hCD40

品系全名	C57BL/6Smoc-*Cd40*^{em1(hCD40) Smoc}
目录号	NM-HU-00076
品系状态	活体

基因信息

基因名 CD40	**基因曾用名**	IGM; p50; Bp50; GP39; IMD3; TRAP; HIGM1; T-BAM; Tnfrsf5; AI326936
	NCBI ID	21939
	MGI ID	88336
	Ensembl ID	ENSMUSG00000017652
	人类同源基因	CD40

品系描述

在C57BL/6遗传背景下，将小鼠内源Cd40 基因胞外区序列全部替换为人源CD40 序列，表达一个人源嵌合CD40 蛋白。

应用领域：肿瘤研究；免疫治疗；药物筛选

*使用本品系发表的文献需注明: hCD40 mice (Cat. NO. NM-HU-00076) were purchased from Shanghai Model Organisms Center, Inc..
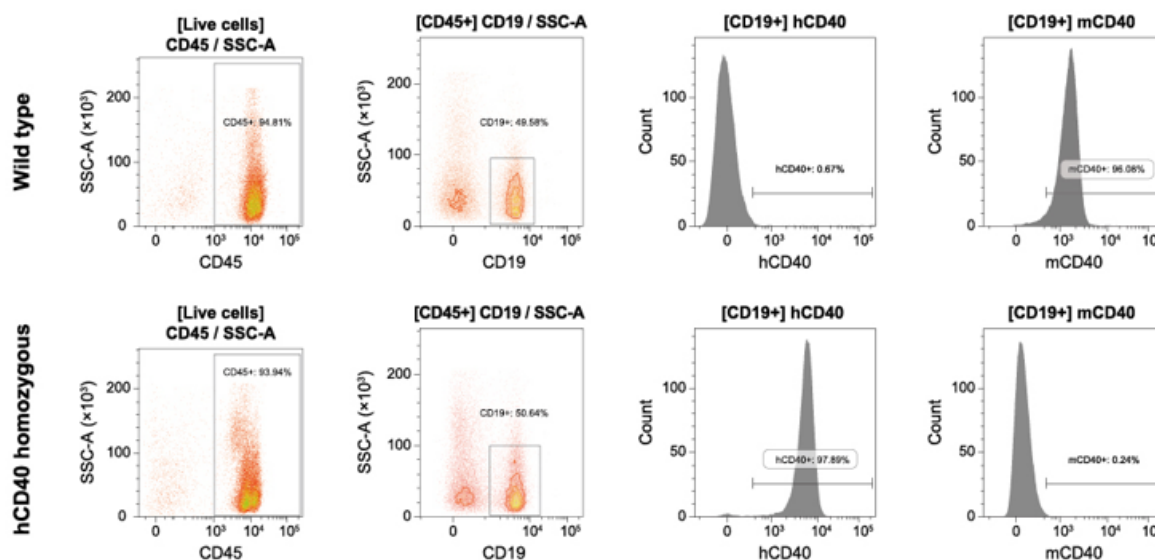
验证数据

Fig 1. Detection of CD40 expression in peripheral blood cells of humanized CD40 mice. The FACS results of peripheral blood cells collected from homozygous humanized CD40 mice and wild-type mice showed that the active expression of humanized CD40 was detected in CD19 positive cells collected from homozygous humanized CD40 mice, and its expression level was similar to that of murine Cd40 expression in wild-type mice.(Completed in collaboration with CrownBio).
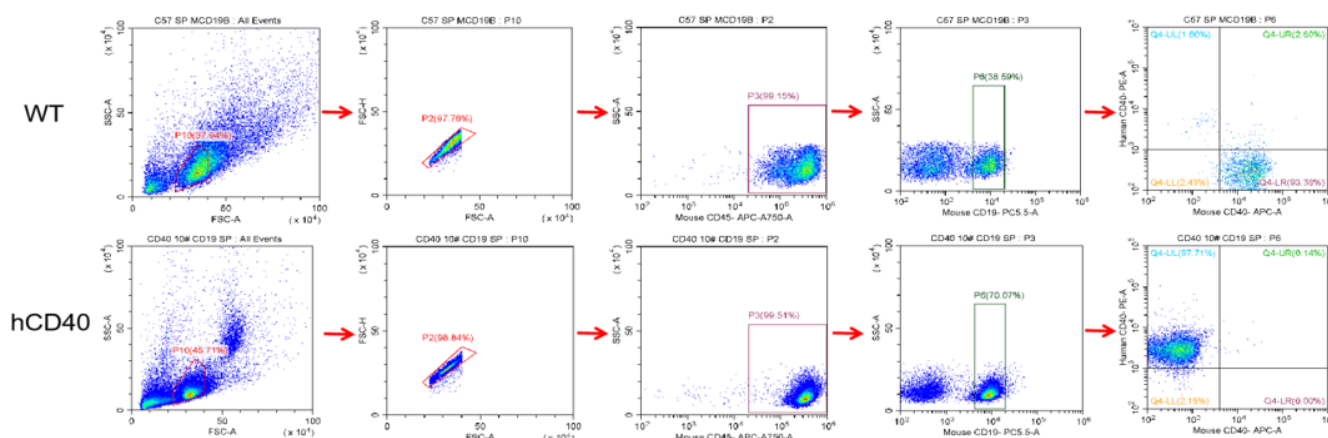

