NOD. Gp-1<sup>1Unc</sup> Prkdc<sup>-/-</sup> Il2rg<sup>-/-</sup> S z J

Stock No: 010636 | NSG B2m

Congenic, Spontaneous Mutation, Targeted Mutation

READILY AVAILABLE

PLACE ORDER

Sized to accommodate orders of up to 100 or more. Ask Customer Service for details.
Also Known As: NSG B2m, NOD-scid Il2rg<null> B2m<null>, NOD-scid gamma B2m, NSG-B2m KO
These NOD scid Il2rg<sup>null</sup> B2m<sup>null</sup> triple mutant mice combine the features of the severe combined immune deficiency mutation (scid), IL2 receptor gamma chain deficiency, and the MHC class I molecule (beta-2 microglobulin) deficiency and are relatively resistant to graft versus host disease (GVHD). They provide a model useful to study in vivo mechanisms of xenogeneic GVHD and to rapidly assess therapeutic agents.

The serum half-life of human IgG is greatly reduced in B2m mutant strains due to defective FcRn function (Junghans and Anderson, 1996, Praetor and Hunziker, 2002).

Donating Investigator
Dr. Leonard D. Shultz, The Jackson Laboratory
The NOD.Cg-Prkdc<sup>scid</sup> B2m<sup>tm1Unc</sup> ll2rg<sup>tm1Wjl</sup> /SzJ mice, commonly known as NOD-scid ll2rg<sup>null</sup> B2m<sup>null</sup> (NSG-B2m), do not express the Prkdc gene, the X-linked ll2rg gene nor the B2m gene. Triple mutant mice are viable, normal in size and do not display any gross physical or behavioral abnormalities, but can be poor breeders. Mutant mice combine the features of the NOD/ShiLU background, the severe combined immune deficiency mutation (scid), IL2 receptor gamma chain deficiency and the MHC class I molecule, beta-2 microglobulin, deficiency and are relatively resistant to graft versus host disease (GVHD). The mean survival time (MST) of NOD-scid ll2rg<sup>null</sup> B2m<sup>null</sup> irradiated with 2 Gy and injected with 5 x 10^7 human peripheral blood mononuclear cells (PBMC) is 44 days compared to the MST of 21 days in the NOD-scid ll2rg<sup>null</sup> treated similarly. The blood of GVHD affected NOD-scid ll2rg<sup>null</sup> treated similarly. The blood of GVHD affected NOD-scid ll2rg<sup>null</sup> B2m<sup>null</sup> animals exhibited decreased human CD45<sup>+</sup> cell engraftment and significantly higher CD4:CD8 ratios in spleen and bone marrow when compared with GVHD affected NOD-scid ll2rg<sup>null</sup>. This model may be useful to study in vivo mechanisms of xenogeneic graft versus host disease and to rapidly assess therapeutic agents.

Please note that this strain 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" Ohbo K, et al. Blood 1996. 87:956-67.
This strain ships with a JAXTag™ affixed. Learn more about JAXTag™.

**Development**

**Control Suggestions**

**Selected References**

**Genetics**

- **B2m<sup>tm1Unc</sup>**
- **Prkdc<sup>scid</sup>**
- **Il2rg<sup>tm1Wjl</sup>**

**Disease/Phenotype**

**Disease Terms**

**Research Areas By Phenotype**

**Mammalian Phenotype Terms by Genotype**

**References**

**Technical Support**

**Genotyping Protocols**

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<th>End Point Analysis</th>
<th>Standard PCR</th>
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<tr>
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<td>Prkdc End Point</td>
<td>B2m</td>
<td>B2m Probe</td>
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Genotyping resources and troubleshooting

**Dietary Information**

LabDiet® 5K52 formulation (6% fat)

**Breeding Considerations**

When maintaining a live colony, these mice can be bred by crossing female mice that are heterozygous for the B2m<sup>tm1Unc</sup> allele and homozygous for the Prkdc<sup>scid</sup> allele, and homozygous for the X-linked Il2rg<sup>tm1Wjl</sup> allele to male mice that are homozygous for the B2m<sup>tm1Unc</sup> and Prkdc<sup>scid</sup> alleles and hemizygous for the X-linked Il2rg<sup>tm1Wjl</sup> allele.

**Additional Breeding and Husbandry Support**

**Mating System**

See "Breeding Considerations"
Appearance
albino

Related Genotype: A/A Tyr<sup>c</sup>/Tyr<sup>c</sup>

Citation
When using the NSG B2m mouse strain in a publication, please cite the originating article(s) and include JAX stock #010636 in your Materials and Methods sections.

Animal Health Reports

Facility Barrier Level Descriptions

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Commercial & For-Profit
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Live Mouse

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