MOUSE STRAIN DATASHEET - 009617

NOD.Cg-PrkdcscidIl2rgSzJ

Stock No: 009617 | NSG-A2

- Congenic, Spontaneous Mutation, Targeted Mutation, Transgenic
- AVAILABLE

PLACE ORDER

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

**Also Known As:** NOD scid gamma, HLA-A2.1, A2-NSG, hu-NSG-A2, NSG-A2, NSG-HLA-A2.1

This humanized mutant strain combines the features of the NOD/ShiLt background, the severe combined immune deficiency mutation (scid), IL2 receptor gamma chain deficiency and expresses human HLA-A2.1 MHC class I molecule. This model may be useful for studying response to human antigens, such as Epstein-Barr virus, possibly representing a unique preclinical model for vaccine development.

**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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<td>005557 NOD.Cg-Prkdc&lt;sup&gt;scid&lt;/sup&gt;Il2rg&lt;sup&gt;tm1Wjl&lt;/sup&gt;/SzJ</td>
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**Prkdc<sup>scid</sup>**

- **Allele Type:** Spontaneous
- **Gene Symbol:** Prkdc
- **Gene Name:** protein kinase, DNA activated, catalytic polypeptide

**Il2rg<sup>tm1Wjl</sup>**

- **Allele Type:** Targeted (Null/Knockout)
- **Gene Symbol:** Il2rg
- **Gene Name:** interleukin 2 receptor, gamma chain

**Mcp1<sup>Tg(HLA-A2.1)1Enge</sup>**

- **Allele Type:** Transgenic (Null/Knockout, Inserted expressed sequence, Humanized sequence)
RESEARCH APPLICATIONS
Virology Research
Cancer Research
Immunology, Inflammation and Autoimmunity Research
Research Tools
Internal/Organ Research

BASE PRICE
Starting at:
$280.51 Domestic price for male 4-week
316.04 Domestic price for breeder pair

Details

Detailed Description
The NOD.Cg-Prkdc<sup>scid</sup> Il2rg<sup>tm1Wjl</sup> Tg(HLA-A2.1)1Enge/SzJ mice, commonly known as NOD scid gamma, HLA-A2.1 (NSG-A2, NSG-HLA), express human class I MHC Ag HLA-A2.1, but do not express the Prkdc gene nor the X-linked Il2rg gene. The Tg(HLA-A2.1)1Enge transgene integrated into chromosome 8 causing a duplication in Mcph1 (microcephaly, primary autosomal recessive 1). The duplication results in a functional knock-out of Mcph1 in homozygous mice. Founder line 1 has a copy number of 3-8. Triple mutant mice are viable, fertile, normal in size and do not display any gross physical or behavioral abnormalities. NSG mice, carrying the HLA-A2.1 transgene (homozygous or hemizygous), overcome one of the limitations of immune response seen in the NSG model (Stock No. 005557), in that they develop protective T cell responses against human viral infections, specifically Epstein-Barr virus, exhibiting traits similar to those seen in humans. This model may be useful for studying response to human antigens and represent a unique preclinical model for vaccine development.

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.
Genetic Background

- Prkd<sup>scid</sup>
- Il2rg<sup>tm1Wjl</sup>
- Mcph1<sup>Tg(HLA-A2.1)1Enge</sup>

Disease/Phenotype

- Disease Terms
- Research Areas By Genotype
- Mammalian Phenotype Terms by Genotype
- References

Technical Support

Genotyping Protocols

- Probe: Il2rg<sup>tm1Wjl</sup>-PROBE
- End Point Analysis: Prkd<sup>scid</sup>
- QPCR: Tg(HLA-A)-2
- Standard PCR: Tg(HLA-A2.1)1Enge
- Standard PCR: Il2rg<sup>tm1Wjl</sup>

Genotyping resources and troubleshooting

Breeding Considerations

When maintaining a live colony, mice hemizygous for the human transgene and homozygous for the other mutations may be bred together.

Additional Breeding and Husbandry Support

Mating System

See "Breeding Considerations"

Appearance

- albino
- Related Genotype: A<sup>a</sup>/A Tyr<sup>c</sup>/Tyr<sup>c</sup>

Citation

When using the NSG-A2 mouse strain in a publication, please cite the originating article(s) and include JAX stock #009617 in your Materials and Methods section.

Animal Health Reports

Facility Barrier Level Descriptions

- AX12 (Maximum)
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### Breeder Pair

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