

Rag1-KO(Rag1-EGFP)

A loxP-EGFP-PolyA-loxP-Neo-loxP expression cassette was knocked into the Rag1 gene start codon site. As a Rag1 knockout mouse model, this strain can be

品系全名	B6;129S- <i>Rag1</i> ^{tm1(loxP-EGFP-PolyA-loxP-Neo-loxP)Smoc}
目录号	NM-KI-00069
品系状态	活体

基因信息

基因名 Rag1	基因曾用名	Rag-1
	NCBI ID	19373
	MGI ID	97848
	Ensembl ID	ENSMUSG00000061311
	人类同源基因	RAG1
	人类同源基因关联疾病	奥门综合症、免疫缺陷综合症

品系描述

A loxP-EGFP-PolyA-loxP-Neo-loxP expression cassette was knocked into the Rag1 gene start codon site. As a Rag1 knockout mouse model, this strain can be used in subcutaneous inoculation of liver cancer tissues and tumor cells. Tumors can easily form and grow. The amount of T and B lymphocytes in peripheral blood of mice was extremely low tested by FACS, which was comparable to or lower than that of Nude mice, and there was a significant difference compared with wild type mice. The pathological sections of HE staining of tumor tissues showed that the tumor sections of Rag1 KO mice and Nude mice were similar. This strain has the potential to replace Nude, NOD-SCID mice as a tumor-bearing mouse model.

应用领域: Immunodeficiency, tumor-bearing model

*使用本品系发表的文献需注明: Rag1-KO(Rag1-EGFP) mice (Cat. NO. NM-KI-00069) were purchased from Shanghai Model Organisms Center, Inc..

验证数据

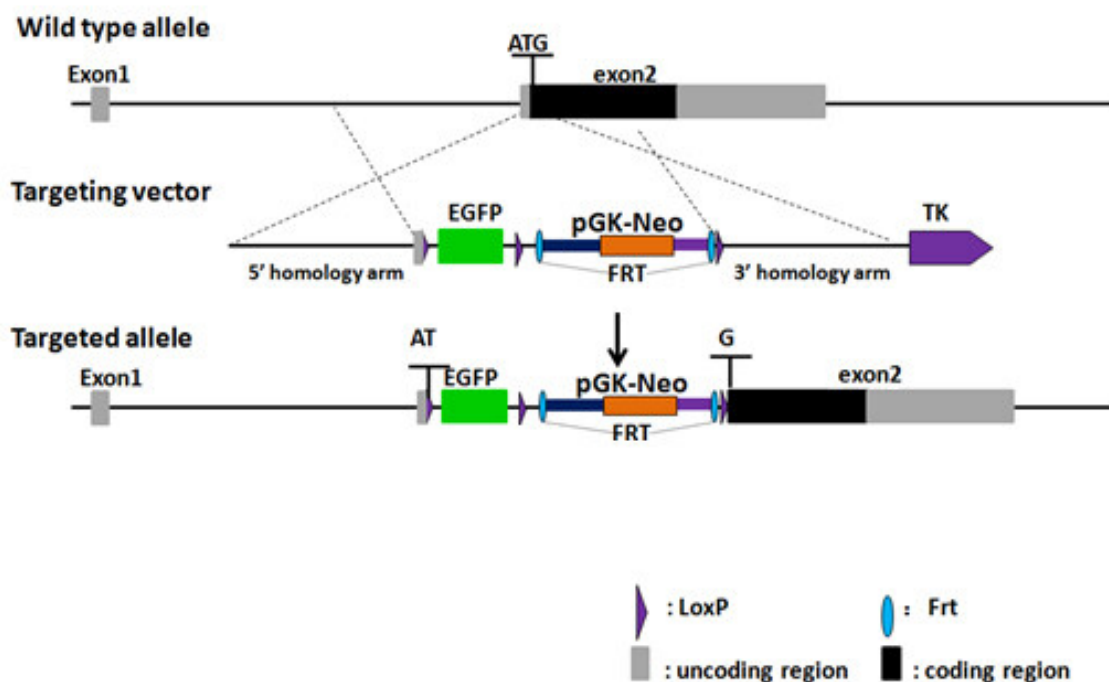


Fig.1 Construction strategy of Rag1-KO.

