

BALB/c- hCD44v6

Strain Name: BALB/cGpt-CD44v6^{em1Cin(hCD44v6)}/Gpt

Strain Type: Knock-in

Strain ID: T056011

Background: BALB/cGpt

Description

CD44v6 is a cell surface glycoprotein involved in cell interaction, cell adhesion and migration. It acts as a receptor for hyaluronic acid (HA). They can also interact with other ligands, such as osteopontin, collagen, and matrix metalloproteinases (MMPs). This protein is involved in a variety of cellular functions, including lymphocyte activation, circulation and homing, hematopoiesis, and tumor metastasis^[1]. CD44v6 is mainly expressed in cancer cells with metastatic ability, which can change the adhesion between cells and between cells and matrix, and increase the affinity between cells and hyaluronic acid, thus enhancing the metastasis potential of tumor cells. It has been reported that CD44v6 is highly expressed in esophageal cancer, breast cancer, non-small cell lung cancer, leukemia, and gastric cancer, which is closely related to the occurrence, development, and metastasis of tumors^[2].

Using gene editing technology, we replaced the extracellular region of the BALB/c-hCD44 gene with the corresponding human-derived gene fragment, while retaining the intracellular signaling region of the corresponding mouse-derived gene, ensuring that the correct cell signaling is not affected. The constructed BALB/c-hCD44v6 will be an ideal animal model for evaluating human CD44v6-targeting drugs.

Strategy

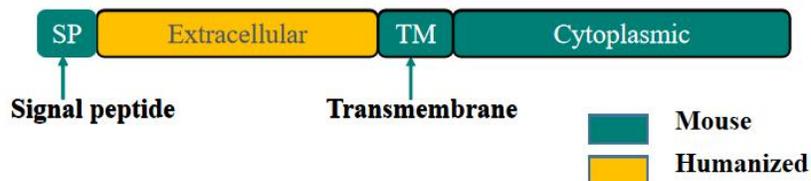


Figure 1 Schematic diagram of CD44v6 humanization strategy in BALB/c-hCD44v6 mice

Applications

1. Efficacy evaluation of human CD44v6 antibody;

2. Safety evaluation of human CD44v6 antibody;
3. Tumor-related research;

Data Support

1. Protein expression assays

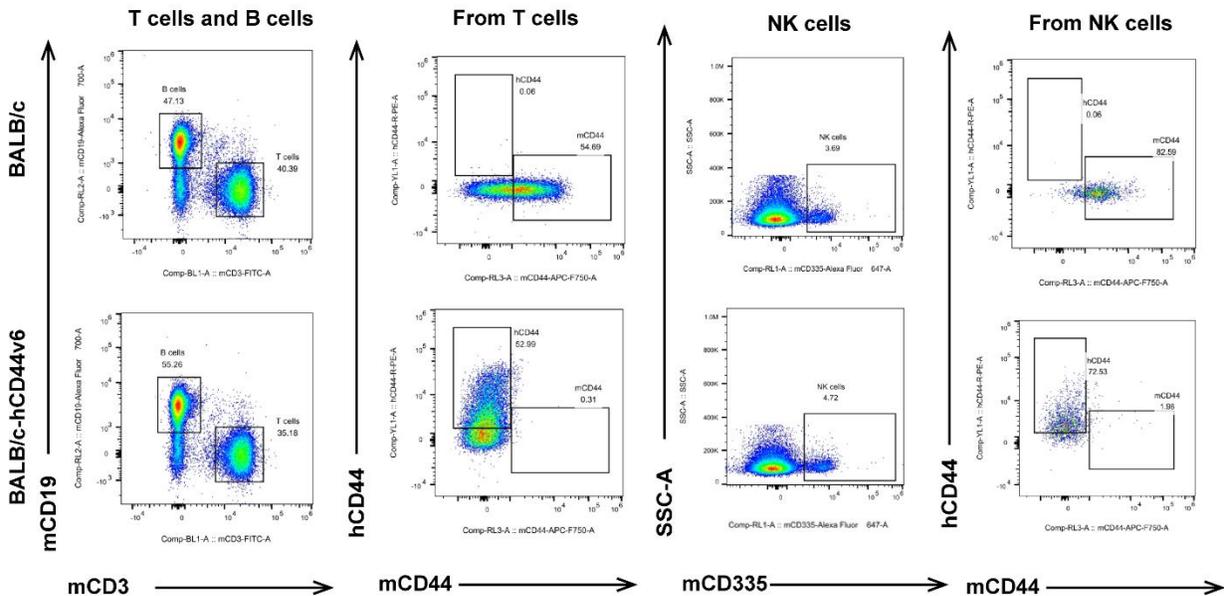
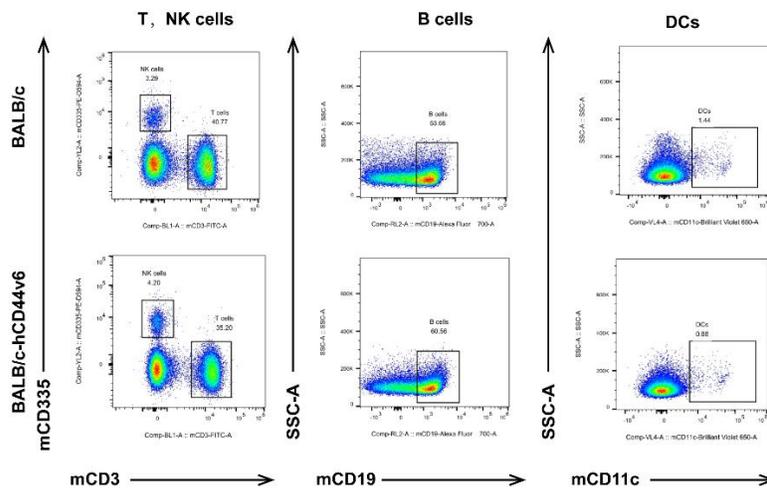


