



Athymic Nude Rat

The *rnu* mutation was discovered in 1953 in an outbred colony of hooded rats at the Rowett Research Institute, Aberdeen, Scotland. Since 1978, Harlan Laboratories maintained this model as an outbred colony, produced within flexible-film isolators and monitored for microbiologic integrity. Athymic nude rats are suitable for use in transplantation, tumor therapy, and carcinogenesis research, among many other purposes. Harlan was renamed Envigo in 2015.

Hsd:RH-Foxn1^{rnu}

Characteristics (7,9,19,23,27,33)

- + Autosomal recessive mutation on *rnu* locus of chromosome 10
- + T-cell deficient
- + Normal B-cell function
- + Increased Natural Killer (NK) and macrophage cell population
- + Thymic aplasia
- + Phenotypically hairless (sparse hair growth possible)

Research Use

General

- Xenograft transplantation (2,4,8,10,11,12,16,17,20,21,24,26,29,32,35,36,37)
- Tumor suppression therapy (3,8,16,24,30,38)
- Carcinogenesis regulation (6,26,28,35)
- Tumor angiogenesis (1,5)

Brain Cancer

- Rodent models of brainstem tumors (37)
- Oral fenretinide therapy for neuroblastoma (20)
- Anti-VEGF antibody treatment of glioblastoma (22)

- Tumor imaging by targeting peptide radiopharmaceuticals across blood-brain barrier (12)
- Tumor imaging by α -receptor ligands (32)
- Predicting resistance or response to chemotherapy in neuroblastoma by MRS (14,15)
- ¹¹C-colchicine PET imaging of multiple drug resistance (13)
- Systemic immunity against intracranial T9 gliomas (6)

Breast Cancer

- MRI Monitoring of microvascular permeability in xenograft tumors (36)
- Treatment of bone metastasis induced by breast cancer cells (2)
- Eicosapentaenoic acid suppression of human breast cancer xenograft cells (24)
- Pentoxifylline inhibition of tumor cell tissue factor and VEGF (1)

Lung Cancer

- Pharmacology of orally active taxane (21)
- Tumor imaging by α -receptor ligands (32)
- Pentoxifylline inhibition of tumor cell tissue factor and VEGF (1)
- Gefitinib inhibition of EGF-stimulated tumorigenesis in human lung carcinoma (18)

Skin Cancer

- Modulation of chemotherapy resistance in regional melanoma therapy (31)
- Pentoxifylline inhibition of tumor cell tissue factor and VEGF (1)

Liver Cancer

- 4-phenylbutyrate treatment of liver tumor xenografts (28)
- Photodynamic diagnosis of hepatoblastoma (29)
- Hepatic artery infusion chemotherapy for hepatic metastases (16)
- Rat model of liver metastases with human colorectal cells (17)

Colon Cancer

- Rat model of liver metastases with human colorectal cells (17)
- EGFP gene transfer and expression in human colon adenocarcinoma (34)
- Metastatic potential and variants from colorectal tumor cell lines (35)

Sarcoma

- MDM2 antisense therapy suppresses growth of human soft tissue sarcoma (38)
- Electrochemotherapy treatment of human sarcoma xenografts (11)

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