

A white mouse is shown in profile, facing left, against a blue background. The mouse is standing on a blue surface. The text is overlaid on the image.

THE NEXT *FRONTIER* IN *HUMAN DISEASE MODELING*

NOD *scid* gamma (NSG™), a highly immunodeficient mouse only available from The Jackson Laboratory, provides the unmatched ability to model normal and malignant tissues and cells notoriously difficult to engraft and study in other mouse strains, including:

- Hematopoietic stem cells (hu-NSG™)
- Patient-derived xenografts (PDX)
- PDX-bearing hu-NSG™ for immuno-oncology research

JAX® offers humanized NSG™ and NSG™-based strains with additional manipulations of the host (including the NSG™-SGM3 strain that expresses the human cytokines IL-3, GM-CSF, and SCF) for an enhanced ability to recapitulate specific functions of human disease *in vivo*. These humanized NSG™ strains have superior T cell- and B cell-dependent immune responses, antibody production, and myeloid engraftment.

PDX-engrafted NSG™ mice from our *In Vivo* Pharmacology Services are early passage to maintain tumor structure fidelity and cellular heterogeneity that is seen in the patient. These models serve as a clinically relevant platform for validation of compounds and investigations into cancer pathology, including immuno-oncology.

Which model is best for your research?

JAX® humanized NSG™ and NSG™-SGM3 mice generate functional human immune systems with different capabilities.

Empowering Clinically Relevant Modeling Using NSG™

Whether you are investigating the interactions between host immune cells and pathogens, tumors and immune cells, or require an oncological platform to test your therapeutic compounds, NSG™ mice have revolutionized how infectious disease and cancer research is conducted. By supporting the engraftment of human immune cells and tumors, the NSG™ has transformed the approach taken by the biomedical community to understand human diseases.

RESEARCH FIELDS

Infectious Disease

Hu-NSG™ mice have transformed infectious disease research through more accurate modeling of many human-specific pathogens, allowing for the preclinical validation of treatment strategies.

OPEN

Oncology

Do you need a functional
immune system?

No

Yes

OPEN

Allograft Rejection

Functional and mature immune cell populations represented in hu-NSG™ mice have enabled the investigation of complex mechanisms involved in graft rejection.

OPEN

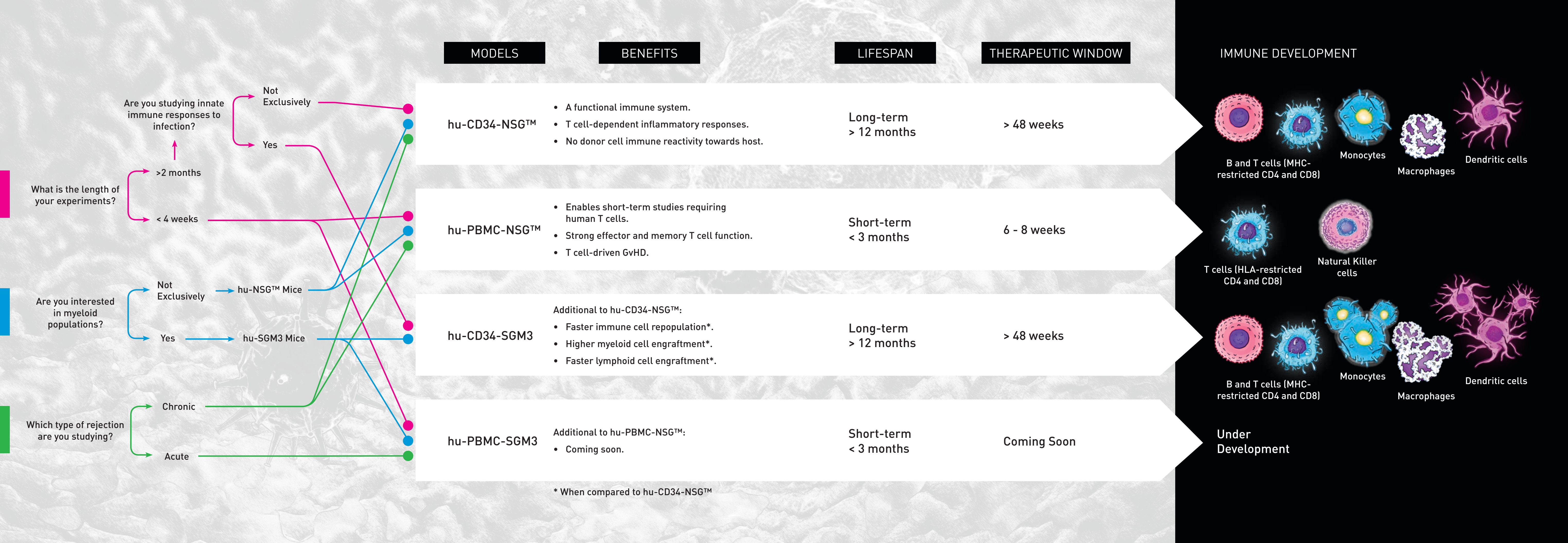
PDX LIVE™ MICE DATA. FASTER.

NSG™ mice engrafted with patient-derived tumors (PDX) offer improved retention of tumor heterogeneity and architecture, thereby providing a platform for compound efficacy testing that is more reflective of patient response.

*Our extensive collection of over 400
predictive preclinical models makes
rapid efficacy testing achievable.*

Our searchable PDX database:

tumor.informatics.jax.org/mtbwi/pdxSearch.do



Model Comparison Guide

MODEL	hu-CD34-NSG™	hu-PBMC-NSG™	hu-CD34-SGM3	hu-PBMC-SGM3
STRAIN	NSG™ (005557)	NSG™ (005557)	NSG™-SGM3 (013062)	NSG™-SGM3 (013062)
HUMAN CYTOKINE EXPRESSION	N/A	N/A	IL3, GM-CSF, CSF	IL3, GM-CSF, CSF
BENEFITS	<ul style="list-style-type: none"> • A functional immune system. • T cell-dependent inflammatory responses. • No donor cell immune reactivity towards host. 	<ul style="list-style-type: none"> • Enables short-term studies requiring human T cells. • Strong effector and memory T cell function. • T cell-driven GvHD. 	In addition to benefits of huCD34-NSG™: <ul style="list-style-type: none"> • Faster immune cell repopulation*. • Higher myeloid cell engraftment*. • Faster lymphoid cell engraftment*. 	Coming Soon
LIFESPAN	Long-term >12 months	Short-term <3 months	Long-term >12 months	Short-term <3 months
THERAPEUTIC WINDOW	> 48 weeks	6 - 8 weeks	> 48 weeks	Coming Soon
IMMUNE DEVELOPMENT	B, T (MHC-restricted CD4 and CD8), Monocytes, Macrophages, Dendritic cells.	T cells (HLA-restricted CD4 and CD8), Natural Killer cells.	B, T (MHC-restricted CD4 and CD8), Monocytes, Macrophages, Dendritic cells.	Coming Soon

* When compared to hu-CD34-NSG™

FOR MORE INFORMATION

CONTACT TECHNICAL INFORMATION SERVICES
OR YOUR REGIONAL REPRESENTATIVE

Find your regional rep. Visit: jax.org/regional-reps

JAX® Mice, Clinical & Research Services

The Jackson Laboratory
Bar Harbor, Maine | Farmington, Conn. | Sacramento, Calif.

jax.org/jax-mice-and-services
1-800-422-6423 (US, Canada & Puerto Rico)
1-207-288-5845 (from any location)

 **The Jackson Laboratory**
Leading the search
for tomorrow's cures