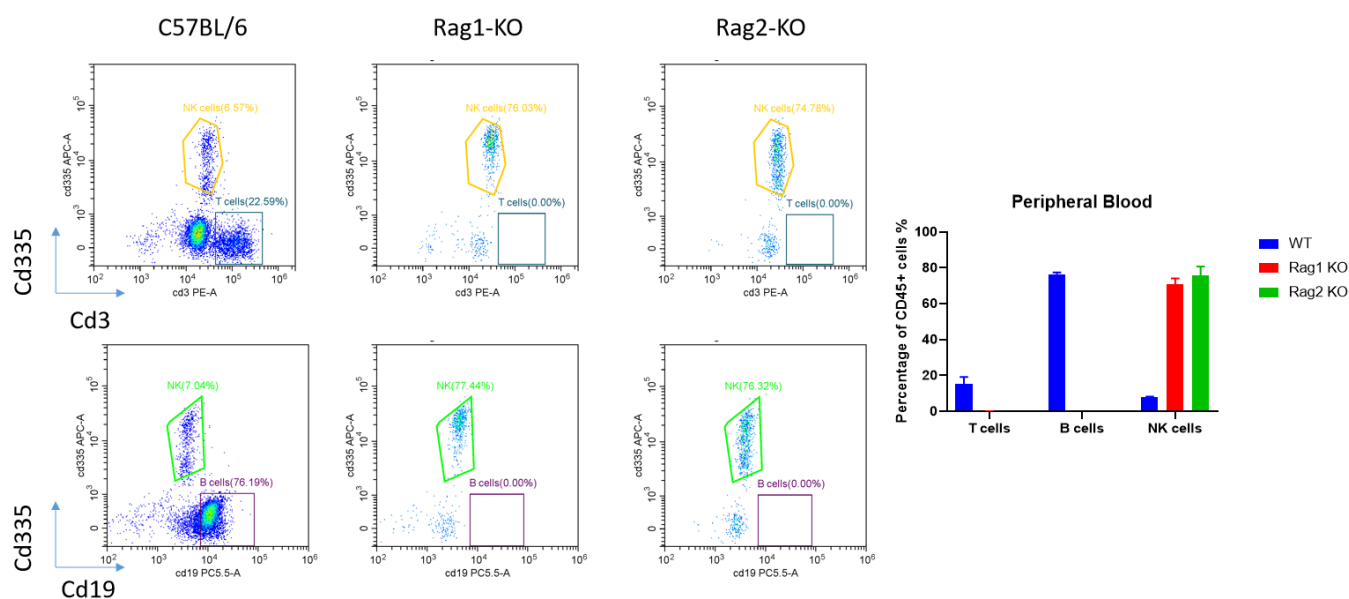


Fig.2 Loss of T and B cells in peripheral blood of Rag1-KO and Rag2-KO mice.

