NOD.Cg-Prkdc<sup>scid</sup>Il2rg<sup>tm1Wjl</sup>/SzJ

Stock No: 005557 | NSG

Congenic, Spontaneous Mutation, Targeted Mutation

READILY AVAILABLE

PLACE ORDER

Readily available in any quantity needed.

Also Known As: NOD-scid IL2Rgamma<sup>null</sup>, NOD-scid IL2Rg<sup>null</sup>, NSG, NOD scid gamma

These mice are most often referred to using their branded name "NSG™" and are extremely immunodeficient. The mice carry two mutations on the NOD/ShiLtJ genetic background; severe combined immune deficiency (scid) and a complete null allele of the IL2 receptor common gamma chain (IL2rg<sup>null</sup>). The scid mutation is in the DNA repair complex protein Prkdc and renders the mice B and T cell deficient. The IL2rg<sup>null</sup> mutation prevents cytokine signaling through multiple receptors, leading to a deficiency in functional NK cells. The severe immunodeficiency allows the mice to be humanized by engraftment of human CD34+ hematopoietic stem cells (HSC), peripheral blood mononuclear cells (PBMC), patient derived xenografts (PDX), or adult stem cells and tissues. The immunodeficient NSG mice enable research in human immune function, infectious disease, diabetes, oncology, and stem cell biology.

Please click here to order our Humanized Mice

Donating Investigator

Dr. Leonard D. Shultz, The Jackson Laboratory

READ MORE »
### Genetic Background

**Generation**

Contact Technical Support
(2018-07-27 00:00:00)

### Prkdc<sup>scid</sup>

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<tr>
<th>Allele Type</th>
<th>Gene Symbol</th>
<th>Gene Name</th>
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<tr>
<td>Spontaneous</td>
<td>Prkdc</td>
<td>protein kinase, DNA activated, catalytic polypeptide</td>
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### Il2rg<sup>Imlg1Wj1</sup>

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<td>Targeted (Null/Knockout)</td>
<td>Il2rg</td>
<td>interleukin 2 receptor, gamma chain</td>
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Research Tools
- Internal/Organ Research
- Immunology, Inflammation and Autoimmunity Research
- Virology Research
- Cancer Research

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Starting at:

$170.00 Domestic price for male 3-week

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Volume Pricing Available!
for select shipping destinations
Click for Details

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**Details**

**Important Note**

Like its parental strain, NOD/ShiLtJ (Stock No. 001976), NSG mice exhibit a progressive hearing loss that is already severe by three months of age.
Detailed Description

The NOD.Cg-PrkdcscidIl2rgtm1Wjl/SzJ mice, most often known by their branded name, NOD scid gamma (NSG™), do not express the Prkdcs gene nor the X-linked Il2rg gene. NSG mice are viable, fertile, normal in size and do not display any gross physical or behavioral abnormalities. Histological examination of lymphoid tissues reveals absence of lymphoid cells and some cystic structures in the thymus, an absence of follicles in the spleen and markedly diminished cellularity of lymph nodes. NSG mice are deficient in mature lymphocytes, serum Ig is not detectable and natural killer (NK) cell cytotoxic activity is extremely low. These mice are resistant to lymphoma development even after sublethal irradiation treatment. These mutant mice have been shown to readily support engraftment of human CD34⁺ hematopoietic stem cells and represent a superior, long-lived model suitable for studies employing xenotransplantation strategies. NSG mice are highly sensitive to the diabetogenic effects of streptozotocin (STZ). The NSG-STZ preclinical model for pancreatic islet transplantation is now available from JAX® Services. Please note that the NSG carries the true null interleukin-2 receptor gamma chain mutation and should not be confused with other strains that express a truncated interleukin-2 receptor gamma chain as described in: "Modulation of hematopoiesis in mice with a truncated mutant of the interleukin-2 receptor gamma chain" Ohno K et al. Blood 1996. 87:956-67.

View our Resources for the NSG™ mouse model, including,

- NSG™ Mouse Model Portfolio
- Housing and Breeding Considerations for NSG™ Mice
- Frequently Asked NSG™ Questions
- Breakthrough Research Using NSG™
- Immunodeficient Mouse and Xenograft Host Comparisons
- Flow Cytometry Characterization Data for Immunodeficient JAX Strains

Development

Control Suggestions

Selected References

Genetics

- Prkdcscid
- Il2rgtm1Wjl

Disease/Phenotype

Disease Terms

Research Areas By Genotype

Mammalian Phenotype Terms by Genotype

Phenotype Information
Genotyping Protocols
End Point Analysis: Prkdc$$^{\text{scid}}$$ End Point
Probe: Il2rg$$^{\text{tm1Wjl}}$$-PROBE
Standard PCR: Il2rg$$^{\text{tm1Wjl}}$$
Genotyping resources and troubleshooting

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

Breeding Considerations

This strain is a good breeder.
When maintaining a live colony, females that are homozygous for both the Prkdc$$^{\text{scid}}$$ and Il2rg$$^{\text{tm1Wjl}}$$ alleles are bred to males that are homozygous for Prkdc$$^{\text{scid}}$$ and hemizygous for Il2rg$$^{\text{tm1Wjl}}$$ (Il2rg is an X-linked gene). See our NSG husbandry information for additional details. SPF (specific pathogen-free) conditions are recommended. Also see additional NSG housing information.

Additional Breeding and Husbandry Support

Appearance
albino
Related Genotype: A/A Tyr$$^c$$/Tyr$$^c$$

Citation
When using this NSG mouse strain in a publication, please cite the originating article(s) and include JAX stock #005557 in your Materials and Methods section.
Facility Barrier Level Descriptions

- AX30 (Maximum)
- AX27 (Maximum)
- RB13 (Maximum)
- EM03 (Maximum)
- AX28 (Maximum)
- RB15 (Maximum)
- RB08 (Maximum)
- RB10 (Maximum)
- MP13 (Maximum)
- RB09 (Maximum)
- RB16 (Maximum)

Pricing & Availability
Readily available in any quantity needed.
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### Volume Pricing Details

**Domestic Commercial & For-Profit**

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**Volume Pricing Program**

Quantities: Volume pricing is automatically applied when a minimum quantity per strain for a shipment is reached.

Sexes: Sexes of the same strain may be combined to reach minimum quantity levels to receive the volume pricing.

Shipment: All shipping destinations qualify.

This strain is available from some international Charles River (CR) breeding facilities in Japan and/or Europe. For more information, see the Worldwide Distributor List for JAX® Mice.

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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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