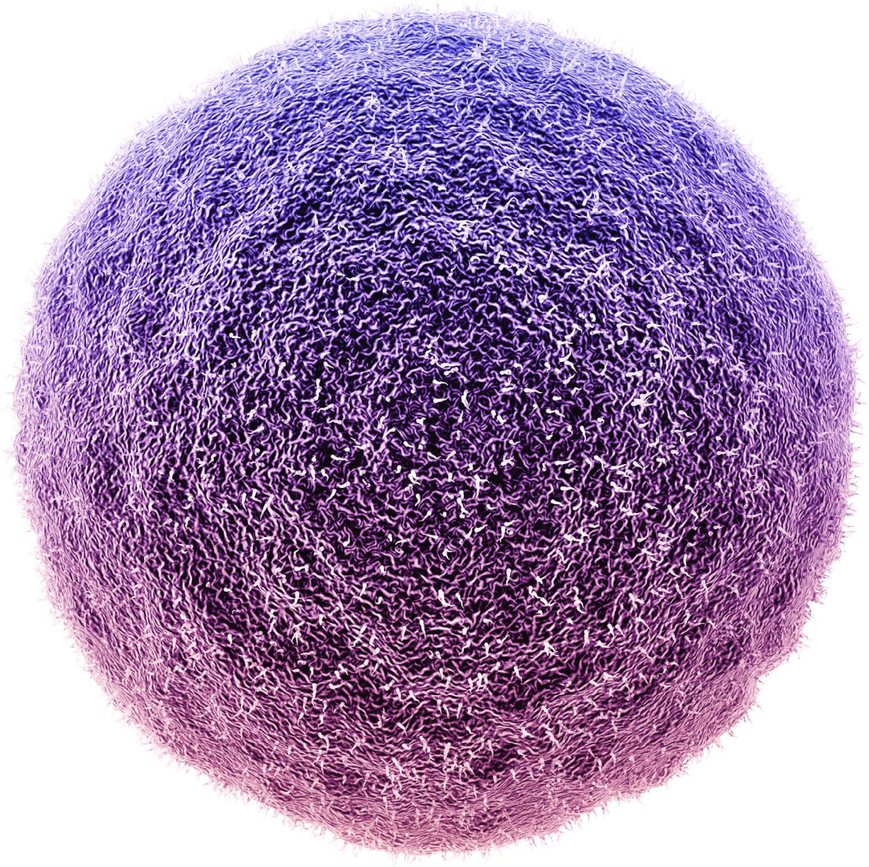
fullscreen

charles river

Immunodeficient Models

Europe

fullscreen



Like You, We Believe There's a Cure

Oncology is one of the leading areas of research into new therapeutics. Charles River's global portfolio of high-quality immunodeficient models gives you the benefit of partnering with an industry leader offering an infrastructure capable of advancing your research both now and in the future.

83%

of 2020 FDA-approved cancer therapies that were developed with Charles River

62

Oncology patents co-invented by our scientists

16

Oncology candidates delivered to our partners

Immunodeficient Mice & Rats

A Broad Portfolio for Your Oncology Research

To help our clients identify the best fit for their oncology research, we maintain a global portfolio of high-quality animal models with varying levels of immunodeficiency and phenotypic characteristics for applications requiring significantly impaired immune function, including engraftment of primary tumours from human patients.

