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ENVIGO

**Research models
and services**
Oncology – Mutant mice

B-NDG Knockout mouse

Model	Nomenclature	Hair	T cells	B cells	NK cells
B-NDG	NOD.CB17-*Prkdc*scid *IL2rg*tm1/BcgenHsd	Yes	No	No	No

Model characteristics

The B-NDG model is a single knockout mouse with an ultra immunodeficient phenotype. The model was generated by Biocytogen by deleting the *IL2rg* gene from NOD-*scid* mice.

Prkdc (protein kinase DNA-activated catalytic) null *scid* mutation is characterized by significantly deficient of functional T cells and B cells.

The Common gamma chain gene (*IL2RG*) deletion results in a lack of functional receptors for IL-2, IL-4, IL-7, IL-9, IL-15, and IL-21, which results in the lack of functional NK cells.

Envigo licensed the mouse model from Biocytogen in 2019, where the model had been maintained. The model is albino.

Research uses

+ Oncology research
+ Cancer cell transplantation
+ Immunology
+ Infectious disease
+ Humanization applications

Features and advantages

B-NDG mice have several unique features that translate into unique benefits as compared to other immunodeficient models.

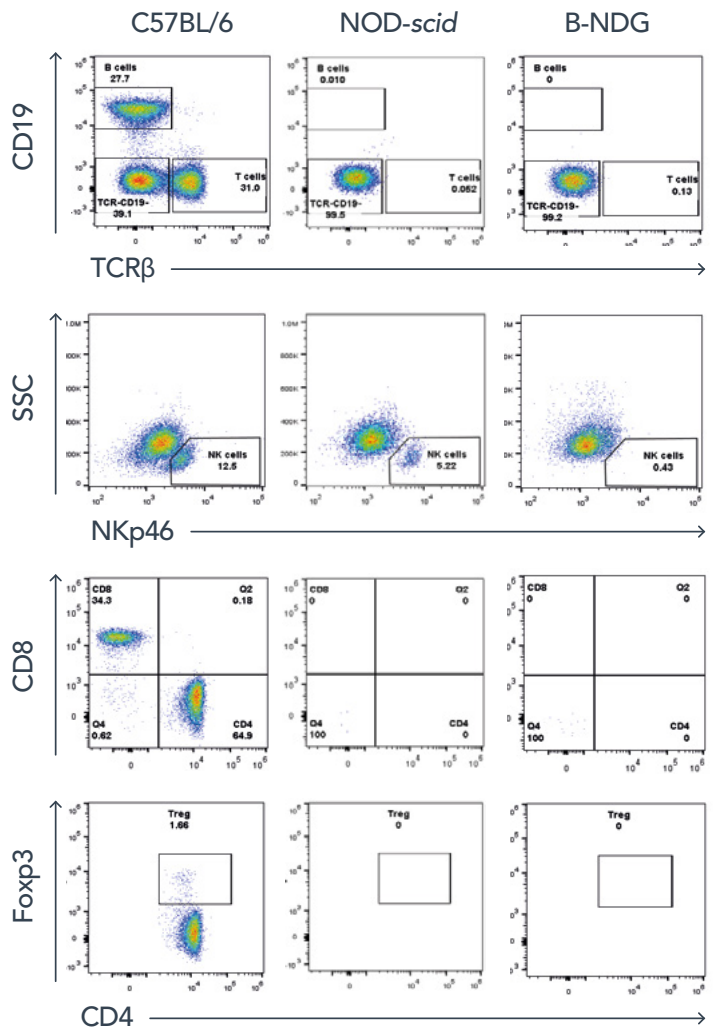| Features	Advantages
Severe Immunodeficiency + Deficient in T cells + Deficient in B cells + Lacks NK cells + Deficiency in cytokine signaling	+ Ultra immunodeficient phenotype enhances tumor cell acceptance
Reduced leakiness	+ Decreased leakiness as compared to SCID models
High humanization capability	+ Minimal rejection of human-derived cells and tissue

Growth chart

The following growth chart represents the growth rates of B-NDG mice. These B-NDG mice originated from our facilities in Indianapolis, IN and Gannat, France. B-NDG mice are maintained on Teklad Global Rodent Diet® 2918 (18% Protein).

NOD.CB17-*Prkdc*^{scid} *IL2rg*^{tm1}/BcgenHsd
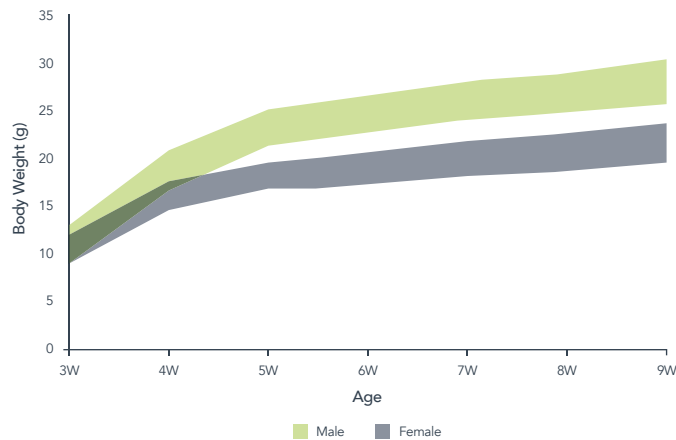
Flow cytometry data of the spleen in C57BL/6, NOD-scid and B-NDG mice

Data shows a complete lack of T cells, B cells and NK cells in the B-NDG model.