Fig 2. Analysis of human CD40 expression in the spleen by FACS. The homozygous KI animal expresses human CD40 on the CD19$^+$ B cells.
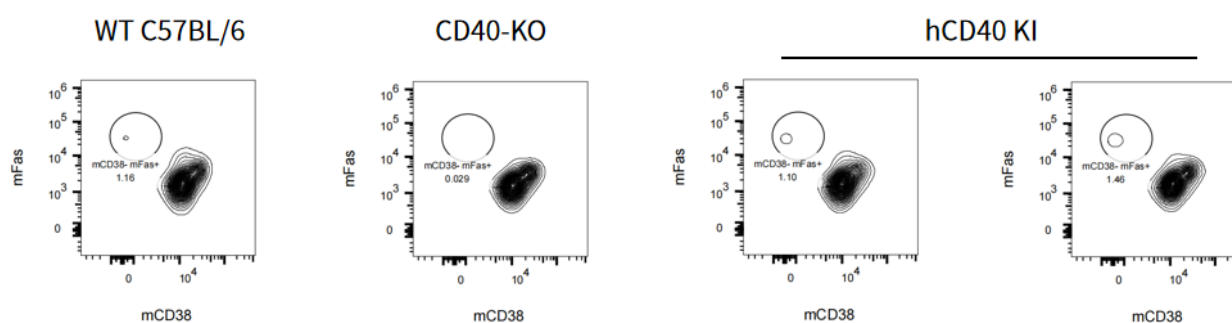
Fig 3. Representative flow cytometry staining of GC B cells frommesenteric lymph nodes.
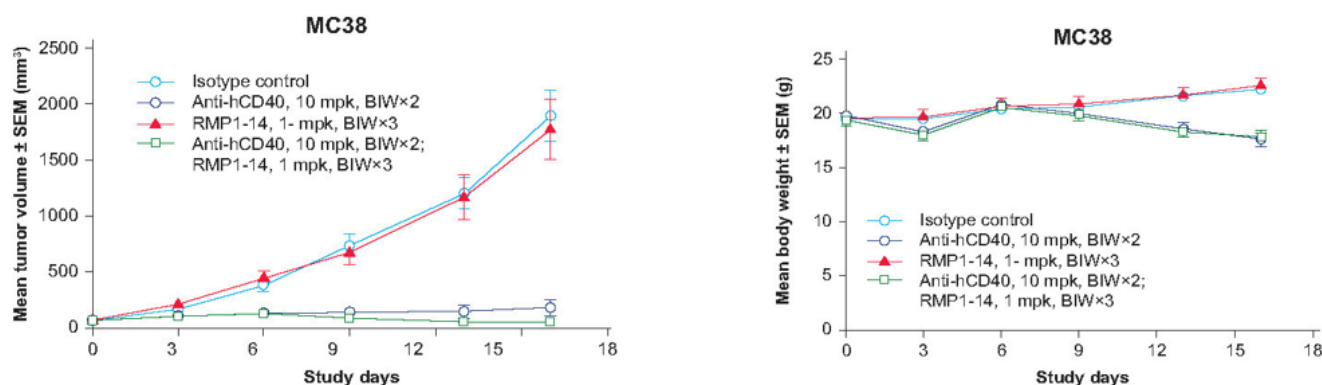

