

# CD39 (BU61): sc-65262

## BACKGROUND

CD39, also known as ectonucleoside triphosphate diphosphohydrolase 1 (ENP1), is an integral membrane glycoprotein that acts as an extracellular nucleotide-hydrolyzing enzyme. CD39 inhibits ADP-induced platelet aggregation by hydrolyzing ADP to AMP, and ultimately generating Adenosine. Intracellular CD39 undergoes glycosylation at six N-glycosylation sites and translocates to the membrane in order to be an active enzyme. Alternative splicing gives rise to three CD39 isoforms, vascular, placenta I and placenta II. The placenta I isoform differs at the amino terminus whereas the placenta II isoform is missing amino acids 300-510 at the C-terminus. CD39 is expressed in vascular tissues including placenta, lung, skeletal muscle and kidney, as well as endothelium, smooth muscle, cardiac cells, lymphocytes, such as activated B cells, activated NK cells, macrophages, Dendritic cells and platelets. CD39 may be used as an anti-thrombic agent for pre-treating patients at risk for coronary artery occlusion and thrombic stroke.

## REFERENCES

1. Kansas, G.S., Wood, G.S. and Tedder, T.F. 1991. Expression, distribution and biochemistry of human CD39. Role in activation-associated homotypic adhesion of lymphocytes. *J. Immunol.* 146: 2235-2244.
2. Kaczmarek, E., Koziak, K., Seigny, J., Siegel, J.B., Anrather, J., Beaudoin, A.R., Bach, F.H. and Robson, S.C. 1996. Identification and characterization of CD39/vascular ATP diphosphohydrolase. *J. Biol. Chem.* 271: 33116-33122.
3. Marcus, A.J., Broekman, M.J., Drosopoulos, J.H., Pinsky, D.J., Islam, N. and Maliszewski, C.R. 2001. Inhibition of platelet recruitment by endothelial cell CD39/ecto-ADPase: significance for occlusive vascular diseases. *Ital. Heart J.* 2: 824-830.
4. Zhong, X., Malhotra, R., Woodruff, R. and Guidotti, G. 2001. Mammalian plasma membrane ecto-nucleoside triphosphate diphosphohydrolase 1, CD39, is not active intracellularly. *J. Biol. Chem.* 276: 41518-41525.
5. Kittel, A., Garrido, M. and Varga, G. 2002. Localization of NTPDase1/CD39 in normal and transformed human pancreas. *J. Histochem. Cytochem.* 50: 549-556.
6. SWISS-PROT/TrEMBL (P49961). World Wide Web URL: <http://www.expasy.ch/sprot/sprot-top.html>

## CHROMOSOMAL LOCATION

Genetic locus: ENTPD1 (human) mapping to 10q24.1.

## SOURCE

CD39 (BU61) is a mouse monoclonal antibody raised against Waldenström's macroglobulinemia cell line WM-1 of human origin.

## PRODUCT

Each vial contains 100 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## RESEARCH USE

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

## APPLICATIONS

CD39 (BU61) is recommended for detection of CD39 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).

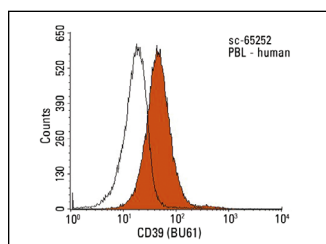
Suitable for use as control antibody for CD39 siRNA (h): sc-42785, CD39 shRNA Plasmid (h): sc-42785-SH and CD39 shRNA (h) Lentiviral Particles: sc-42785-V.

Molecular Weight of CD39: 70-100 kDa.

## 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



CD39 (BU61): sc-65262. Indirect FCM analysis of human peripheral blood leukocytes stained with CD39 (BU61), followed by PE-conjugated goat anti-mouse IgG: sc-3738. Black line histogram represents the isotype control, normal mouse IgG<sub>1</sub>: sc-3877.

## SELECT PRODUCT CITATIONS

1. Stocco, E., Barbon, S., Piccione, M., Belluzzi, E., Petrelli, L., Pozzuoli, A., Ramonda, R., Rossato, M., Favero, M., Ruggieri, P., Porzionato, A., Di Liddo, R., De Caro, R. and Macchi, V. 2019. Infrapatellar fat pad stem cells responsiveness to microenvironment in osteoarthritis: from morphology to function. *Front. Cell Dev. Biol.* 7: 323.

## STORAGE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.