



Research models
Oncology

Comparative tumor model study

Breast Cancer WHIM5 PDX cells

MODELS	NOMENCLATURE	HAIR	T CELLS	B CELLS	NK CELLS
B-NDG mouse	NOD.CB17- <i>Prkdc</i> ^{scid} <i>IL2rg</i> ^{tm1} /BcgenHsd	Yes	Nonfunctional	Nonfunctional	Nonfunctional
JAX® NSG™	NOD.Cg- <i>Prkdc</i> ^{scid} <i>IL2rg</i> ^{tm1} Wjl/SzJ	Yes	Nonfunctional	Nonfunctional	Nonfunctional
Athymic Nude Mouse	Hsd:Athymic Nude- <i>Foxn1</i> ^{nu}	No	Nonfunctional	Functional	Functional

Models

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. 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. *Prkdc* (protein kinase DNA-activated catalytic) null *scid* mutation is characterized by a significant deficiency of functional T cells and B cells. The JAX® NOD *scid* gamma (NSG™) mice do not express the *Prkdc* gene nor the X-linked *Il2rg* gene. The Jackson Laboratory is the exclusive distributor of JAX® Mice in the United States. Envigo's athymic nude mouse has the *nu* mutation, which results in a deficiency of T cells.

Cell line

WHIM5 Patient derived xenograft cells from Washington University (St. Louis, MO) were implanted into cohorts of B-NDG, NSG™ and athymic nude mice. Female mice at approximately 8 weeks of age were implanted with 1.5x10⁶ cells with Corning® Matrigel® GFR (1:1 dilution) into the subcutaneous space of the right flank.

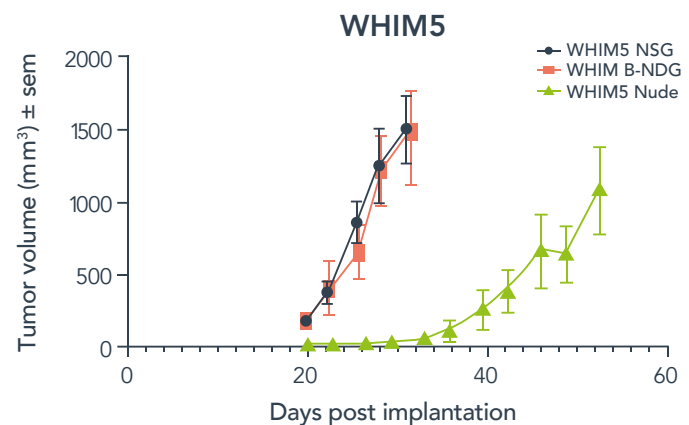
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Tumor growth in vivo

The study was conducted by Envigo at our St. Louis facility. The mice were maintained in IVCs within a biobubble under controlled environmental conditions. The mice consumed Teklad Global Rodent Diet 2919 (19% protein). Body weights were taken and tumors were measured twice per week using TumorImager™, tumor volumes were calculated using the corresponding TumorManager™ software. The tumors grew at similar rates and achieved approximately the same volume in both the NSG and B-NDG models.

Tumor growth rate for WHIM5 cells inoculated into female B-NDG, NSG™ and athymic nude mice



Data shown as mean values; N=5 per group
Tumor growth study services conducted by Envigo.

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