Fig 4. In vivo validation of anti-tumor efficacy in a MC38 tumor-bearing model of humanized CD40 mice. Humanized CD40 mice were inoculated with MC38 colon cancer cells. After the tumors grew to 100 mm3, the animals were randomly assigned into different group (n=8). The results indicated that the antibodies targeting human CD40 showed a very significant antitumor effect (p<0.001). Combination of anti-CD40 and anti-PD-1 is shown more significant anti-Tumor effect. (Cooperation with CrownBio)
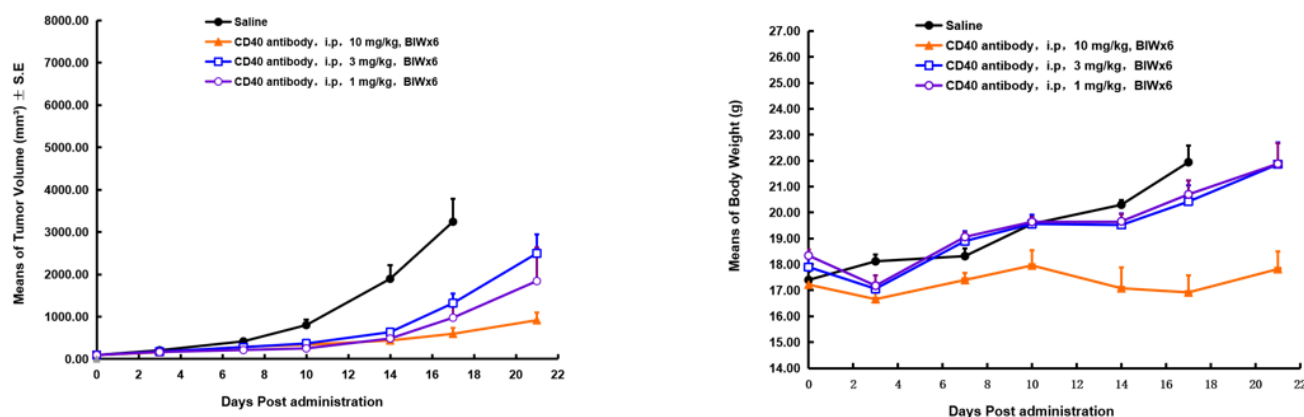

Fig 5. In vivo validation of anti-tumor efficacy in a MC38 tumor-bearing model of humanized CD40 mice. Homozygous humanized CD40 mice were inoculated with MC38 colon cancer cells. The results showed that an anti-human CD40 antibody exerted a very significant anti-tumor effect , demonstrating that the humanized CD40 mice are a good in vivo model for validating the efficacy of antibodies targeting human CD40. Mean volume ± SEM of tumor tissues(A). Mean body weight ± SEM of mice(B).
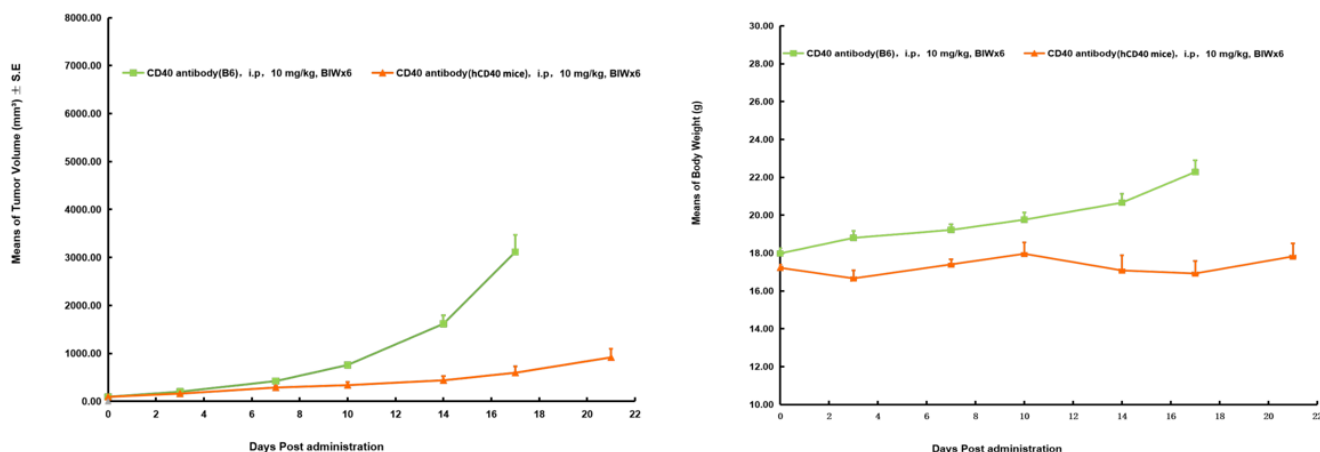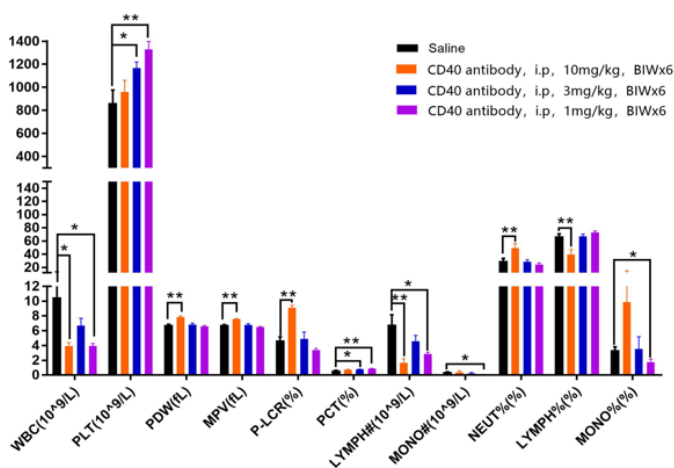
Fig 6. Tumor and weight changes over treated with anti-human CD40 antibody.

