NOD.Cg-Prkdc<sup>Scid</sup>H<sub>2</sub>-Ab1<sup>1</sup>H<sub>2</sub>-K<sub>B</sub>e<sup>1</sup>H<sub>2</sub>-D<sub>1</sub><sup>1</sup>112<sup>1</sup>Wg<sup>1</sup>/SzJ

Stock No: 025216 | NSG-(K<sup>bD</sup>)<sup>b</sup> null (IA) null

- Congenic
- Spontaneous Mutation
- Targeted Mutation
- Endonuclease-Mediated Mutation

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Also Known As: NSG-(K^{b,D}^{null}(IA)^null), NSG-(K^{b,D}^{null}(IA)^null)

NSG-(K^{b,D}^{null}(IA)^null) mutant mice combine the features of the severe combined immune deficiency mutation (scid), IL2 receptor gamma chain deficiency, MHC class I molecule (H2-K and D) deficiency, and MHC class II molecule deficiency (IA) and exhibit a resistance 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.

Donating Investigator

Dr. Leonard D. Shultz, The Jackson Laboratory
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<th>Allele Type</th>
<th>Gene Symbol</th>
<th>Gene Name</th>
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<td>Endonuclease-mediated</td>
<td>H2-Ab1</td>
<td>histocompatibility 2, class II antigen A, beta 1</td>
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<td>protein kinase, DNA activated, catalytic polypeptide</td>
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NSG-(K\(^D\))\(^{null}\) (IA)\(^{null}\) quintuple mutant mice combine the features of the severe combined immune deficiency mutation or scid (B and T cell deficiency), IL2 receptor gamma chain deficiency (NK cell deficiency), MHC class I molecule (H2-K and D) deficiency, and MHC class II molecule deficiency (IA). Mice homozygous for the five mutations are viable, normal in size and do not display any gross physical or behavioral abnormalities. The survival of irradiated mice injected with \(10 \times 10^6\) human peripheral blood mononuclear cells (PBMC) is greater than 100 days, with 13/15 of mice exhibiting no symptoms of GVHD for up to 125 days. Because this strain carries a null mutation in the MHC class I H2-Ab1 gene rather than β-2M, IgG clearance is similar to that observed in the NSG model. This strain may be useful to study human immunity in the absence of GVHD and to evaluate antibody-based therapeutics.
Breeding Considerations
When maintaining a live colony, these mice are bred as homozygous for all five alleles (Il2rg is X-linked). Specific pathogen-free (SPF) conditions are recommended.

Additional Breeding and Husbandry Support
Mating System
Homozygous for Prkdc<scid>
Homozygous for H2-K1<tm1Bpe>
Homozygous for H2-Ab1<em1Mvw>
Homozygous for H2-D1<tm1Bpe>
Homozygous for Il2rg<tm1Wjl>
X Homozygous for Prkdc<scid>
Homozygous for H2-K1<tm1Bpe>
Homozygous for H2-Ab1<em1Mvw>
Homozygous for H2-D1<tm1Bpe>
Hemizygous for Il2rg<tm1Wjl>

Citation
When using the NSG-(K<sup>d</sup> b<sup>b</sup> null (IA)<sup>null</sup>) mouse strain in a publication, please cite the originating article(s) and include JAX stock #025216 in your Materials and Methods section.

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