+ Download Our Comparison Poster

***JAX® Mice Strain**
Charles River is the official distributor of JAX® Mice in Europe.

The Jackson Laboratory

fullscreen

Less Immunodeficient → More Immunodeficient

Common Name	Nomenclature	Species	Hair	T Cells	B Cells	NK Cells
+ RNU	Crl:NIH-*Foxn1*^{rnu}	Rat	No	No	Yes	Yes
+ Athymic Nude	Crl:NU(NCr)-*Foxn1*^{nu}	Mouse	No	No	Yes	Yes
+ CD1-Nude	Crl:CD1-*Foxn1*^{nu}	Mouse	No	No	Yes	Yes
+ NMRI Nude	Crl:NMRI-*Foxn1*^{nu}	Mouse	No	No	Yes	Yes
+ Nu/Nu Nude	Crl:NU-*Foxn1*^{nu}	Mouse	No	No	Yes	Yes
+ Swiss Nude	Crl:NU(Ico)-*Foxn1*^{nu}	Mouse	No	No	Yes	Yes
+ BALB/c Nude J*	CAnN.Cg-*Foxn1*^{nu}/J	Mouse	No	No	Yes	Yes
+ BALB/c Nude Crl	CAnN.Cg-*Foxn1*^{nu}/Crl	Mouse	No	No	Yes	Yes
+ Fox Chase SCID	CB17/Icr-*Prkdc*^{scid}/IcrIcoCrl	Mouse	Yes	No	No	Yes
+ SCID Hairless Outbred (SHO)	Crl:SHO-*Prkdc*^{scid}*Hr*^{hr}	Mouse	No	No	No	Yes
+ SCID Hairless Congenic (SHC)	CB17.Cg-*Prkdc*^{scid}*Hr*^{hr}/IcrCrl	Mouse	No	No	No	Yes
+ SCID Beige (Congenic)	CB17.Cg-*Prkdc*^{scid}*Lyst*$^{bg\text{-}J}$/Crl	Mouse	Yes	No	No	Impaired
+ NOD SCID J (Congenic)*	NOD.CB17-*Prkdc*^{scid}/J	Mouse	Yes	No	No	Impaired
+ NOD SCID Crl (Congenic)	NOD.CB17-*Prkdc*^{scid}/NCrCrl	Mouse	Yes	No	No	Impaired
+ NOD rag gamma (NRG)*	NOD.Cg-*Rag1*^{tm1Mom} *Il2rg*^{tm1Wjl}/SzJ	Mouse	Yes	No	No	No
+ NOD scid gamma (NSG)*	NOD.Cg-*Prkdc*^{scid} *Il2rg*^{tm1Wjl}/SzJ	Mouse	Yes	No	No	No

The NSG® Mouse

Triple-Immunodeficient

Developed by Dr. Lenny Shultz at The Jackson Laboratory, the JAX® Mice strain NOD.Cg-*Prkdc*^{scid}*Il2rg*^{tm1Wjl}/SzJ (005557) is commonly known as the **NOD scid gamma** (NSG®).

It is a mutant mouse which combines the features of the NOD/ShiLtJ background (conferring a number of deficiencies in innate immunity), the severe combined immune deficiency mutation (*scid*), and an IL2 receptor gamma chain deficiency which disables cytokine signaling. As a result, NSG® mice lack mature T cells, B cells, and functional NK cells, and are also deficient in cytokine signaling.

NSG® mice do not suffer from *scid* leakiness and their resistance to lymphoma leads to a much longer lifespan than NOD.CB17-*Prkdc*^{scid}/J mice. This model has seen expansive utility in **research areas** from oncology and immunology to infectious diseases and diabetes.

+ Physiological Data Summary

The Jackson Laboratory

Areas of Research	Oncology, Immunology, Virology, Xenograft/transplant host	
Breeding Locations	Charles River	Italy, Japan, UK, France, Germany
	The Jackson Laboratory	The United States

fullscreen

This mouse model is part of The Jackson Laboratory's patented Genetic Stability Programme (GSP). Only The Jackson Laboratory and Charles River in Europe and Japan maintain colonies of JAX® Mice strains which are derived from pedigreed mice from The Jackson Laboratory and are re-infused routinely with pedigreed mice to stabilise the **genetic integrity** and phenotype of these strains.

With more than 2,000 publications, the NSG® is the world's **most referenced** triple-immunodeficient mouse.

The NSG® mouse is characterized and documented in the **Mouse Phenome Database**.

Find out how NSG® mice are advancing oncology and immuno-oncology research by reading our new whitepaper.

+ Download Now

The Jackson Laboratory

JAX® NSG® Mouse Variant Portfolio

NSG® mouse model variants are the most immunodeficient mice and the models of choice for cancer xenograft modelling, stem cell biology, humanised mice, and infectious disease research. Charles River is the exclusive distributor of JAX® Mice in Europe*.

*Use of mice by companies or for-profit entities requires a no-fee JAX® Leap License prior to shipping. This includes mice shipped as part of our Animal Model Evaluation Programme. For more information, please see the Terms of Use tab on the NSG® mouse page of The Jackson Laboratory website.

