

360° MODEL RANGE



Humanized NXG-HIS mouse

- **Strain name:** NOD-*Prkdc^{scid}-IL2rg^{Tm1}*/Rj
- **Type:** Inbred transgenic mouse, GEMM
- **Origin:** JANVIER LABS, in 2021
- **Colour and related genotype:** Albino mouse
- **Grafted human cells:** CD34 from blood cord
- **Treatment:** Busulfan

PRESENTATION OF THE MODEL

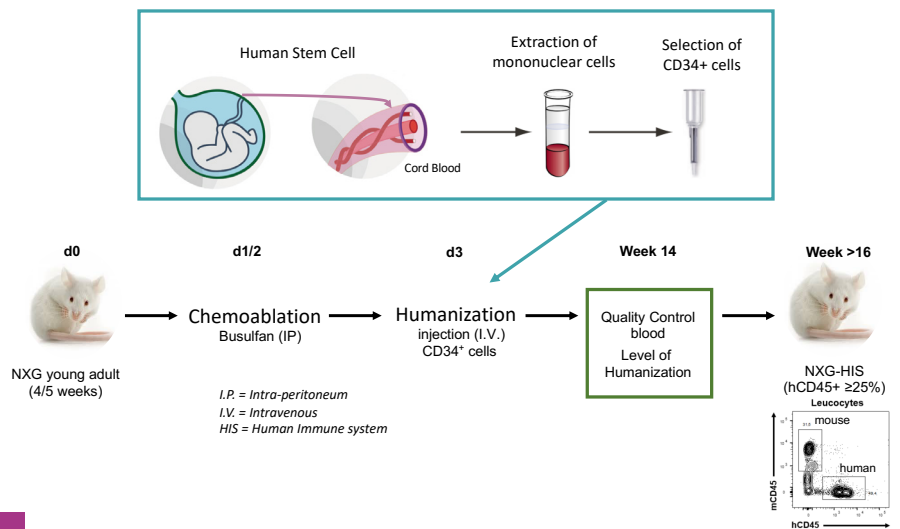
The NXG-HIS is the humanized model corresponding to the NXG or NOD Xenograft Gamma strain which is an inbred strain model (on the NOD background) with 2 mutations of interest, (*Prkdc^{scid}* and *IL2rg^{Tm1}*). The combination of these mutations induces a severe immunodeficiency with an absence of T, B and NK lymphocyte compartments. NXG mouse is therefore genetically similar to NSG, NcG, NOG, etc. (NOD SCID Gamma). The NXG strain also carries the NOD polymorphism of the *Sirpα* gene.

The *Sirpα* protein is expressed on the surface of macrophages. The NOD *Sirpα* allele allows high affinity binding to the CD47 ligand expressed by human hematopoietic cells. This interaction induces a “don’t eat me” signal that blocks murine macrophage activations and prevents phagocytosis of transplanted human cells.

The NOD *Sirpα* allele is a key feature of the NOD background which gives an advantage for human transplantation and xenografting in general.

HUMANIZATION PROCESS

The humanization protocol has been standardized in JANVIER LABS' laboratories. The depletion of the bone marrow is carried out by injection of busulfan the day before the injection of human cells CD34+. Flow cytometry analyses are performed to measure the rate of humanization 14 weeks after injection. Animals are available and can be used for preclinical studies, with SOPF status and for a humanization rate (%CD45+ human) greater than or equal to 25% minimum.



Main application and research fields

✕ Oncology

- Human tumor xenograft studies
- Studies on gene therapy
- Studies of cancer therapies
- Study on cancer stem cells
- Studies focused on breast cancer

✕ Immunology and immunotherapy

✕ Human cell xenografts in a murine model

✕ Xenografting human hematopoietic cells in a murine model

✕ Tissue xenografts

- Human primary tumor xenografts (wide range of indications)
- A platform to study stem biology of epithelial origin or iPCs for example
- Model for allograft rejection (pancreatic islet transplant for type 1 diabetes)

