CD38 Recombinant Antibody [PD01-49] - Mouse IgG1 (Chimeric)

HA601554

Product Type:	Recombinant Chimeric Antibody, primary antibodies
Species reactivity:	Human
Applications:	WB, IHC-P, FC
Molecular Wt:	Predicted band size: 34 kDa
Clone number:	PD01-49

Description: CD38 (cluster of differentiation 38), also known as cyclic ADP ribose hydrolase is a glycoprotein found on the surface of many immune cells (white blood cells), including CD4+, CD8+, B lymphocytes and natural killer cells. CD38 also functions in cell adhesion, signal transduction and calcium signaling. CD38 can function either as a receptor or as an enzyme. As a receptor, CD38 can attach to CD31 on the surface of T cells, thereby activating those cells to produce a variety of cytokines. CD38 is a multifunctional enzyme that catalyzes the synthesis of ADP ribose (ADPR) (97%) and cyclic ADP-ribose (cADPR) (3%) from NAD+. CD38 is thought to be a major regulator of NAD+ levels, its NADase activity is much higher than its function as an ADP-rybosyl-cyclase: for every 100 molecules of NAD+ converted to ADP ribose it generates one molecule of cADPR. When nicotinic acid is present under acidic conditions, CD38 can hydrolyze nicotinamide adenine dinucleotide phosphate (NADP+) to NAADP. These reaction products are essential for the regulation of intracellular Ca2+. CD38 occurs not only as an ectoenzyme on cell outer surfaces, but also occurs on the inner surface of cell membranes, facing the cytosol performing the same enzymatic functions. CD38 is believed to control or influence neurotransmitter release in the brain by producing cADPR. CD38 within the brain enables release of the affiliative neuropeptide oxytocin. Like CD38, CD157 is a member of the ADP-ribosyl cyclase family of enzymes that catalyze the formation of cADPR from NAD+, although CD157 is a much weaker catalyst than CD38. The SARM1 enzyme also catalyzes the formation of cADPR from NAD+, but SARM1 elevates cADPR much more efficiently than CD38.

Immunogen:	Synthetic peptide within human CD38 aa 250-300.
Positive control:	THP-1 cell lysate, Raji cell lysate, human spleen tissue, human tonsil tissue, Raji.
Subcellular location:	Membrane.
Database links:	SwissProt: P28907 Human
Recommended Dilutions:	
WB	1:2,000-1:5,000
IHC-P	1:30,000
FC	1:1,000
Storage Buffer:	PBS (pH7.4), 0.1% BSA, 40% Glycerol. Preservative: 0.05% Sodium Azide.
Storage Instruction:	Shipped at 4℃. Store at +4℃ short term (1-2 weeks). It is recommended to aliquot into single-use upon delivery. Store at -20℃ long term.
Purity:	Protein A affinity purified.

Images

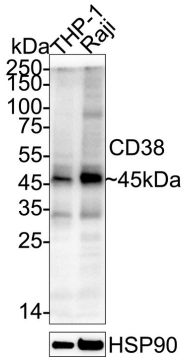

Fig1: Western blot analysis of CD38 on different lysates with Mouse anti-CD38 antibody (HA601554) at 1/5,000 dilution.

Lane 1: THP-1 cell lysate
Lane 2: Raji cell lysate

Lysates/proteins at 20 µg/Lane.

Predicted band size: 34 kDa
Observed band size: 45 kDa

Exposure time: 3 minutes; ECL: K1802;

4-20% SDS-PAGE gel.

Proteins were transferred to a PVDF membrane and blocked with 5% NFDM/TBST for 1 hour at room temperature. The primary antibody (HA601554) at 1/5,000 dilution was used in primary antibody dilution (K1803) at 4℃ overnight. Goat Anti-Mouse IgG - HRP Secondary Antibody (HA1006) at 1/50,000 dilution was used for 1 hour at room temperature.

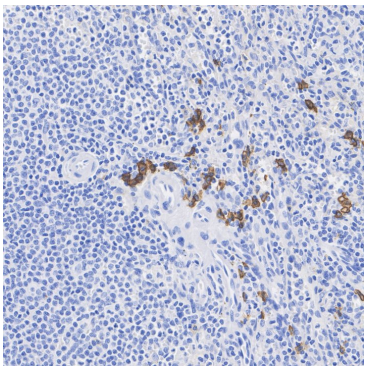

Fig2: Immunohistochemical analysis of paraffin-embedded human spleen tissue with Mouse anti-CD38 antibody (HA601554) at 1/30,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA601554) at 1/30,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

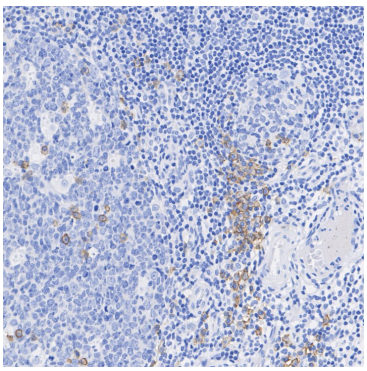

Fig3: Immunohistochemical analysis of paraffin-embedded human tonsil tissue with Mouse anti-CD38 antibody (HA601554) at 1/30,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA601554) at 1/30,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

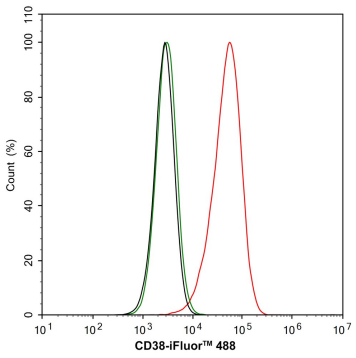

Fig4: Flow cytometric analysis of Raji cells labeling CD38.

Cells were washed twice with cold PBS and resuspend. Then stained with the primary antibody (HA601554, 1/1,000) (red) compared with Mouse IgG Isotype Control (green). After incubation of the primary antibody at +4℃ for an hour, the cells were stained with a iFluor™ 488 conjugate-Goat anti-Mouse IgG Secondary antibody (HA1125) at 1/1,000 dilution for 30 minutes at +4℃. Unlabelled sample was used as a control (cells without incubation with primary antibody; black).

Note: All products are "FOR RESEARCH USE ONLY AND ARE NOT INTENDED FOR DIAGNOSTIC OR THERAPEUTIC USE".

Background References

1. Guerreiro S et al. CD38 in Neurodegeneration and Neuroinflammation. Cells. 2020 Feb
2. Piedra-Quintero ZL et al. CD38: An Immunomodulatory Molecule in Inflammation and Autoimmunity. Front Immunol. 2020 Nov