Abbreviation	Stand for
WBC	White Blood Cell Count
PDW	platelet distribution width
MPV	mean platelet volume
PLCR	platelet larger cell ratio
PLT	platelet
PCT	thrombocytocrit
LYMPH#	lymphocyte count
MONO#	monocyte count
NEUT%	neutrophil count
LYMPH%	lymphocyte ratio
MONO%	monocyte ratio

Fig 7. Complete blood count (CBC) of anti-human CD40-antibody treated hCD40 mice.
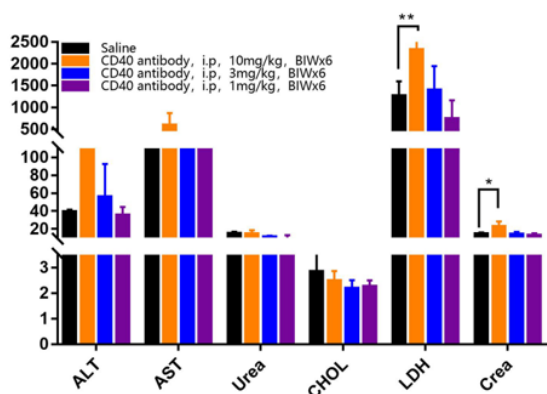
Abbreviation	Stand for
ALT	Alanine transaminase
AST	Aspartate transaminase
Urea	Urea
CHOL	Cholesterol
LDH	lactate dehydrogenase
Crea	creatinine

Fig 8.Blood chemistry of anti-human CD40-antibody treated hCD40 mice.
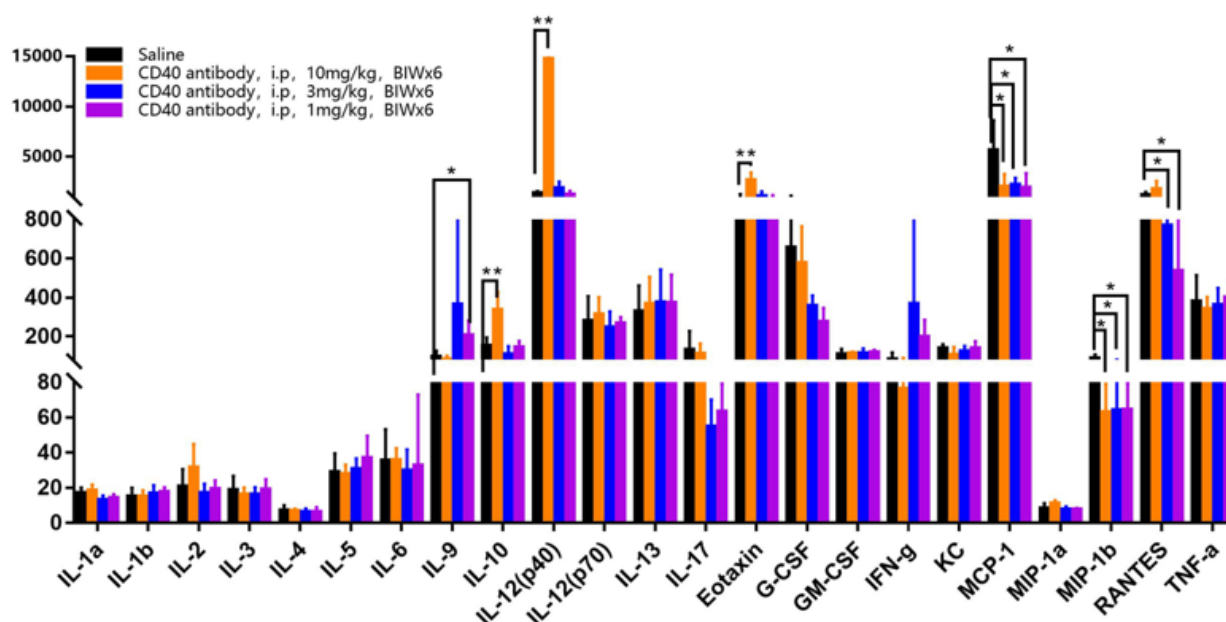
Fig 9. Cytokine analysis of anti-human CD40 antibody treated hCD40 mice.

Cytokine analysis of anti-human CD40 antibody treated MC38 tumor-bearing model of humanized CD40. Anti-human CD40 antibody treatment led to significant increase several cytokines including IL-12(p40), Eotaxin, etc.