+ Import NSG® Variant Mice

The Jackson Laboratory

fullscreen

Popular NSG™ Variant Mice

Branded/Common Name	Name and Stock Number
NRG, NOD Rag gamma	NOD.Cg-*Rag1*^{tm1Mom}*Il2rg*^{tm1Wjl}/SzJ (007799)
NSGS, NOD scid gamma Il3- GM-SF, NSG-SGM3	NOD.Cg-*Prkdc*^{scid}*Il2rg*^{tm1Wjl}Tg (CMV-IL3,CSF2,KITLG)1Eav/MloySzJ (013062)
HLA Class I-A2 Transgenics NSG-HLA-A2.1 (009617) NSG-HLA-A2/HHD (014570)	NOD.Cg-Mcph1$^{Tg(HLA-A2.1)1Enge}$*Prkdc*^{scid}*Il2rg*^{tm1Wjl}/SzJ (009617) NOD.Cg-*Prkdc*^{scid} *Il2rg*^{tm1Wjl} Tg(HLA-A/H2-D/B2M)1Dvs/SzJ (014570)
HLA Class II Transgenics DR1 (012479) DR4 (017637)	NOD.Cg-Tg(HLA-DRA*0101,HLA-DRB1*0101) 1Dmz *Prkdc*^{scid} *Il2rg*^{tm1Wjl}/GckRolyJ (012479) NOD.*Cg-Prkdc*^{scid} *Il2rg*^{tm1Wjl} *H2-Ab1*^{tm1Dol}Tg (HLA-DRB1)31Dmz/SzJ (017637)
MHC Class I-null NSG NSG B2m (010636) NSG-(K^{b}D^{b})^{null} (023848)	NOD.Cg-B2m^{tm1Unc} *Prkdc*^{scid} *Il2rg*^{tm1Wjl}/SzJ (010636) NOD.Cg-*Prkdc*^{scid} *H2-K1*^{tm1Bpe} *H2-D1*^{tm1Bpe} *Il2rg*^{tm1Wjl}/SzJ (023848)
NSG MHC I/II DKO NSG-(K^{b}D^{b})^{null} (IA)^{null}	NOD.Cg-*Prkdc*^{scid} *H2-Ab1*^{em1Mvw} *H2-K1*^{tm1Bpe}*H2-D1*^{tm1Bpe} *Il2rg*^{tm1Wjl}/SzJ (025216)
NSG-IL15 NSG-Tg(Hu-IL15)	NOD.Cg-*Prkdc*^{scid} *Il2rg*^{tm1Wjl} Tg(IL15)1Sz/SzJ (030890)
NBSGW	NOD.Cg.*Kit*$^{W-41J}$*Tyr*$^{+}$ *Prkdc*^{scid}*Il2rg*^{tm1Wjl}/ThomJ (026622)
NSG-PiZ	NOD.Cg-*Prkdc*^{scid} *Il2rg*^{tm1Wjl} *Tg*(SERPINA1*E342K)#Slcw/SzJ (028842)
NSG-Tlr4 KO	NOD.Cg-*Tlr4*$^{lps-del}$ *Prkdc*^{scid} *Il2rg*^{tm1Wjl}/SzJ (033704)

+ See All Available Strains

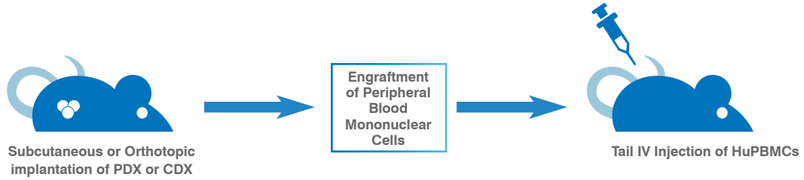
Modelling a Human Immune System in NSG® Mice and Variant Strains

The unique genetic features of NSG® mice make them a superior host for immune system humanisation via engraftment of HSC or peripheral blood mononuclear cells (PBMCs).

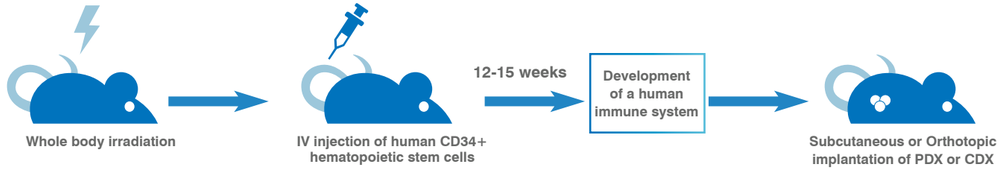
The ongoing development of increasingly refined NSG® variant strains further advances precision disease modelling using immunologically humanised mice.

