Rag1-KO

品系名称：C57BL/6J-Mqm-Rag1^{em1-KO}/Mqm

产品编号：M010130

小鼠背景：C57BL/6JMqm

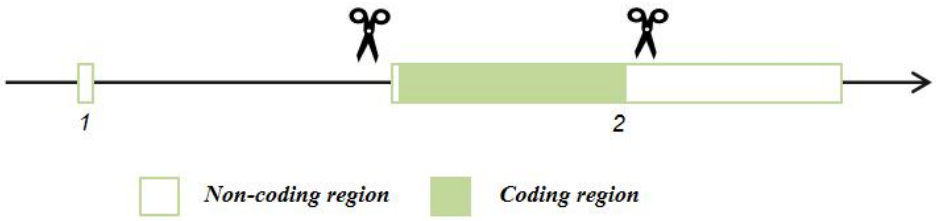
品系描述：

重组激活蛋白 1(recombination activating 1, Rag1)是 RAG 复合体(RAG1 和 RAG2 组成的异源四聚体)的一部分，参与 V(D)J 重组过程。Rag1 负责将 DNA 与保守的重组信号序列(RSS) 结合，并通过在 RSS 与相邻编码片段之间引入双链断裂来催化 DNA 切割。

Rag1 基因缺失，V(D)J 重组过程无法启动，导致 T 细胞和 B 细胞在发育早期阶段停滞，无法分化成熟，小鼠体内缺乏成熟的 T 细胞和 B 细胞。

鸣谦采用基因编辑技术，将 Rag1 基因编码区全部敲除破坏基因活性。数据显示，Rag1-KO 纯合小鼠中缺少 T 细胞和 B 细胞。

品系策略：



验证数据

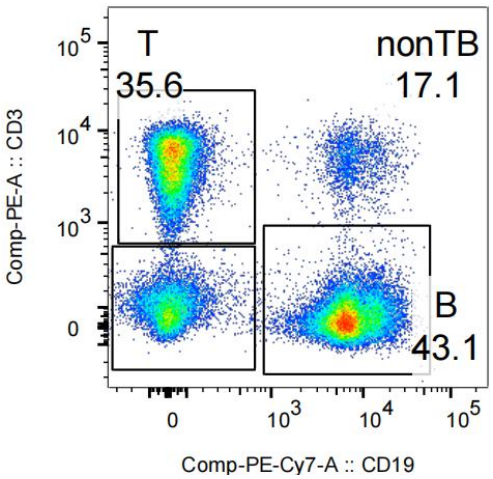
➢ 外周血、脾脏、胸腺中 T、B、NK 细胞流式检测

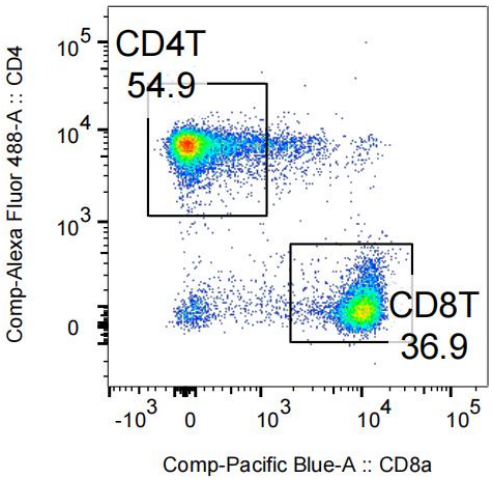
取 Rag1-KO 纯合小鼠(Homozygote)和野生型小鼠(Wild type)的外周血、脾脏、胸腺，对 T、B、NK 细胞进行流式检测。