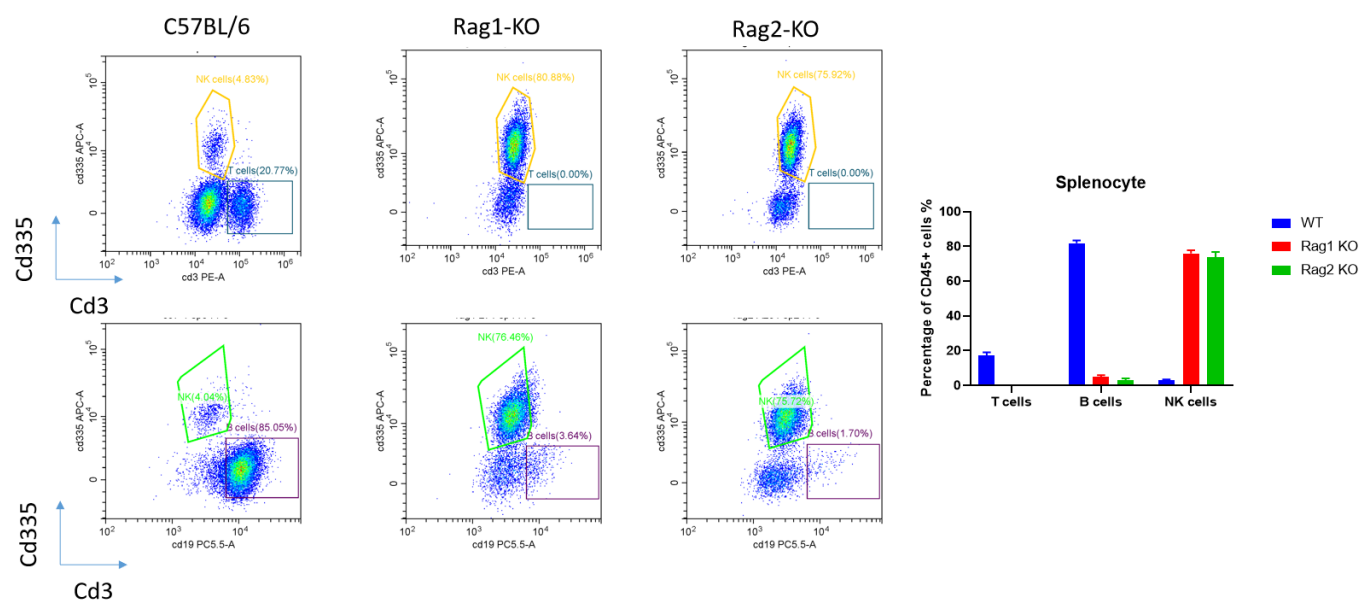


Fig.3 Loss of T and B cells in Spleen of Rag1-KO and Rag2-KO mice.

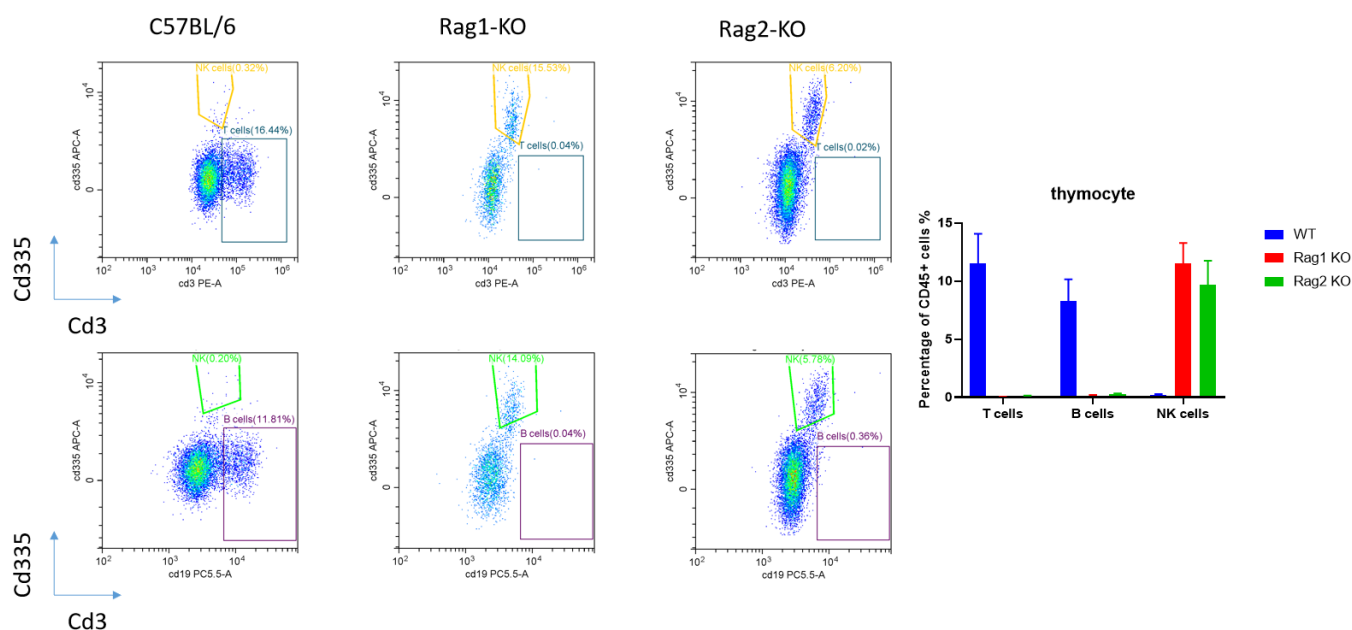


Fig.4 Loss of T and B cells in thymus of Rag1-KO and Rag2-KO mice.