Visit our **website** for further information on humanisation protocols and frequently asked questions.

Immune System Humanisation by Engraftment of PBMCs

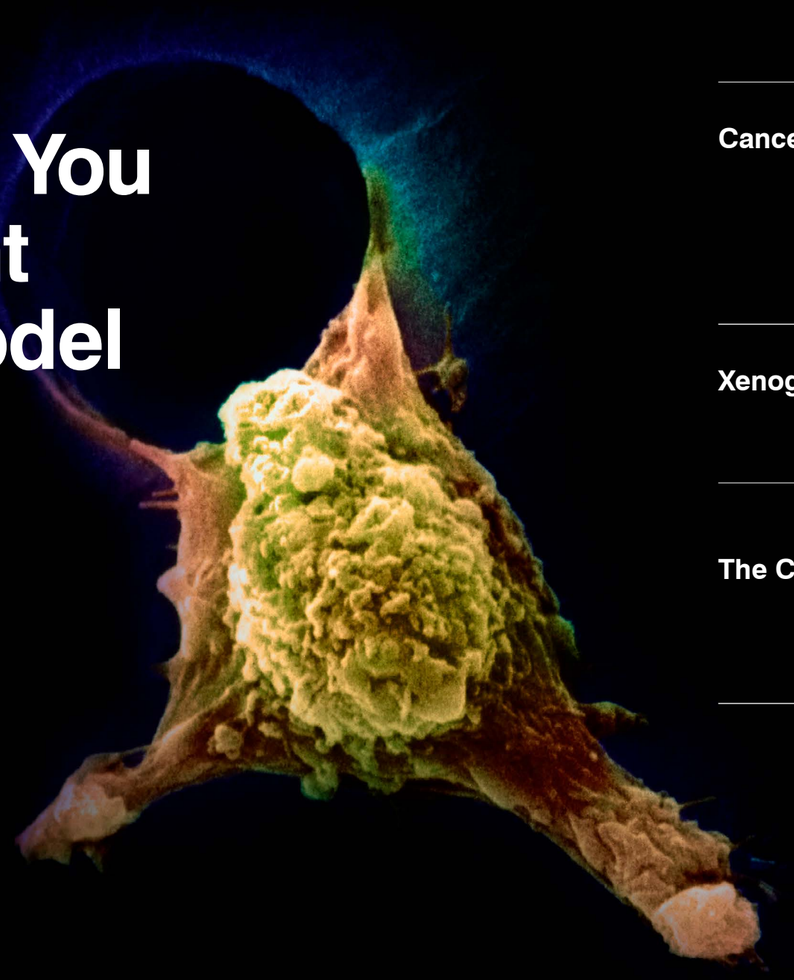


Humanisation by CD34+ Hematopoietic Stem Cell Engraftment



fullscreen

Tools to Help You Find the Right Oncology Model



Cancer Model Database

Using our cancer model database, you can create a more targeted study design from the start by selecting the most appropriate tumour model for your preclinical programme. By searching for specific histology or molecular properties, our cancer model database can help you select the most relevant model for your research needs.

Xenograft Data

We have compiled xenograft data on certain immunodeficient models to assist in expediting the model selection process.

The CORE

The CORE (Collection of Oncology Research Experiments) is an online library of peer-reviewed publications designed to help researchers find the most appropriate research model for their oncology cell lines.

fullscreen

Which Animal Model is Right for Your Study?

Selecting the appropriate animal model for your studies is critical to the success of your research. Our Animal Model Evaluation Programme allows you to assess the quality and compatibility of our animal models before making a commitment.

+ Find Your Model

Why Use Our Animal Model Evaluation Programme?

No Cost: Select the animal model you would like to evaluate and we will provide them to you at no cost.

Risk Reduction: Determine whether a model fits your research protocols before making a significant time and financial investment.

Assess Quality: Assess the quality of our research animal models on your own terms.

Support: Experience our industry-leading customer support network.

fullscreen

ANIMA LAB

animal facility and laboratory equipment • animal research models

info@animalab.eu www.animalab.eu

charles river

askcharlesriver@crl.com | www.criver.com