NOD.Cg-Prkdcscid H2-Ab1tm1Doi Il2rgtm1Wjl/SzJ

Stock No: 021885 | NSG-Ab°

Congenic Major Histocompatibility Congenic Spontaneous Mutation Targeted Mutation

REPOSITORY LIVE

PLACE ORDER

3–6 week average lead time depending on quantity and age requests are not accepted

Also Known As: NSG-Ab°, NOD.Cg-Prkdcsclid H2-Ab1tm1Gru Il2rgtm1Wjl/SzJ

NSG-Ab° mice are NOD.scid.II2R c°null" ("NSG") animals with the H2-Ab1 knock-out allele (Ab°). Homozygous NSG-Ab° mice 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 II. These mice may be useful for targeting human CD4+ T cells in transplantation studies, and to investigate the role of MHC class II in the CD4-mediated xenogeneic graft-versus-host disease response (xeno-GVHD).

Donating Investigator
Dr. Leonard D. Shultz, The Jackson Laboratory

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GENETIC OVERVIEW

<table>
<thead>
<tr>
<th>Genetic Background</th>
<th>Generation</th>
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<tbody>
<tr>
<td>?F19 (2018-07-22 00:00:00)</td>
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H2-Ab1tm1Doi

<table>
<thead>
<tr>
<th>Allele Type</th>
<th>Gene Symbol</th>
<th>Gene Name</th>
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</thead>
<tbody>
<tr>
<td>Targeted (Null/Knockout)</td>
<td>H2-Ab1</td>
<td>histocompatibility 2, class II antigen A, beta 1</td>
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Prkdcscid

<table>
<thead>
<tr>
<th>Allele Type</th>
<th>Gene Symbol</th>
<th>Gene Name</th>
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</thead>
<tbody>
<tr>
<td>Spontaneous</td>
<td>Prkdcs</td>
<td>protein kinase, DNA activated, catalytic polypeptide</td>
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</table>

Il2rgtm1Wjl

<table>
<thead>
<tr>
<th>Allele Type</th>
<th>Gene Symbol</th>
<th>Gene Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Targeted (Null/Knockout)</td>
<td>Il2rg</td>
<td>interleukin 2 receptor, gamma chain</td>
</tr>
</tbody>
</table>

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

BASE PRICE
Starting at:

$270.48 Domestic price for male

Details

Detailed Description
NSG-Ab\(^0\) mice are NOD.scid.II2R c\(^{null}\) ("NSG"; Stock No. 005557) animals also harboring the H2-Ab1 knock-out allele (Ab\(^0\)). NSG-Ab\(^0\) females homozygous for all three mutations, and males homozygous for scid, homozygous for Ab\(^0\) and hemizygous for the X-linked II2R c\(^{null}\) may be collectively referred to as homozygous NSG-Ab\(^0\) mice. Although viable and fertile, homozygous NSG-Ab\(^0\) 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 II (lack cell surface expression of both class II-A and class II-E MHC proteins). While both homozygous NSG and homozygous NSG-Ab\(^0\) mice readily allow engraftment of purified human CD4\(^+\) T cells (fractionated from human peripheral blood mononuclear cells [PBMC]), the MHC class II-deficiency of homozygous NSG-Ab\(^0\) mice prevents development of the xenogeneic graft-versus-host disease (xeno-GVHD) observed for homozygous NSG animals.

Similar to other immunodeficient strains, maintaining homozygous NSG-Ab\(^0\) mice in high health status (specific pathogen-free) vivaria promotes overall colony health. If homozygous NSG-Ab\(^0\) 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.

Development

Control Suggestions

Selected References

Genetics
Genotyping Protocols
Standard PCR: H2-Ab1<sup>tm1Doi</sup>-Alternate 1
End Point Analysis: Prkdc<sup>scid</sup> End Point
Probe: Il2rg<sup>tmWjl</sup>-PROBE
Separated PCR: H2-Ab1<sup>tm1Gru</sup> alternate2
MELT: Tg(HLA-DRB1) Alternate 1
Genotyping resources and troubleshooting

Dietary Information
LabDiet<sup>®</sup> 5K52 formulation (6% fat)

Breeding Considerations
NSG-Ab<sup>+</sup> females homozygous for all three mutations, and males homozygous for scid (Prkdc<sup>scid</sup>), homozygous for Ab<sup>+</sup> (H2-Ab1<sup>tm1Doi</sup>) and hemizygous for the X-linked Il2rg<sup>cnull</sup> (Il2rg<sup>tmWjl</sup>) may be collectively referred to as homozygous NSG-Ab<sup>+</sup> mice. When maintaining a live colony, homozygous NSG-Ab<sup>+</sup> females may be bred with homozygous NSG-Ab<sup>+</sup> males.
Homozygous NSG-Ab<sup>+</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-Ab<sup>+</sup> animals are maintained in low health barrier rooms, the use of medicated water (e.g., sulfadimethoxine or enrofloxacin/Baytril) is suggested to increase overall colony health. Also see additional NSG housing information.
Additional Breeding and Husbandry Support

Citation
When using the NSG-Ab<sup>+</sup> mouse strain in a publication, please cite the originating article(s) and include JAX stock #021885 in your Materials and Methods section.
Facility Barrier Level Descriptions

AX12 (Maximum)
Pricing & Availability

3–6 week average lead time depending on quantity and age requests are not accepted

### Domestic Pricing

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

<table>
<thead>
<tr>
<th>Live Mouse</th>
<th>SEX</th>
<th>GENOTYPE</th>
<th>PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approx 4-8 weeks</td>
<td>Female</td>
<td>Homozygous for Prkdc&lt;sup&gt;scid&lt;/sup&gt;, Homozygous for H2-Ab1&lt;sup&gt;tm1Do1&lt;/sup&gt;, Homozygous for Il2rg&lt;sup&gt;tm1Wij&lt;/sup&gt;</td>
<td>$311.43</td>
</tr>
<tr>
<td>Approx 4-8 weeks</td>
<td>Male</td>
<td>Homozygous for Prkdc&lt;sup&gt;scid&lt;/sup&gt;, Homozygous for H2-Ab1&lt;sup&gt;tm1Do1&lt;/sup&gt;, Hemizygous for Il2rg&lt;sup&gt;tm1Wij&lt;/sup&gt;</td>
<td>$270.48</td>
</tr>
</tbody>
</table>

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Terms of Use
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### Licensing Information

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

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