

CD72 (Bu40): sc-80734

BACKGROUND

CD5 has been identified as a transmembrane glycoprotein that is expressed on 70% of normal peripheral blood lymphocytes and on virtually all T lymphocytes in thymus and peripheral blood. Activation of T cells through the T cell receptor (TCR) results in tyrosine phosphorylation of CD5, and the absence of CD5 renders T cells hyper-responsive to TCR-mediated activation. CD5 associates with the TCR/CD3 ζ chain, and with the Src family kinase, Lck p56. The C-type lectin superfamily member CD72 is a cell surface negative regulator of B cell activation from the pro-B through the mature B cell stage. CD72 serves as a receptor for CD5. The ability of lymphocytes to respond to antigenic or mitogenic stimulation utilizes both positive and negative regulatory proteins that influence the threshold for responsiveness. The human CD72 gene maps to chromosome 9p13.3 and encodes a transmembrane glycoprotein that contains an immunoreceptor tyrosine-based inhibition motif (ITIM). Upon tyrosine phosphorylation, the CD72 ITIM recruits SH2-containing phosphatases such as SHP-1, resulting in downregulation of cell activation. CD72^{-/-} mice contain hyperproliferative B cells.

REFERENCES

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- Wu, Y., et al. 1998. The B cell transmembrane protein CD72 binds to and is an *in vivo* substrate of the protein tyrosine phosphatase SHP-1. *Curr. Biol.* 8: 1009-1017.
- Pan, C., et al. 1999. CD72-deficient mice reveal nonredundant roles of CD72 in B cell development and activation. *Immunity* 11: 495-506.
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- Wu, H.J., et al. 2002. Positive and negative roles of CD72 in B cell function. *Immunol. Res.* 25: 155-166.
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CHROMOSOMAL LOCATION

Genetic locus: CD72 (human) mapping to 9p13.3.

SOURCE

CD72 (Bu40) is a mouse monoclonal antibody raised against HFB1 plasmacytoid cell line of human origin.

STORAGE

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

PRODUCT

Each vial contains 200 μ g IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CD72 (Bu40) is available conjugated to either phycoerythrin (sc-80734 PE) or fluorescein (sc-80734 FITC), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM.

APPLICATIONS

CD72 (Bu40) is recommended for detection of CD72 of human origin by immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 μ g per 1 x 10⁶ cells).

Suitable for use as control antibody for CD72 siRNA (h): sc-37250, CD72 shRNA Plasmid (h): sc-37250-SH and CD72 shRNA (h) Lentiviral Particles: sc-37250-V.

Molecular Weight of CD72: 45 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 2) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 3) Immunohistochemistry: use m-IgG κ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

SELECT PRODUCT CITATIONS

- Yoshida, Y., et al. 2015. Semaphorin 4D contributes to rheumatoid arthritis by inducing inflammatory cytokine production: pathogenic and therapeutic implications. *Arthritis Rheumatol.* 67: 1481-1490.
- Xie, J., et al. 2020. Semaphorin 4D induces an imbalance of Th17/Treg cells by activating the Aryl hydrocarbon receptor in ankylosing spondylitis. *Front. Immunol.* 11: 2151.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.