NOD.Cg-Pgkdc12r1gTg(HLA-A/H2-D/B2M)

Stock No: 014570 | NSG-HLA-A2/HHD

- Congenic
- Spontaneous Mutation
- Targeted Mutation
- Transgenic

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Overview

Also Known As: NSG-HLA-A2/HHD
NSG-HLA-A2/HHD mutant mice are immunodeficient and express human HLA class 1 heavy and light chains. This strain may be useful as a human hematopoietic engraftment host that supports the maturation of human T cells with transplantation of human hematopoietic stem cells.

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

GENETIC OVERVIEW

<table>
<thead>
<tr>
<th>Genetic Background</th>
<th>Generation</th>
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<tr>
<td>Tg(HLA-A/H2-D/B2M)1Dvs</td>
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Allele Type
Transgenic (Inserted expressed sequence, Humanized sequence)

Prkdc

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<th>Allele Type</th>
<th>Gene Symbol</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

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<td>Targeted (Null/Knockout)</td>
<td>Il2rg</td>
<td>interleukin 2 receptor, gamma chain</td>
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Mice that are homozygous for the Prkdc<sup>scid</sup> and Il2rg<sup>tm1Wjl</sup> alleles (males are hemizygous for the Il2rg<sup>tm1Wjl</sup> allele) and harbor Tg(HLA-A2/H2-D/B2m)1Dvs/SzJ are immunodeficient and express human HLA class 1 heavy and light chains. HLA-A2 and B2M proteins are detected on the surface of NSG-HLA-A2/HHD splenocytes by flow cytometry analysis. Transplantation of purified human hematopoietic stem cells into newborn NSG-HLA-A2/HHD mice establishes a humanized immune microenvironment allowing functional maturation of human hematopoietic cells. Epstein-Barr virus (EBV) infection results in EBV-associated B cell proliferation and HLA-restricted EBV antigen-specific effector memory CTLs.

In 2018, protein expression was verified by flow cytometry in male and female CD45+, TER119- splenocytes using an anti-HLA-A2 antibody (Clone B7-2.1). A second monoclonal antibody, CR11-351, also detected expression but was less effective at discriminating HLA+ and HLA- cells.
Genotyping Protocols
Probe: Il2rg\textsuperscript{tm1Wjl}-PROBE
End Point Analysis: Prkd\textsuperscript{scid}
Separated PCR: Tg(HLA-A/H2-D/B2M)1Dvs-Chr15

Genotyping resources and troubleshooting

Dietary Information
LabDiet\textsuperscript{®} 5K52 formulation (6% fat)

Breeding Considerations

This strain is a good breeder.
When maintaining a live colony, these mice can be bred as homozygotes for all the alleles: Prkd\textsuperscript{scid} Il2rg\textsuperscript{tm1Wjl} and Tg(HLA-A2/H2-D/B2m)1Dvs (males will be hemizygous for the X-linked Il2rg\textsuperscript{tm1Wjl} targeted mutation).

Additional Breeding and Husbandry Support

Mating System
See "Breeding Considerations"

Citation
When using the NSG-HLA-A2/HHD mouse strain in a publication, please cite the originating article(s) and include JAX stock #014570 in your Materials and Methods section.

Animal Health Reports
Facility Barrier Level Descriptions

RB11 (Maximum)

Pricing & Availability

Sized to accommodate orders of up to 50 or more. Ask Customer Service for details.

Domestic
Pricing effective for USA, Canada and Mexico shipping destinations
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