Figure 2 CD44v6 Protein expression assay in BALB/c-hCD44v6 mice

The spleens of WT mice and CD44v6 humanized mice were collected for flow cytometry. The results indicated that only mCD44v6 protein expression was detected in T cells and NK cells of spleen of BALB/c mice. Only hCD44v6 protein was detected in T cells and NK cells of spleen of BALB/c-hCD44v6 mice.

2. The population of cell detection



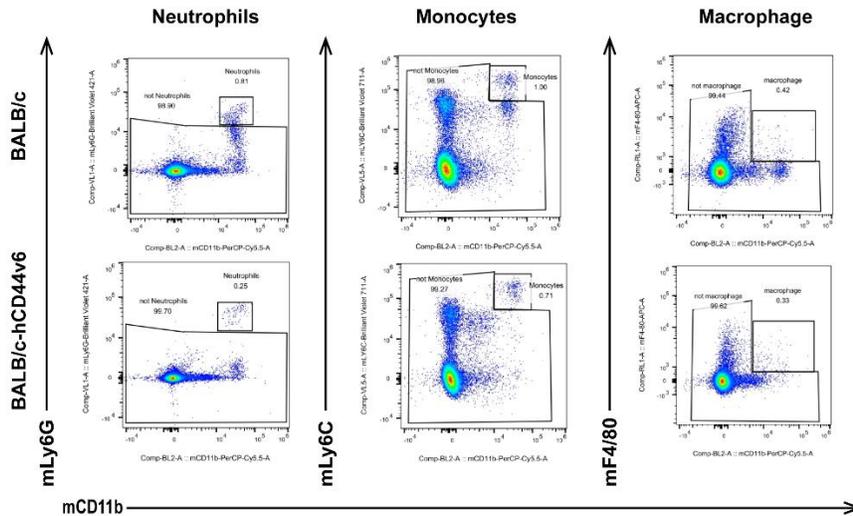


Figure 3 BALB/c-hCD44v6 mice T/B/NK, Neutrophils, Monocytes, Macrophages, DCs cell ratio assay

The spleens of WT mice and CD44v6 humanized mice were collected for flow cytometry. The results showed that the proportion of T/B/NK, Neutrophils, Monocytes, Macrophages, and DCs in the spleen of wild-type mice and CD44v6 humanized mice were closed.

References

1. Hassn Mesrati M, Syafruddin SE, Mohtar MA, Syahir A. CD44v6: A Multifunctional Mediator of Cancer Progression. *Biomolecules*. 2021 Dec 9;11(12):1850.
2. Spiegelberg D, Nilvebrant J. CD44v6-Targeted Imaging of Head and Neck Squamous Cell Carcinoma: Antibody-Based Approaches. *Contrast Media Mol Imaging*. 2017 Jun 20;2017:2709547.