

B6-Myd88-KO

Strain Name: B6/JGpt-Myd88^{em1Cd511}/Gpt

Strain type: Knock-out

Strain number: T003613

Background: C57BL/6JGpt

Description

Myeloid differentiation factor 88 (Myd88) is an important linker protein in IL-1 receptor (IL-1R) and Toll-like receptor (TLR) signal transduction pathway, located in the cytoplasm and belongs to IL-1R/TLR superfamily members. The MyD88 gene is mainly expressed in immune cells such as monocyte cell line, thymocyte cell line, T cell line, B cell line, Th1 cell line, and Th2 cell line.

Myd88 is a cytosolic soluble protein with three functional regions, including the N-terminal death domain (DD), the intermediate region and the C-terminal TIR domain. The DD region is approximately 90 amino acids and can mediate the interaction between proteins and proteins containing DD sequences. The TIR region is similar to the cytoplasmic region of the IL-1 receptor, with approximately 130 amino acids, transmitting signal by recruitment of connexins.

GemPharmatech knocked out the Myd88 gene Exon4 and Exon5 by gene editing technology on C57BL/6J background. The immune system, hematopoietic system and molecular signaling of B6-Myd88-KO mice were abnormal, and it increased the susceptibility to bacteria and viruses. The validated B6-Myd88-KO mice can be used as animal models related to tumor, immunity, inflammation and cell research.

Strategy

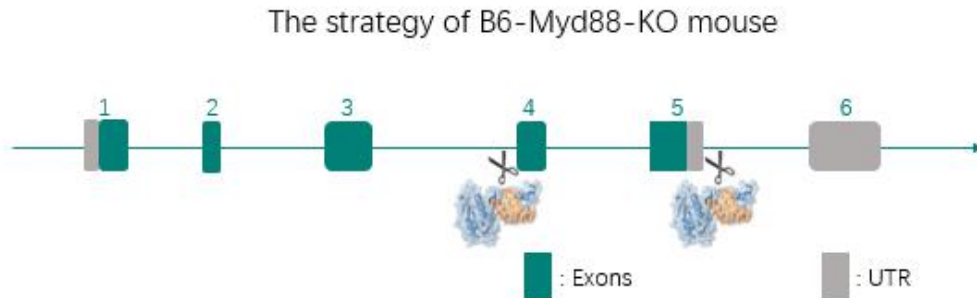


Fig.1 The strategy of B6-Myd88-KO mouse.

Application

1. Apoptosis related research.
2. Cell Biology and Developmental Biology Research.
3. Immunology, inflammation and autoimmune research.
4. Infectious disease research.

Data support

1、 MYD88 Protein detection

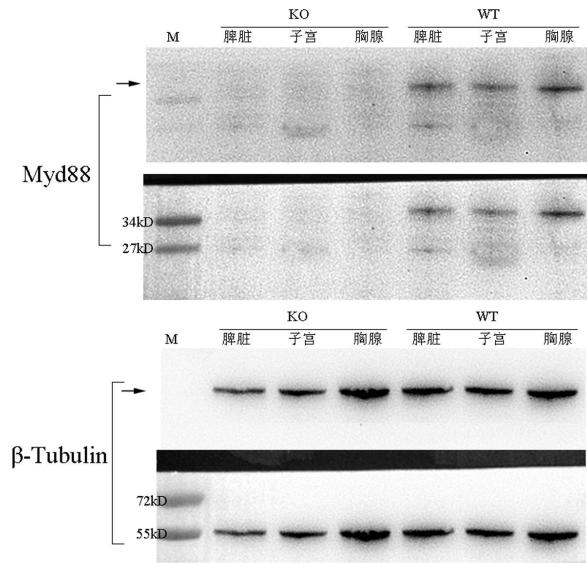


Fig.2 Detection of MYD88.

Western Blot confirmed that MYD88 protein was not expressed in the spleen, thymus and uterus tissues of B6-Myd88-KO mice..