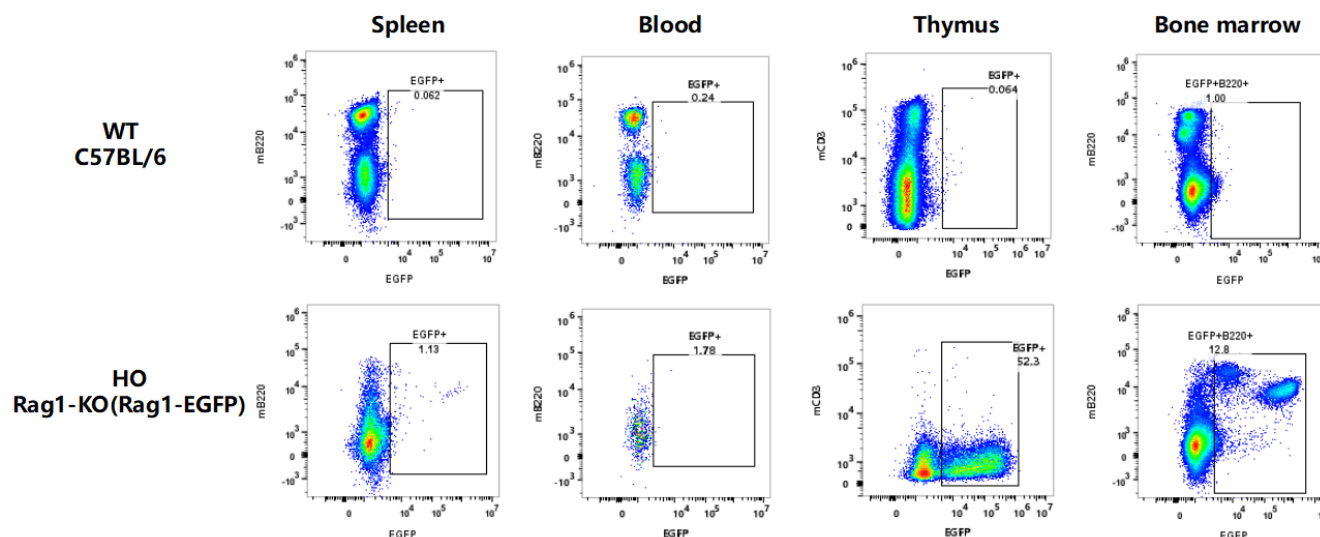


Fig.5 Detection of EGFP expression in CD45+ cells in spleen, blood, thymus, and bone marrow of 8.7-week-old female WT and HO Rag1-KO(Rag1-EGFP) mice.

