

# CD38 (AT13/5): sc-59028

## 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

CD38 (AT13/5) is a mouse monoclonal antibody raised against NAMALWA Burkitt's lymphoma cell line of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CD38 (AT13/5) is available conjugated to agarose (sc-59028 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-59028 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-59028 PE), fluorescein (sc-59028 FITC), Alexa Fluor® 488 (sc-59028 AF488), Alexa Fluor® 546 (sc-59028 AF546), Alexa Fluor® 594 (sc-59028 AF594) or Alexa Fluor® 647 (sc-59028 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-59028 AF680) or Alexa Fluor® 790 (sc-59028 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## RESEARCH USE

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

## APPLICATIONS

CD38 (AT13/5) is recommended for detection of CD38 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10<sup>6</sup> cells).

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.

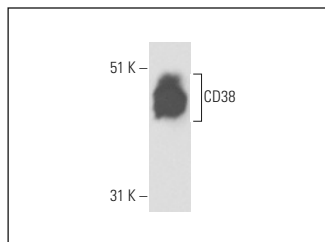
Molecular Weight of CD38: 45 kDa.

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

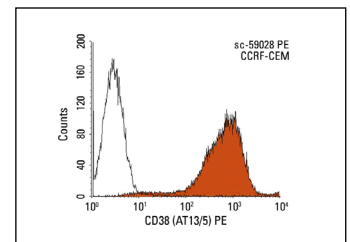
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



CD38 (AT13/5): sc-59028. Western blot analysis of CD38 expression in CCRF-CEM whole cell lysate under non-reducing conditions.



CD38 (AT13/5): sc-59028. Indirect FCM analysis of CCRF-CEM stained with CD38 (AT13/5), followed by PE-conjugated goat anti-mouse IgG<sub>1</sub>: sc-3764. Black line histogram represents the isotype control, normal mouse IgG<sub>1</sub>: sc-3877.

## SELECT PRODUCT CITATIONS

1. Vaisitti, T., et al. 2010. CD38 increases CXCL12-mediated signals and homing of chronic lymphocytic leukemia cells. *Leukemia* 24: 958-969.
2. Zhu, C., et al. 2020. Isatuximab acts through Fc-dependent, independent, and direct pathways to kill multiple myeloma cells. *Front. Immunol.* 11: 1771.

## STORAGE

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