



GENETICALLY
ENGINEERED
MODELS
(GEM)



MICE
Mutant inbred

NATURAL
IMMUNO-
DEFICIENT

B6R Mouse

WILD TYPE

Strain name:

C57BL/6N-Rag2^{tm1}/Rj

Type: Mutant inbred mouse, GMO

Origin: CIPHE, Marseille France, in 2019

NATURAL
MUTANTS

Colour and related genotype:

Black mouse, a (a/a) non agouti



Presentation of the model

The B6R (C57BL/6N-Rag2^{tm1}) mouse is an immunodeficient mouse with a Knock Out (KO) genetic mutation in the Rag2 gene (the 2 recombinaise activation gene, Rag2^{tm1}) on a C57BL/6N genetic background.

The Rag2^{tm1} mutation commonly called Rag2 is a KO mutation of the gene coding for the 2 recombinaise enzyme that plays a key role in producing T and B receptors of the cells. This lack blocks the development of T and B cells and leads to an immune deficiency.

Homozygous mice for this mutation appear with a total lack of peripheral T and B lymphocyte cells.

The B6R mouse has proven to be helpful for studies that include, for instance, transplants of allogeneic or syngeneic tumoral stem cells.

The B6R strain is also helpful in combination with B6Rag2yc and B6yc mice for studies aiming at understanding the role of T, B and NK cells in host resistance to tumors and infectious agents in particular.

JANVIER LABS obtained the B6R (C57BL/6N-Rag2^{tm1}) through a homologous recombination (ES cells from B6N mice), developed at the Centre d'Immunophénomique (Ciphe, Marseille, France) in 2019.

Whereas other animal models that carry similar genes generally appear with a B6-129s joint genetic background, the JANVIER LABS B6R strain is specifically and exclusively expressed on a C57BL/6NRj background. Thus the genetic nature of the strain is perfectly controlled and homogeneous. Animals are bred so as to maintain both the genetic background and the mutations of interest in their homozygous forms.

The B6R strain is bred in an inbred manner and the phenotype is controlled according to the JANVIER LABS GENETIC POLICY®



Main application and research fields

ONCOLOGY

- Tumor implantation on studies
- Studies on gene therapy
- Studies of cancer therapies

INFECTIOLOGY

IMMUNOLOGY AND IMMUNOTHERAPY

TRANSPLANTS AND GRAFTS

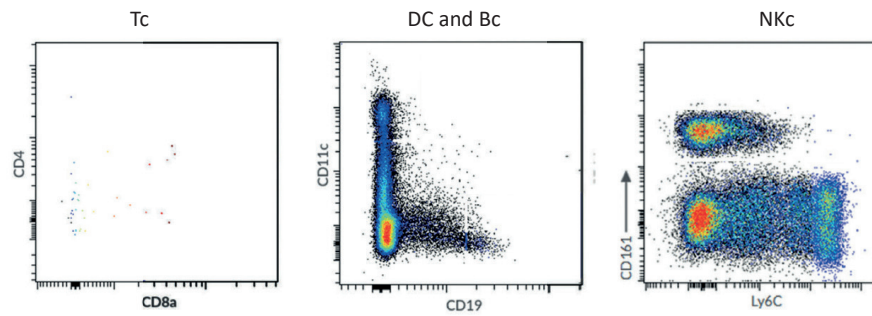


Our added value

- The «JANVIER LABS Genetic Policy», specific programme, guarantees homozygosity of autosomal pairs
- Animals with the SPF or SOPF standards
- A gentling policy for docile and easy-to-handle animals
- Optimal stability conditions of our models during shipments, thanks to our dedicated and internal transport service
- A scientific support with a team of Veterinarians and PhD



Flow cytometry analysis, spleen



Characterisation phenotypic

This model has been entirely characterized. The immunological and hematological parameters were characterized by the Center of Immunophenomics (Ciphe, Marseille, France).

Background	Breeding	Coat	T Lymphocytes	B Lymphocytes	Leakiness	NK cells	Dendritic cells
C57BL/6NRj	Inbred	Black	Absent	Absent	-	Normal	Dysfunctional
Macrophages	Complement	Irradiation tolerance	Life span	Humoral immunity	Lymphoma outcome	Genes of interest	
Normal	Normal	High	Min. 54 Wk.	Absent	Indefinite	RAG2	

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