mature T cells or B cells, lack functional natural killer (NK) cells, are deficient in cytokine signaling, and do not express murine major histocompatibility complex (MHC) class I molecules (lack classical MHC class I-region associated (la) heavy chains).

While both homozygous NSG and homozygous NSG-(K\(^b\)\(^D\)\(^b\)\(^null\) mice readily allow engraftment of human peripheral blood mononuclear cells (PBMC), the MHC class I-deficiency of homozygous NSG-(K\(^b\)\(^D\)\(^b\)\(^null\) mice attenuates development of the xenogeneic graft-versus-host disease (xeno-GVHD) observed for homozygous NSG animals.

xeno-GVHD is mediated by donor T cell recognition of murine MHC classes I and II. The role of central and peripheral tolerance in development of GVHD was examined in NSG, MHC class I-deficient NSG-(K\(^b\)\(^D\)\(^b\)\(^null\)) and MHC class II-deficient NSG-Ab\(^o\) (see Stock No. 021885). Following an engraftment protocol using CD34+ hematopoietic stem cells (HSC) from human fetal liver, the human CD45+ cell chimerism was comparable in all three strains. However, the survival of NSG-(K\(^b\)\(^D\)\(^b\)\(^null\)) was significantly reduced.
Similar to other immunodeficient strains, maintaining homozygous NSG-(K\(^b\)D\(^b\)\(~null\)) mice in high health status (specific pathogen-free) vivaria promotes overall colony health. If homozygous NSG-(K\(^b\)D\(^b\)\(~null\)) animals are maintained in low health barrier rooms, the use of medicated water (e.g., sulfatrim/trimethoprim-sulfa or enrofloxacin/Baytril) is suggested to increase overall colony health.

View our Resources for the NSG mouse model, including discussion forum, immunodeficient model comparison, and categorized, up-to-date references.
Genotyping Protocols

Standard PCR: H2-D1<sup>tm1Bpe</sup>tm1Wjl-PROBE
End Point Analysis: Prkdc<sup>scid</sup>
Standard PCR: Ii2rg<sup>tm1Wjl</sup>
Standard PCR: H2-K1<sup>tm1Bpe</sup>
Standard PCR: H2-D1<sup>tm1Bpe</sup>
Probe: H2-K1<sup>tm1Bpe</sup> Probe

Genotyping resources and troubleshooting

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

Breeding Considerations
NSG-(K<sup>b</sup>D<sup>b</sup>) females homozygous for all three mutations, and males homozygous for scid, homozygous for K<sup>b</sup> null, homozygous for D<sup>b</sup> null and hemizygous for the X-linked Il2Rγc<sup>null</sup> may be collectively referred to as homozygous NSG-(K<sup>b</sup>D<sup>b</sup>) mice. When maintaining a live colony, homozygous NSG-(K<sup>b</sup>D<sup>b</sup>)<sup>null</sup> females may be bred with homozygous NSG-(K<sup>b</sup>D<sup>b</sup>)<sup>null</sup> males. Homozygous NSG-(K<sup>b</sup>D<sup>b</sup>)<sup>null</sup> mice are immunodeficient. As such, and similar to other immunodeficient strains, maintenance in high health status (specific pathogen-free) vivaria promotes overall colony health. If homozygous NSG-(K<sup>b</sup>D<sup>b</sup>)<sup>null</sup> animals are maintained in low health barrier rooms, the use of medicated water (e.g., sulfatrim/trimethoprim-sulfa or enrofloxacin/Baytril) is suggested to increase overall colony health.

Additional Breeding and Husbandry Support

Mating System
See "Breeding Considerations"

Appearance
Albino
Related Genotype: A/A Tyr<sup>r</sup>/Tyr<sup>r</sup>

Citation
When using the NSG-(K<sup>b</sup>D<sup>b</sup>)<sup>null</sup> mouse strain in a publication, please cite the originating article(s) and include JAX stock #023848 in your Materials and Methods section.

Animal Health Reports

Pricing & Availability

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

Available

Domestic
International

Pricing effective for USA, Canada and Mexico shipping destinations

Domestic Pricing for
Commercial & For-Profit
Not-For-Profit & Academic

Live Mouse

<table>
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<tr>
<th>AGE</th>
<th>SEX</th>
<th>GENOTYPE</th>
<th>PRICE</th>
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<tbody>
<tr>
<td>4 weeks</td>
<td>Female</td>
<td>Homozygous for Prkdc&lt;sup&gt;scid&lt;/sup&gt; tm1Wjl, Homozygous for H2-K1&lt;sup&gt;tm1Bpe&lt;/sup&gt;, Homozygous for H2-D1&lt;sup&gt;tm1Bpe&lt;/sup&gt;</td>
<td>$274.05</td>
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<tr>
<td>4 weeks</td>
<td>Male</td>
<td>Homozygous for Prkdc&lt;sup&gt;scid&lt;/sup&gt; tm1Wjl, Homozygous for H2-K1&lt;sup&gt;tm1Bpe&lt;/sup&gt;, Homozygous for H2-D1&lt;sup&gt;tm1Bpe&lt;/sup&gt;</td>
<td>$232.18</td>
</tr>
<tr>
<td>5 weeks</td>
<td>Female</td>
<td>Homozygous for Prkdc&lt;sup&gt;scid&lt;/sup&gt; tm1Wjl, Homozygous for H2-K1&lt;sup&gt;tm1Bpe&lt;/sup&gt;, Homozygous for H2-D1&lt;sup&gt;tm1Bpe&lt;/sup&gt;</td>
<td>$274.05</td>
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<td>SERVICE</td>
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<td>CryoRecovery</td>
<td>Homozygous for Prkdc&lt;scid&gt;, Heterozygous for H2-K1&lt;tm1Bpe&gt;, Heterozygous or wildtype for H2-D1&lt;tm1Bpe&gt;, X linked Homozygous females and wildtype males, 1 pair minimum</td>
<td>$2,854.50</td>
<td></td>
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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 8 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 | Frozen Mouse Embryo | NOD.Cg-Prkdc<scid> H2-K1<tm1Bpe> H2-D1<tm1Bpe> Il2rg<tm1Wjl> | $2595.00 |

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