NCG-Hairless

Strain Name：NOD/ShiLtJGpt-*Prkdc^{em26Cd52}Il2rg^{em26Cd22}Hr^{em1Cin8936}*/Gpt

Strain Type：Knock in

Strain ID.：T003257

Background：NOD/ShiLtJGpt

Description

Severely immuno-deficient mice NCG, an ideal mouse model for human immune system reconstruction, is one of the best mouse models currently used to study human cells, tissues and personalized medicine. As the progress of cancer research accelerates, there will inevitably be a greater demand for mouse models. Based on NCG, we built the derivative strains——NCG-Hairless.

The mouse-related hair genes were genetically edited by CRISPR/Cas9 technology on NCG background to obtain a NCG-Hairless mouse model. The NCG-Hairless obtained by this method have the advantage of hairlessness, an ideal model for tumor biology and xenograft research. In the process of tumor immune evaluation, no shaving is needed, which is more conducive to the observation and measurement of tumors. Besides, the mice Foxn1 gene was not destroyed, which facilitate thymus reconstruction and HSCs reconstitution.

Application

1. Research of humanized mouse models, such as BLT humanized mice, PBLS humanized mice, and CD34+ humanized mice

2. Human cell tissue transplantation (CDX, PDX)

3. Human cancer model

4. Human hematopoietic system and immune system model

5. Stem cell research
