ENVIGO

Research Models and Services

Oncology - Mutant Mice

SCID Models

The *scid* (severe combined immunodeficiency) mutation was discovered in a C.B-17/Icr congenic strain in 1980 by Dr. M.J. Bosma at the Fox Chase Cancer Center (Philadelphia, PA). Envigo SCID models are produced with flexible-film isolators and monitored for microbiologic integrity. SCID mice accept xenografts, making them a useful model for oncology, immunology, HIV pathology, and other fields of biomedical research.

Envigo SCID Mice

Research Use

+ Xenograft transplantation (1,4,6,7,8,10,11, 13,14,16,20,22,24,25,27,30,32,34,35,37)
+ Spontaneous tumors (36)
+ Cancer cell tumorigenesis (10,12,26,29,36)
+ Tumor angiogenesis (14,18,32)
+ Tumor metastatic potential (3,12,13,14,18,30,31,32,37)
+ Tumor suppression therapy (1,2,5,6,7,11,16,17,19,21,22,24,25,29,31,34,35)
+ Carcinogenesis regulation (20,23,33)
+ Tumor imaging (9)

BALB/cJHan®Hsd-*Prkdc*^{scid}
C.B-17/IcrHan®Hsd-*Prkdc*^{scid}
C.B-17/IcrHsd-*Prkdc*^{scid}

Model Characteristics

- Autosomal recessive, single nucleotide polymorphism within *Prkdc* gene on chromosome 16
- Severe combined immunodeficiency affecting T- and B-cell development
- Normal population and function of Natural Killer (NK), macrophage and granulocyte cells
- Incidence of "leaky" phenotype (spontaneous development of functional T- and B-lymphocytes) increases with age in some stocks and strains

C.B-17/IcrHsd-*Prkdc*^{scid} *Lyst*$^{bg-J}$

Model Characteristics

- Autosomal recessive, single nucleotide polymorphism within *Prkdc* gene on chromosome 16
- Autosomal recessive *beige (bg-J)* mutation on chromosome 13
- Diminished Natural Killer (NK) cell activity relative to other SCID models
- Severe combined immunodeficiency affecting T- and B-cell development
- Severe lymphopenia
- "Leaky" phenotype significantly suppressed relative to other SCID models

NOD.CB17-*Prkdc*^{scid}/NCrHsd

Model Characteristics

- *Prkdc*^{scid} mutation has been transferred onto a Non-Obese Diabetic mouse background
- Severe combined affecting T- and B-cell development
- Functional in Natural Killer (NK) cells and APC cells
- Absence of circulating complement
- High incidence of lethal thymic lymphomas
- Does not show signs of autoimmune diabetes
- Leakiness increase with age is minimal

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