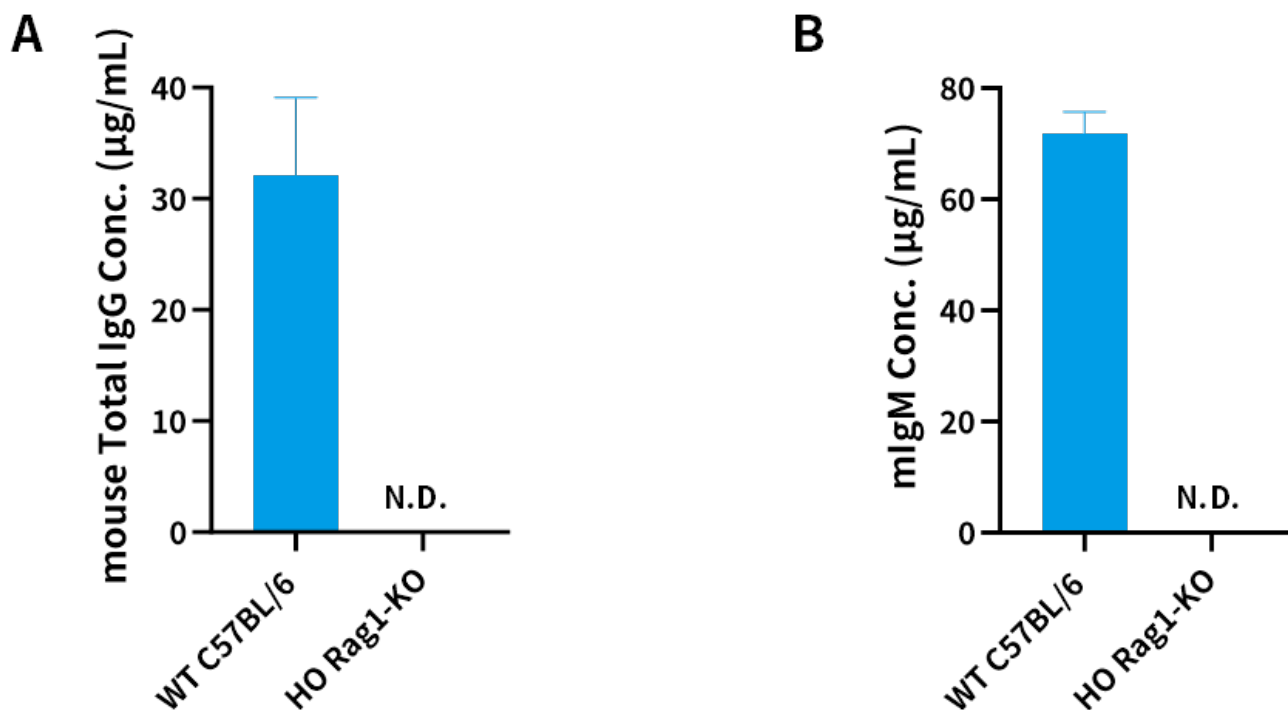


Fig.6 Detection of mouse IgG(A) and IgM(B) expression in serum by ELISA. (male, 5~6wks, n=3)

Abbr. HO, homozygous; WT, wild type; N.D. not detected.

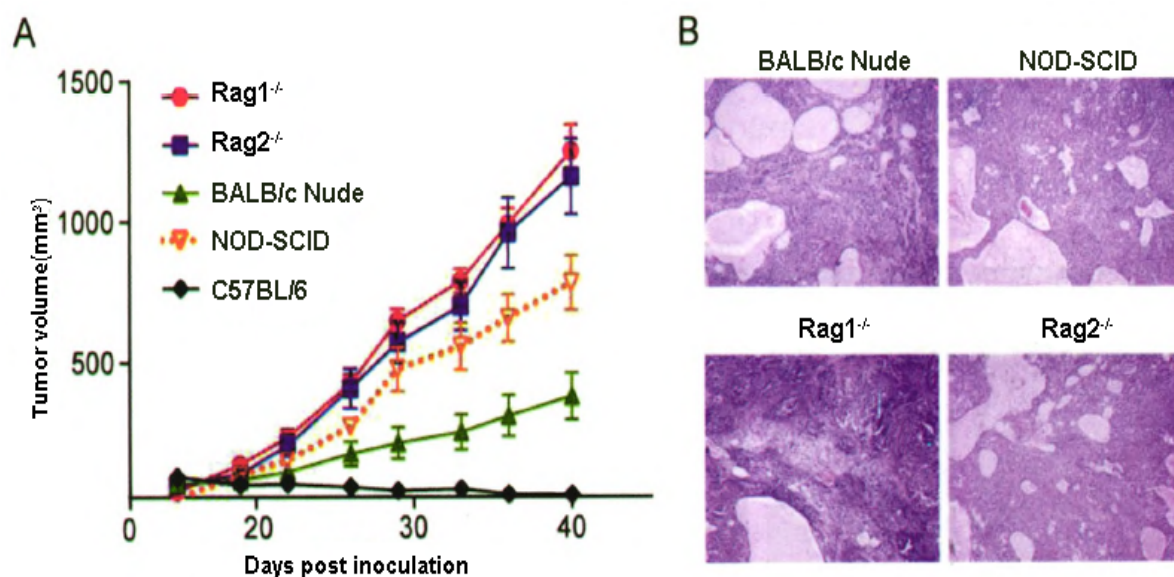


Fig.7 Tumorigenicity results following inoculation with A549 tumor cells in Balb/c nude, NOD-Scid, Rag1-KO and Rag2-KO mice.