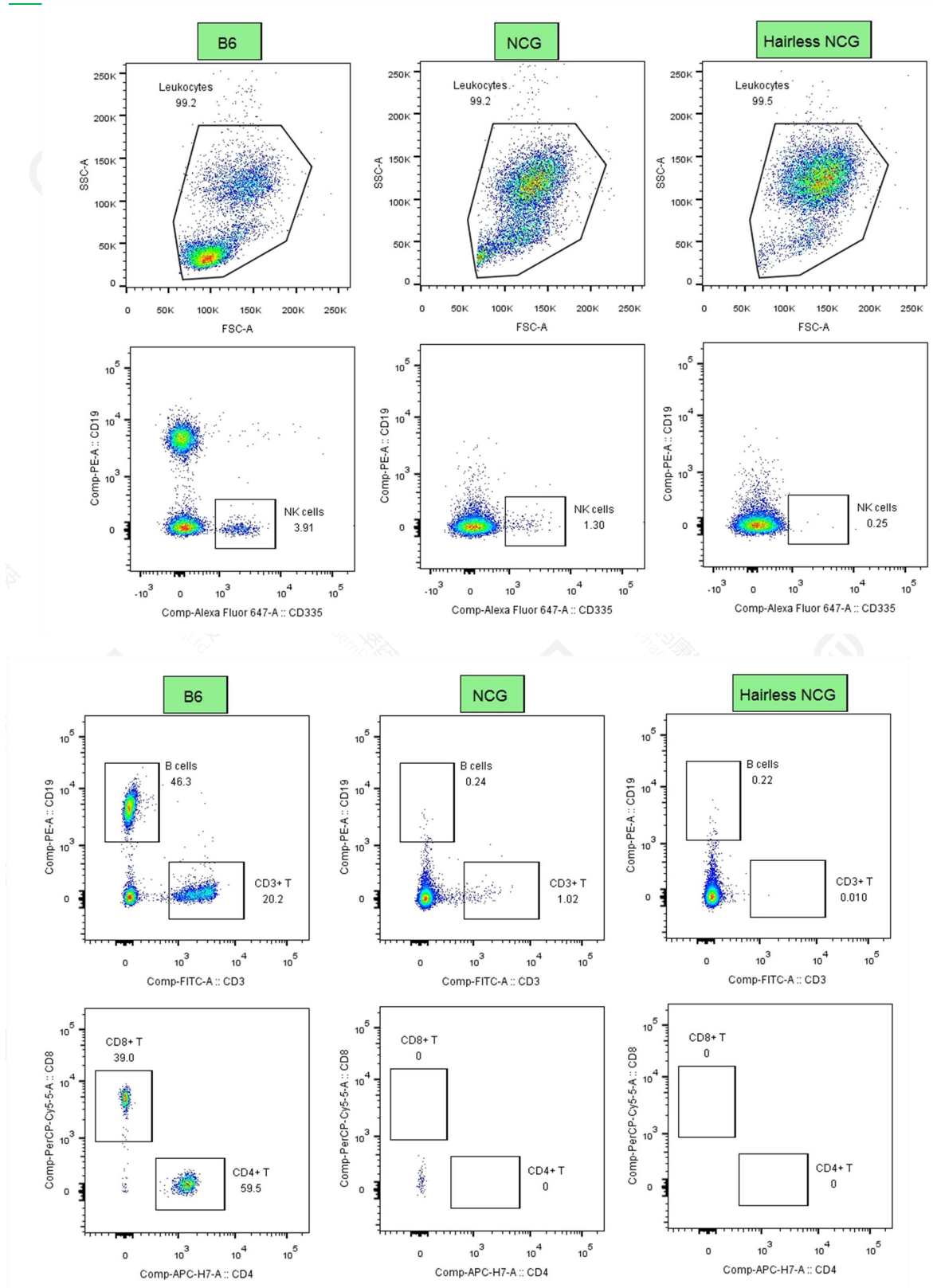
Support data

1. T/B/NK cell ratio assay

Fig.1 Consistent with NCG mice, NCG-Hairless was detected having nearly no T/B/NK cells in peripheral blood lymphocytes, which belongs to severely immuno-deficient mice.

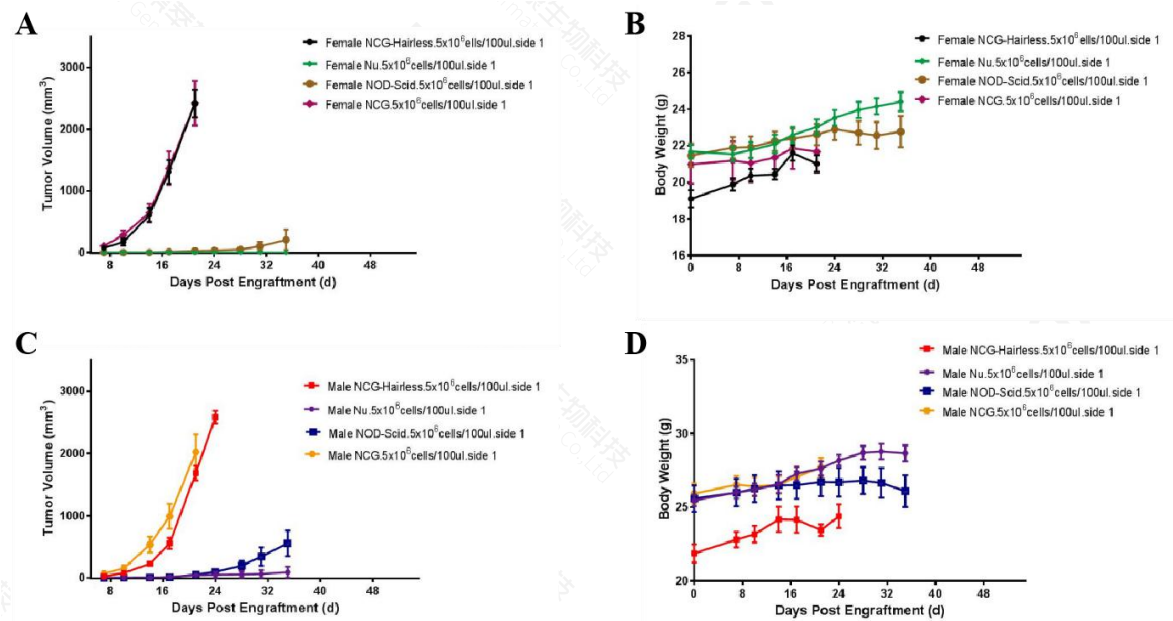## 2. Detection the tumorigenicity of NCG-Hairless

Fig.2 Tumorigenicity test of K562 cell line in several immunodeficient mice.(A:Tumor volume change curve in female NCG-Hairless/Nu/NOD-Scid/NCG Mice Bearing K562 Tumor Xenograft Model Tumor Volume Mean±SEM;B:Body weight change curve in female NCG-Hairless/Nu/NOD-Scid/NCG Mice Bearing K562 Tumor Xenograft Model Tumor Volume Mean±SEM;C:Tumor volume change curve in male NCG-Hairless/Nu/NOD-Scid/NCG Mice Bearing K562 Tumor Xenograft Model Tumor Volume Mean±SEM;D:Body weight change curve in male NCG-Hairless/Nu/NOD-Scid/NCG Mice Bearing K562 Tumor Xenograft Model Tumor Volume Mean±SEM.)

Tumorigenicity of K562 cell line was superior to that of Nude or NOD-Scid mice in NCG and NCG-Hairless mice, and the tumorigenicity of Hairless NCG mice was similar to that of NCG mice. Mean tumor volume or mouse body weight Mean ± SEM.

References

1. Suzuki O, Koura M, Noguchi Y, et al. Zygosity Determination in Hairless Mice by PCR Based on Hrhr Gene Analysis[J]. Experimental animals, 2013, 62(3): 267-273.