

## **α-CD38 Antibody**

**(Rabbit; Polyclonal; Affinity Purified)**

**Catalog Number:** CDA-322

**Lot Number:**

**Quantity:** 100 µg

**Source:** CD38 Antibody is an affinity purified rabbit polyclonal antibody raised against a purified recombinant protein consisting of the carboxyl terminal of human CD38.

**Reconstitution:** Reconstitute lyophilized CD38 antibody in 100 µL diH<sub>2</sub>O.

**Concentration:** 1.0 mg/mL after reconstitution.

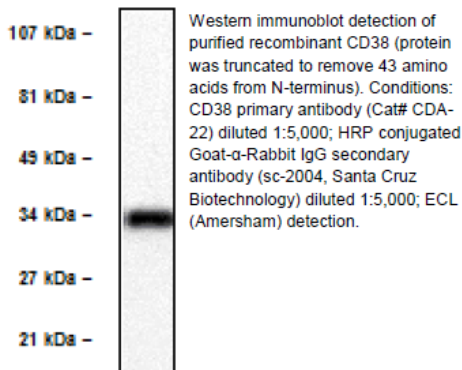
**Purity & Sterility:** CD38 antibody has been shown to be >95% pure by SDS-PAGE. CD38 antibody is provided as a non-sterile sample. The product may be rendered sterile by 0.22 µm filtration after reconstitution.

**Note: This product is for research use only. Not for use in clinical or diagnostic procedures.**

**Specificity:** CD38 antibody reacts specifically with CD38 by Western Blotting. Recommended dilution range for Western analysis: 1:1,000 – 1:10,000. Recommended starting dilution: 1:5,000.

**Storage & Handling:** CD38 antibody is shipped at ambient temperature. This product is stable for at least 1 year following receipt. Store at 4°C. **Do Not Freeze!**

**Background:** CD38 is a 45-kDa type II transmembrane glycoprotein that is found in various mammalian tissues and cell types and is capable of converting NAD<sup>+</sup> into cyclic ADP-ribose (cADPR). This ability is due to the ADP-ribosyl cyclase activity found on the extracellular carboxyl domain of the enzyme. The product, cADPR, possesses calcium mobilizing activity independent of inositol 1,4,5-trisphosphate (IP<sub>3</sub>). In addition to cyclizing NAD<sup>+</sup> to cADPR, CD38 also utilizes NADP<sup>+</sup> as a substrate and catalyze the exchange of its nicotinamide group with nicotinic acid to produce nicotinic acid adenine dinucleotide phosphate (NAADP), another potent calcium mobilizing metabolite. CD38 is expressed on activated B and T lymphocytes, NK cells, thymocytes, pre-B cells,



germinal center B cells, mitogen- activated T cells, monocytes, Ig-secreting plasma cells and erythrocytes. CD38 is widely used as a marker for B and T lymphocytes activation and differentiation. In addition, CD38 is expressed in myriad cell types of important organs including the liver, eye, spleen and brain. In addition to the role of its metabolites in mobilizing intracellular calcium, CD38 is believed to be playing important immunoregulatory roles including the induction of B and T cells proliferation, regulation of B-cell lymphopoiesis, apoptosis, protein phosphorylation, activation of certain kinases and cytokine release.

## References:

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- 2) Howard M, Grimaldi JC, Bazan JF, Lund FE, Santos-Argumedo L, Parkhouse RM, Walseth TF and Lee HC (1993) Formation and hydrolysis of cyclic ADP-ribose catalyzed by lymphocyte antigen CD38. *Science* 262 1056-1059.
- 3) Khoo KM and Chang CF (1999) Characterization and localization of CD38 in the vertebrate eye. *Brain Res* 821 17-25.
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- 5) Khoo KM and Chang CF (2002) Identification and characterization of nuclear CD38 in the rat spleen. *Int J Biochem Cell Biol* 34 43-54.
- 6) Kirkham PA, Santos-Argumedo L, Harnett MM and Parkhouse RM (1994) Murine B-cell activation via CD38 and protein tyrosine phosphorylation. *Immunology* 83 513-516.
- 7) Lee HC, Graeff RM and Walseth TF (1997) ADP-ribosyl cyclase and CD38. Multi-functional enzymes in Ca<sup>2+</sup> signaling. *Adv Exp Med Biol* 419 411-419.
- 8) Mehta K, Shahid U and Malavasi F (1996) Human CD38, a cell-surface protein with multiple functions. *FASEB J* 10 1408-1417.
- 9) Zupo S, Rugari E, Dono M, Tadorelli G, Malavasi F and Ferrarini M (1994) CD38 signaling by agonistic monoclonal antibody prevents apoptosis of human germinal center B cells. *Eur J Immunol* 24 1218-1222.

