

CD72 (1-96): sc-4129 WB

BACKGROUND

CD5 has been identified as a 67 kDa 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 9p11.2 and encodes a 45 kDa 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

1. Davies, A.A., Ley, S.C., and Crumpton, M.J. 1992. CD5 is phosphorylated on tyrosine after stimulation of the T-cell antigen receptor complex. *Proc. Natl. Acad. Sci. USA* 89: 6368-6372.
2. Lydyard, P.M., Lamour, A., MacKenzie, L.E., Jamin, C., Mageed, R.A., and Youinou, P. 1993. CD5⁺ B cells and the immune system. *Immunol. Lett* 38: 159-166.
3. Jamin, C., Lamour, A., Pennec, Y.L., Hirn, M., Le Goff, P., and Youinou, P. 1993. Expression of CD5 and CD72 on T and B cell subsets in rheumatoid arthritis and Sjogren's syndrome. *Clin. Exp. Immunol.* 92: 245-250.
4. Raab, M., Yamamoto, M., and Rudd, C.E. 1994. The T-cell antigen CD5 acts as a receptor and substrate for the protein-tyrosine kinase p56Lck. *Mol. Cell. Biol.* 14: 2862-2870.
5. Plater-Zyberk, C., Taylor, P.C., Blaylock, M.G., and Maini, R.N. 1994. Anti-CD5 therapy decreases severity of established disease in collagen type II induced arthritis in DBA/1 mice. *Clin. Exp. Immunol.* 98: 442-447.
6. Ekerfelt, C., Ernerudh, J., Solders, G., and Vrethem, M. 1995. CD5 expression on B cells may be an activation marker for secretion of anti-myelin antibodies in patients with polyneuropathy associated with monoclonal gammopathy. *Clin. Exp. Immunol.* 101: 346-50.
7. Tarakhovskiy, A., Kanner, S.B., Hombach, J., Ledbetter, J.A., Muller, J.A., Muller, W., Killeen, N., and Rajewski, K. 1995. A role for CD5 in TCR-mediated signal transduction and thymocyte selection. *Science* 269: 535-537.

SOURCE

CD72 (1-96) is expressed in *E. coli* as a 38 kDa tagged fusion protein corresponding to amino acids 1-96 of mouse CD72.

STORAGE

Store -20° C; stable for one year from the date of shipment.

PRODUCT

CD72 (1-96) is purified from bacterial lysates (>98%) by glutathione agarose affinity chromatography; supplied as 10 µg in 0.1 ml SDS-PAGE loading buffer.

APPLICATIONS

CD72 (1-96) is suitable as a Western blotting control for sc-1707 and sc-7483.

RESEARCH USE

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