✕ Infectious Diseases

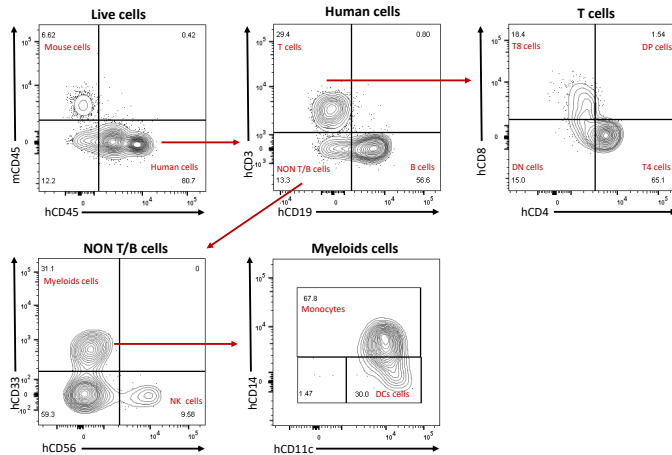
- Humanized models for the study of human infectious diseases (such as human lymphotropic infections, HIV, EBV, Dengue, etc.)

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QUALITY CONTROL OF THE HUMANIZATION RATE

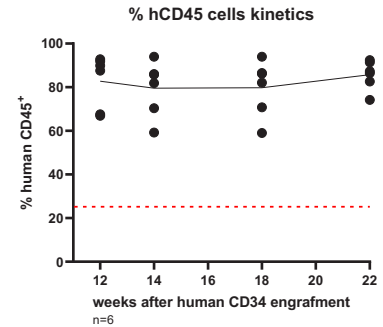
■ Flow cytometry analysis, humanization level (100 x %hCD45+) / (%mCD45+ + %hCD45+)

- Animals selected with %hCD45+ ≥ 25%.
- The human cells grafted may be selected for the HLA.



■ Kinetics of humanization by CD45

- CD45% stability during the first weeks of humanization (blood analysis).



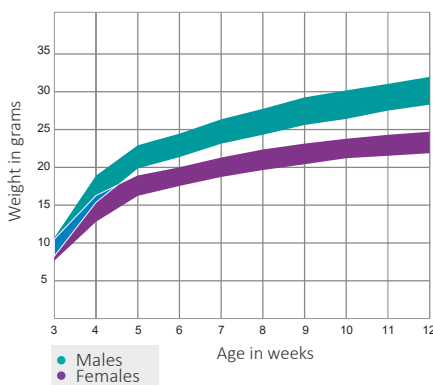
Results presented are preliminary.
Data will be updated soon.

Quality control allows to measure the relative humanization rate of humanized mice in the peripheral blood. The standardization of quality control is performed by flow cytometry of the different human populations: hematopoietic, lymphoid and myeloid. Each NXG-HIS is tested and analysed before sending and use. Analyses of the rate of humanization (absolute number and percentage) in the first weeks show a stability of at least 22 weeks post-injection.

NXG-HIS mice are produced with SOPF status. Each batch provided is supplied with a list showing the animal repartition according to the different CD34+ donors.

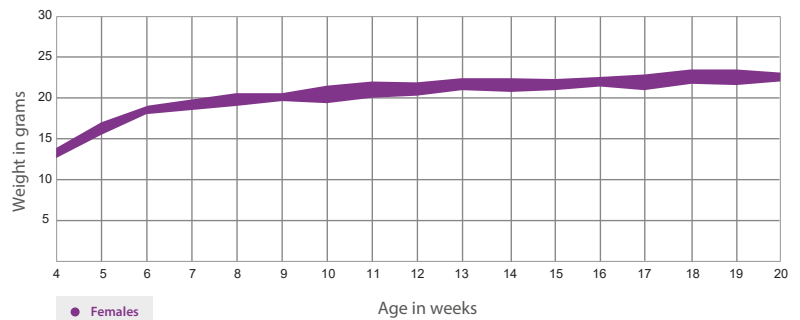
GROWTH CURVE

■ NXG mice growth curve



NXG have normal weight curves.

■ Female NXG-HIS growth curve



Results presented are preliminary.
Data will be updated soon.

Injections have no significant impact on the weight curve.