SANTA CRUZ BIOTECHNOLOGY, INC.

CD38 (N-17): sc-7048

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

CD38 is a type II integral membrane glycoprotein which is present on early B and T cell lineages and activated B and T cells but is absent from most mature resting peripheral lymphocytes. CD38 is also found on thymocytes, pre-B cells, germinal center B cells, mitogen-activated T cells, monocytes and Ig-secreting plasma cells. CD38 acts as a NAD glycohydrolase in T lymphocytes. On hematopoietic cells CD38 induces activation, proliferation, and differentiation of mature T and B cells and mediates apoptosis of myeloid and lymphoid progenitor cells. In addition to acting as a signaling receptor, CD38 is also an enzyme capable of producing several calcium-mobilizing metabolites, including cyclic adenosine diphosphate ribose (cADPR). CD38 also plays a role in maintaining survival of an invariant NK T (iNKT) cell subset that preferentially contributes to the maintenance of immunological tolerance.

REFERENCES

1. Alessio, M., et al. 1990. CD38 molecule: structural and biochemical analysis on human T lymphocytes, thymocytes, and plasma cells. J. Immunol. 145: 878-884.
2. Harada, N., et al. 1993. Expression cloning of a cDNA encoding a novel murine B cell activation marker. Homology to human CD38. J. Immunol. 151: 3111-3118.
3. Santos-Argumedo, L., et al. 1993. A B lymphocyte surface molecule mediating activation and protection from apoptosis via calcium channels. J. Immunol. 151: 3119-3130.
4. Howard, M., et al. 1993. Formation and hydrolysis of cyclic ADP-ribose catalyzed by lymphocyte antigen CD38. Science 262: 1056-1059.
5. Kirkham, P.A., et al. 1995. Murine B-cell activation via CD38 and protein tyrosine phosphorylation. Immunology 83: 513-516.
6. Bean, A.G., et al. 1995. CD38 expression on mouse T cells: CD38 defines functionally distinct subsets of α β TCR+CD4-CD8- thymocytes. Int. immunol. 7: 213-221.

CHROMOSOMAL LOCATION

Genetic locus: CD38 (human) mapping to 4p15.32.

SOURCE

CD38 (N-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of CD38 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-7048 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

CD38 (N-17) is recommended for detection of CD38 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for CD38 siRNA (h): sc-29996, CD38 shRNA Plasmid (h): sc-29996-SH and CD38 shRNA (h) Lentiviral Particles: sc-29996-V.

Molecular Weight of CD38: 45 kDa.

Positive Controls: CCRF-CEM cell lysate: sc-2225, THP-1 cell lysate: sc-2238 or HuT 78 whole cell lysate: sc-2208.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Bacher, I., et al. 2004. Channelling of substrate promiscuity of the skeletal-muscle ADP-ribosyl cyclase isoform. Biochem. J. 381: 147-154.
2. Barata, H., et al. 2004. The role of cyclic-ADP-ribose-signaling pathway in oxytocin-induced Ca^{2+} transients in human myometrium cells. Endocrinology 145: 881-889.
3. Thompson, M., et al. 2004. Role of CD38 in myometrial Ca^{2+} transients: modulation by progesterone. Am. J. Physiol. Encrinol. Metab. 287: E1142-E1148.
4. Yue, J., et al. 2009. CD38/cADPR/Ca^{2+} pathway promotes cell proliferation and delays nerve growth factor-induced differentiation in PC12 cells. J. Biol. Chem. 284: 29335-29342.
5. Bhargavan, B., et al. 2012. LEDGF gene silencing impairs the tumorigenicity of prostate cancer DU145 cells by abating the expression of Hsp27 and activation of the Akt/ERK signaling pathway. Cell Death Dis. 3: e316.

RESEARCH USE

For research use only, not for use in diagnostic procedures.