Table1. Complete blood count of Rag1-KO (Rag1-EGFP) mice

Parameter	Units	Rag1-KO; Male	Rag1-KO; Female
		8-10 weeks; n=10	8-10 weeks; n=10
WBC	10 ³ cells/ μ L	2.16 \pm 0.44	0.76 \pm 0.24
RBC	10 ⁶ cells/ μ L	9.69 \pm 0.09	10.13 \pm 0.09
HGB	g/dL	14.34 \pm 0.13	15.10 \pm 0.12
HCT	%	46.78 \pm 0.37	48.36 \pm 0.20
MCV	fL	48.27 \pm 0.28	47.76 \pm 0.31
MCH	pg	14.81 \pm 0.08	14.90 \pm 0.03
MCHC	g/dL	30.67 \pm 0.10	31.23 \pm 0.17
PLT	10 ⁶ cells/ μ L	2252.00 \pm 70.30	1573.78 \pm 77.11
RDW-SD	fL	32.10 \pm 0.49	29.20 \pm 0.23
RDW-CV	%	21.42 \pm 0.21	20.57 \pm 0.17
PDW	fL	7.47 \pm 0.11	7.37 \pm 0.13
MPV	fL	6.79 \pm 0.08	6.66 \pm 0.08
P-LCR	%	5.22 \pm 0.31	4.67 \pm 0.33
PCT	%	1.53 \pm 0.05	1.05 \pm 0.06
NEUT#	10 ³ cells/ μ L	1.28 \pm 0.33	0.32 \pm 0.09
LYMPH#	10 ³ cells/ μ L	0.57 \pm 0.06	0.34 \pm 0.12
MONO#	10 ³ cells/ μ L	0.27 \pm 0.09	0.08 \pm 0.03
EO#	10 ³ cells/ μ L	0.02 \pm 0.00	0.01 \pm 0.01
BASO#	10 ³ cells/ μ L	0.02 \pm 0.01	0.01 \pm 0.01
NEUT%	%	54.72 \pm 4.84	46.99 \pm 5.04
LYMPH%	%	32.15 \pm 4.90	42.13 \pm 5.31
MONO%	%	11.24 \pm 1.19	8.79 \pm 1.27
EO%(%)	%	0.98 \pm 0.19	1.31 \pm 0.53
BASO%	%	0.91 \pm 0.51	0.78 \pm 0.39
RET#	10 ⁶ cells/ μ L	0.50 \pm 0.01	0.53 \pm 0.03
RET%	%	5.19 \pm 0.10	5.25 \pm 0.33
LFR(%)	%	42.78 \pm 0.95	42.93 \pm 1.28
MFR(%)	%	24.65 \pm 0.66	25.69 \pm 0.52
HFR(%)	%	32.57 \pm 1.49	31.38 \pm 1.25
IRF(%)	%	57.22 \pm 0.95	57.07 \pm 1.28

Table 2. Serum biochemical analysis of Rag1-KO (Rag1-EGFP) mice.

Parameter	Units	Rag1-KO; Male	Rag1-KO; Female
		8-10 weeks; n=10	8-10 weeks; n=10
TP	g/L	54.00±1.25	57.11±1.65
ALB	g/L	25.50±0.50	27.17±1.11
ALP	U/L	469.00±13.76	806.78±15.20
ALT	U/L	69.50±8.31	44.17±16.91
AST	U/L	191.00±36.25	223.06±62.00
T-BIL	μmol/L	1.62±0.15	1.76±0.66
D-BIL	μmol/L	1.78±0.28	7.65±4.93
CHE	U/L	4143.50±148.13	6539.22±205.63
CRE	μmol/L	20.97±0.66	21.77±1.31
BUN	mmol/L	10.10±0.44	8.17±0.61
UA	μmol/L	311.60±41.33	120.06±5.81
TCHO	mmol/L	2.93±0.07	2.44±0.11
TG	mmol/L	1.04±0.06	0.39±0.05
HDL	mmol/L	2.62±0.11	2.12±0.22
LDL	mmol/L	1.92±0.03	2.25±0.16
NEFA	mmol/L	0.70±0.05	0.78±0.14
LDH	U/L	702.50±99.53	813.67±272.32
CK	U/L	1107.50±464.45	1915.67±500.47
Hcy	μmol/L	11.45±0.98	13.78±0.88
GLU	mmol/L	16.94±0.87	9.49±0.60
Ca	mmol/L	3.18±0.05	2.79±0.05
IP	mmol/L	4.20±0.13	3.31±0.11
Fe	μmol/L	38.35±1.20	36.66±2.64
CRP	mg/L	0.46±0.26	0.27±0.16

发表文献