2、 The T/B/NK cell ratio detection

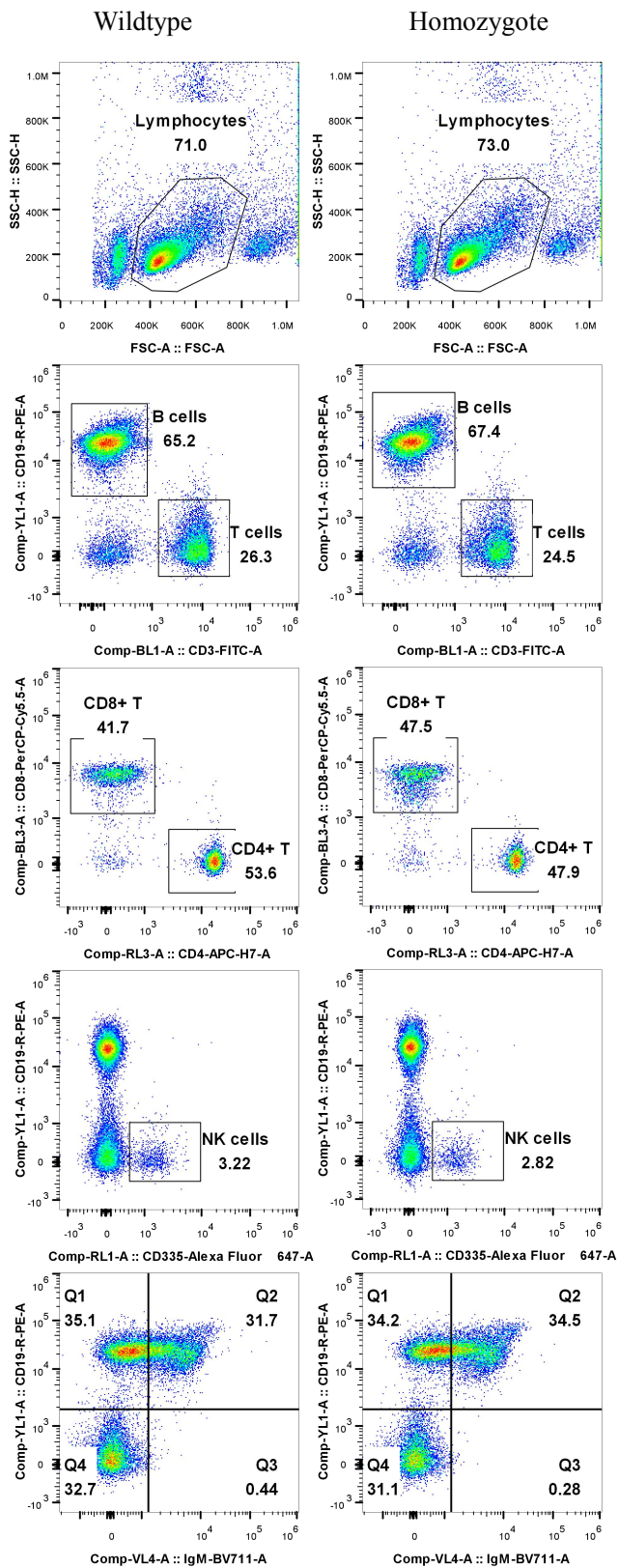


Fig.3 Detection the T/B/NK cell ratio in B6-Myd88-KO mice.

The proportion of T/B/NK cells in B6-Myd88-KO and wild-type mice was basically the same.

References

1. Warner, Neil, and Gabriel Núñez. "MyD88: a critical adaptor protein in innate immunity signal transduction." *The Journal of Immunology* 190.1 (2013): 3-4.
2. Fitzgerald, Katherine A., and Zhijian J. Chen. "Sorting out Toll signals." *Cell* 125.5 (2006): 834-836.
3. Burns, Kimberly, et al. "MyD88, an adapter protein involved in interleukin-1 signaling." *Journal of biological chemistry* 273.20 (1998): 12203-12209.
4. Coady, Alison, and Anita Sil. "MyD88-dependent signaling drives host survival and early cytokine production during *Histoplasma capsulatum* infection." *Infection and immunity* 83.4 (2015): 1265-1275.
5. Bates, John T., et al. "Enhanced antigen processing of flagellin fusion proteins promotes the antigen-specific CD8⁺ T cell response independently of TLR5 and MyD88." *The Journal of Immunology* 186.11 (2011): 6255-6262.
6. Nagarajan, Uma M., et al. "MyD88 deficiency leads to decreased NK cell gamma interferon production and T cell recruitment during *Chlamydia muridarum* genital tract infection, but a predominant Th1 response and enhanced monocytic inflammation are associated with infection resolution." *Infection and immunity* 79.1 (2011): 486-498.
7. Zhou, Xiaohong, et al. "Role of MyD88 in adenovirus keratitis." *Immunology and cell biology* 95.1 (2017): 108-116.
8. Adachi, Osamu, et al. "Targeted disruption of the MyD88 gene results in loss of IL-1-and IL-18-mediated function." *Immunity* 9.1 (1998): 143-150.

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