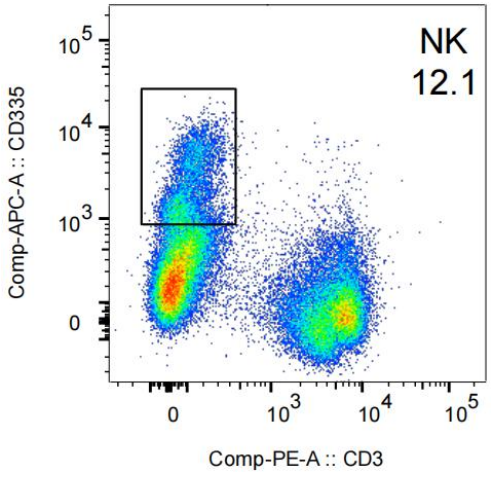
与野生型小鼠相比，Rag1-KO 纯合小鼠外周血、脾脏、胸腺的 T 细胞和 B 细胞几乎完全缺失，NK 细胞代偿性升高。

Peripheral Blood

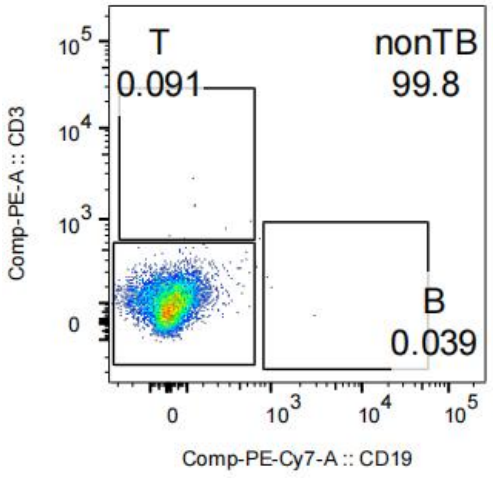
Wild type

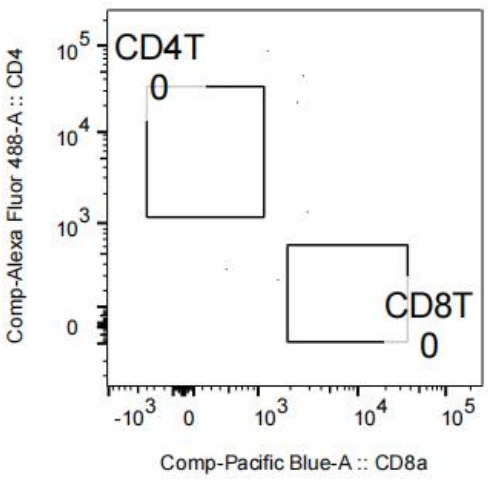


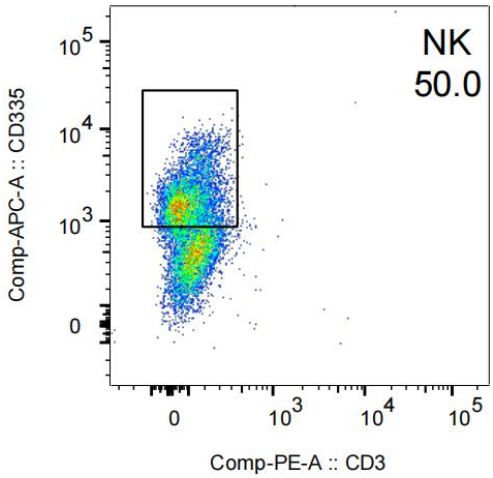




Homozygote



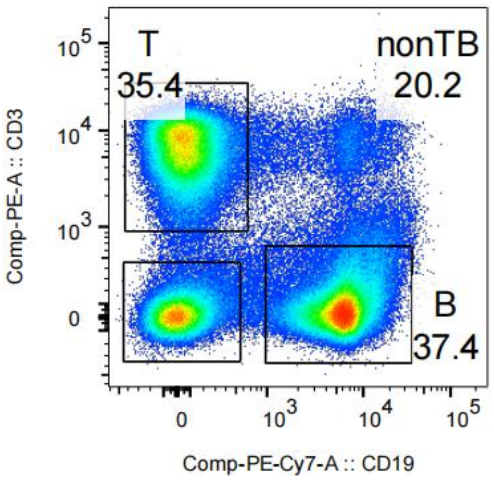


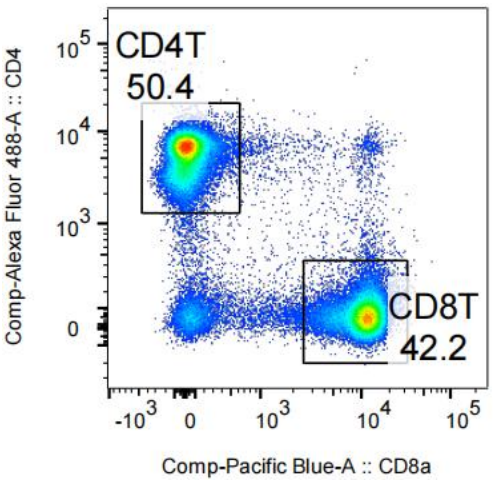


