charles river

RESEARCH MODELS

The Crl:NIH-*Foxn1*^{rnu} Rat: A T-cell-deficient, athymic nude model

Summary

The outbred *rnu* rat is commonly used for tumor biology, immunology, and xenograft research when a model larger than a mouse is necessary.

Common Names

Nude rat, Rowett nude rat, Athymic rat, rnu rat.

Strain Origin and History

The NIH nude rat was developed from 1979-1980 at the National Institutes of Health (NIH) through a series of matings in which the Rowett nude gene was added and backcrossed into eight inbred rat strains: BN/SsN, MR/N, BUF/N, WN/N, ACI/N, WKY/N, M520/N, and F344/N. This rat was received from the National Institutes of Health Animal Genetic Resources (NIHAGR) and cesarean rederived by Charles River in 2001.

Pathophysiology

- Phenotype: Black, black & white with hooded pigmentation, and occasionally albino. During their life span, some animals exhibit intermittent periods of hair growth and loss.
- The athymic homozygous nude rat is T-cell-deficient and shows depleted cell populations in the thymus-dependent areas of peripheral lymphoid organs. Although it lacks T cells, the nude rat has a normal complement of bone marrow-dependent B cells. Heterozygous nude rats (*Foxn1*^{rnu}/*Foxn1*$^{+}$) are not T-cell-deficient.

Breeding and Production Information

- Breeding method: Outbred, monogamous production colony (female rnu/+ x male rnu/rnu)
- Colony maintained in isolators
  - Litter size: 10-12
- Gestation period: 21-23 days
- Weaning age: 21 days.

Contact Us

For more information, contact us at 1-877-CRIVER1 (1-877-274-8371) or askcharlesriver@crl.com. To place an order or get a quote, contact our Client Relations Department at 1-800-LABRATS (1-800-522-7287).

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Immunodeficient Models

Model	Hair Coat	T-Cell Deficient	B-Cell Deficient	NK-Cell Deficient	Species	Genetics
Athymic Nude	No	Yes	No	No	Mouse	Outbred
Fox Chase SCID®	Yes	Yes	Yes	No	Mouse	Congenic
Fox Chase SCID® Beige	Yes	Yes	Yes	Impaired	Mouse	Congenic
NCG	Yes	Yes	Yes	Yes	Mouse	Coisogenic
NOD SCID	Yes	Yes	Yes	Impaired	Mouse	Congenic
BALB/c Nude	No	Yes	No	No	Mouse	Inbred
CD-1® Nude	No	Yes	No	No	Mouse	Outbred
NIH-III Nude	No	Yes	Yes	Impaired	Mouse	Outbred
NU/NU Nude	No	Yes	No	No	Mouse	Outbred
RNU Nude	No	Yes	No	No	Rat	Outbred
SHC™	No	Yes	Yes	No	Mouse	Congenic
SHO™	No	Yes	Yes	No	Mouse	Outbred
NCI SCID/NCr	Yes	Yes	Yes	No	Mouse	Congenic