

## Cd38-KO

**Strain Name:** C57BL/6JGpt-*Cd38<sup>em7Cd3087</sup>*/Gpt

**Strain Type:** Knock-out

**Strain ID:** T011481

**Background:** [N000013] C57BL/6JGpt

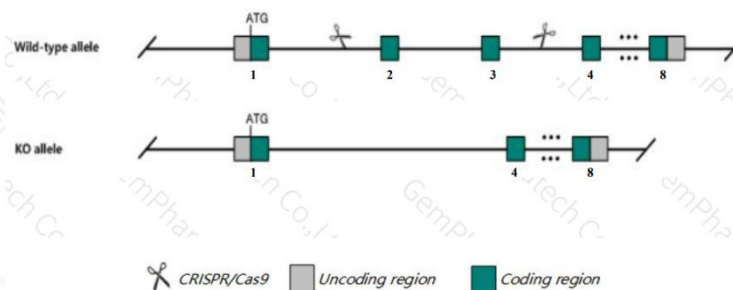
### Description

CD38 antigen, encoded by the *Cd38* gene, is a molecule that can act as an enzyme with NAD-depleting and intracellular signaling activity, or as a receptor with adhesive functions. CD38 functions as the main hydrolase of cellular Nicotinamide dinucleotide (NAD), and is widely expressed in multiple tissues [1]. Numerous studies have shown that CD38 is involved in the pathological processes of many diseases including aging, obesity, cardiovascular diseases, cancer, and inflammation [2-3]. Therefore, CD38 may serve as a pharmacological target for multiple conditions.

Cd38-KO strain is created under the C57BL/6JGpt background (strain number T011481) in Gempharmatech. Expression of CD38 protein is absent in the kidney, liver and spleen tissues of Cd38-KO homozygous mice. Therefore, Cd38-KO strain is an ideal model for researching on deficiency of CD38 protein.

The Cd38-KO strain (T011481) was created by GemPharmatech using CRISPR/Cas9 technology whereby a deficiency in mice *Cd38* with the knockout of exon 2 ~ exon 3.

### Strategy



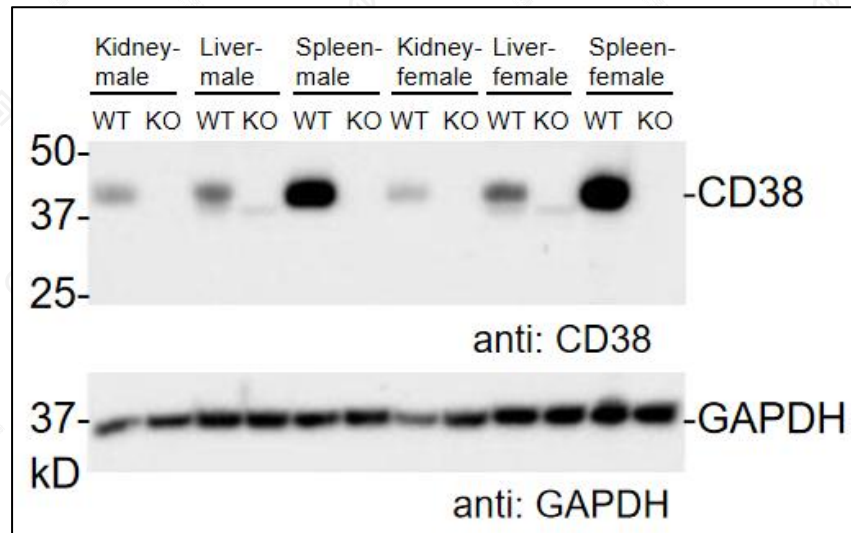
**Fig 1. Schematic diagram of Cd38-KO model strategy.**

### Applications

## 1. Research related to deficiency of CD38 protein.

### Data support

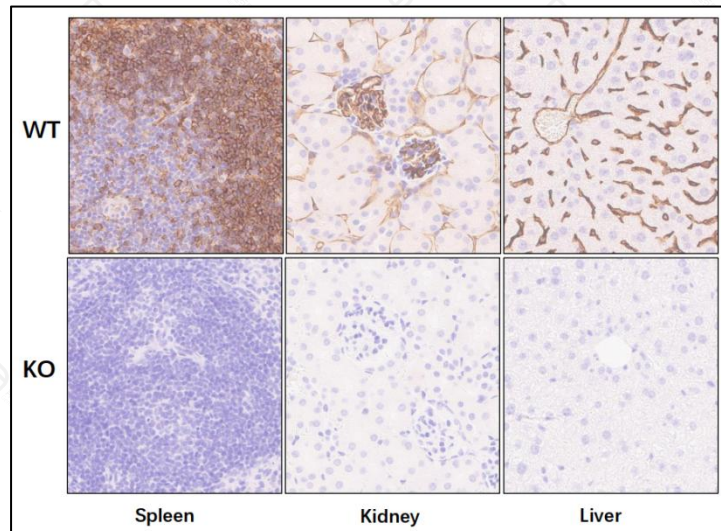
#### 1. Determination of CD38 protein expression



**Fig 2. Protein expression of CD38 in mouse kidney, liver and spleen.**

Protein expression of CD38 in kidney, liver and spleen tissues was determined by Western Blot using specific antibody (Abcam, ab216343). WT: C57BL/6JGpt wildtype mice and KO: Cd38-KO homozygous mice. (Data source: Abcam collaborative verification).

#### 2. IHC analysis of CD38



**Fig 3. Representative IHC results of CD38 expression in mouse kidney, liver and spleen.**

IHC analysis of CD38 in kidney, liver and spleen tissues using specific antibody (Abcam, ab216343). WT: C57BL/6JGpt wildtype mice and KO: Cd38-KO homozygous mice. (Data source: Abcam collaborative verification).

## References

1. Chini E.N. "CD38 as a regulator of cellular NAD: a novel potential pharmacological target for metabolic conditions." *Curr Pharm Des.* 2009;15(1):57-63.
2. Chini E.N., et al. "The Pharmacology of CD38/NADase: An Emerging Target in Cancer and Diseases of Aging." *Trends Pharmacol. Sci.* 2018;39:424-436.
3. Piedra-Quintero Z.L., et al. "CD38: An Immunomodulatory Molecule in Inflammation and Autoimmunity." *Front Immunol.* 2020;11:597959.