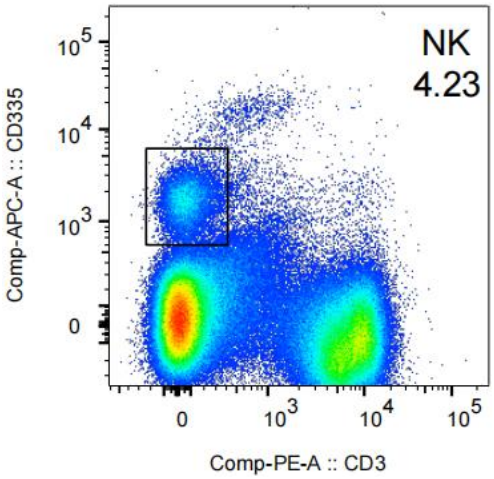
创制更接近表达人类疾病的模式动物，让创新药研发更有效

Spleen

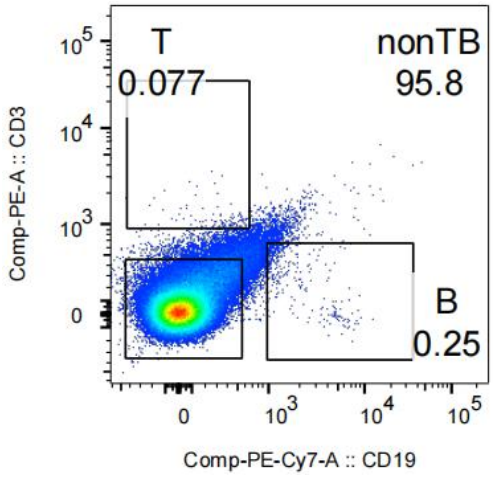
Wild type

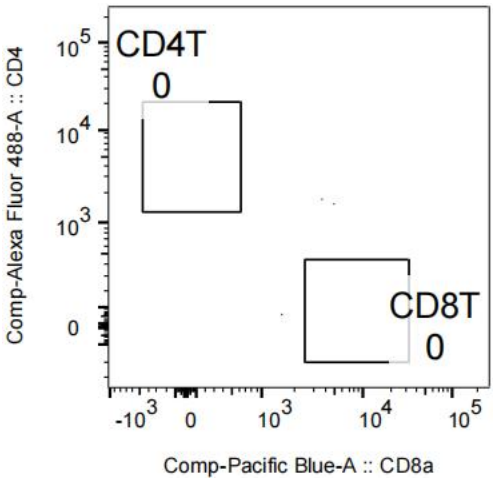


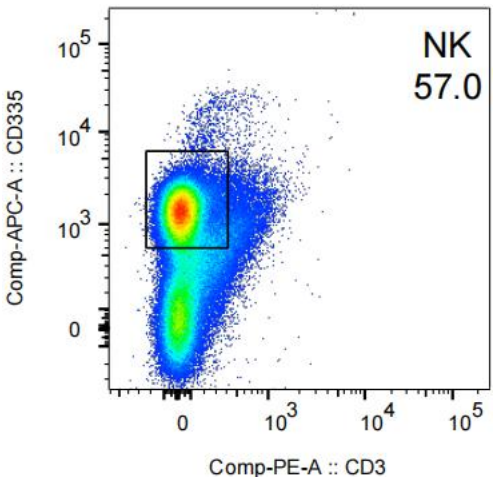




Homozygote



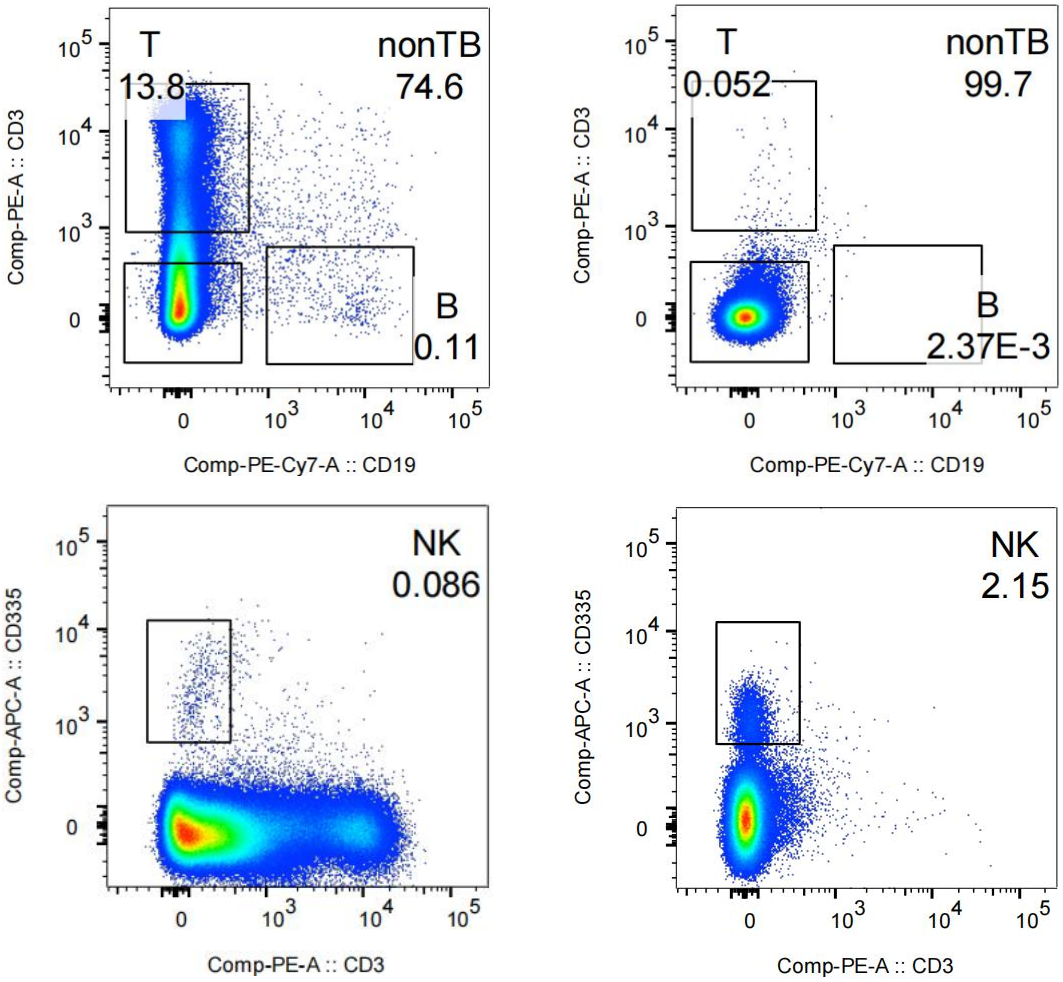




创制更接近表达人类疾病的模式动物，让创新药研发更有效

Thymus

Wild type **Homozygote**



应用领域

1. 免疫缺陷
2. 肿瘤移植
3. 药效评价

参考文献

[1] The RAG1 N-terminal region regulates the efficiency and pathways of synapsis for V(D)J recombination. 2021 Aug 17;218(10):e20210250.

[2] Mutational analysis of RAG1 and RAG2 identifies three catalytic amino acids in RAG1 critical for both cleavage steps of V(D)J recombination. 1999 Dec 1;13(23):3059 – 3069.