
anti-CD45

Cat #: HM1078
Mouse monoclonal IgG
0.2 µg/µl, store at 4 °C

For research use only

BACKGROUND

Protein tyrosine phosphatases (PTP) are signaling molecules that regulate a variety of cellular processes including cell growth, differentiation, mitotic cycle, and oncogenic transformation. CD45 has been identified as a transmembrane glycoprotein, broadly expressed among hematopoietic cells. It contains an extracellular domain, a single transmembrane segment and two tandem intracytoplasmic catalytic domains, and thus belongs to receptor type PTP. CD45 is an essential regulator of T- and B-cell antigen receptor signaling. It functions through either direct interaction with components of the antigen receptor complexes, or by activating various Src family kinases required for the antigen receptor signaling. CD45 also suppresses JAK kinases, and thus functions as a regulator of cytokine receptor signaling.

SPECIFICITY

This antibody reacts with CD45 of mouse, rat and human origin by Western blotting, immunoprecipitation and immunohistochemistry.

IMMUNOGEN

A peptide at the carboxy terminus of the mouse CD45,

STORAGE

This antibody is stable for 12 months when stored at 2-8°C.

REFERENCES

1. Donovan, J.A. and Koretsky, G.A. 1993. CD45 and the immune response. *J. Amer. Soc. Nephrol.* 4: 976-985.
2. Hathcock, K.S., Hirano, H., and Hodes, R.J. 1993. CD45 expression by murine B cells and T cells: alteration of CD45 isoforms in subpopulations of activated B cells. *Immunologic Res.* 12: 21-36.
3. Hovis, R.R., Donovan, J.A., Musci, M.A., Motto, D.G., Goldman, F.D., Ross, S.E., and Koretzky, G.A. 1993. Rescue of signaling by a chimeric protein containing the cytoplasmic domain of CD45. *Science* 260: 544-546.
4. Trowbridge, I.S. and Thommas, M.L. 1994. CD45: an emerging role as a protein tyrosine phosphatase required for lymphocyte activation and development. *Ann. Rev. Immunol.* 12: 85-116.
5. Sgroi, D., Koretzky, G.A., and Stamenkovic, I. 1995. Regulation of CD45 engagement by the B-cell receptor CD22. *Proc Natl. Acad. Sci. USA* 92: 4026-4030.
6. Arendt, C.W. and Ostergaard, H.L. 1995. CD45 proteintyrosine phosphatase is specifically associated with a 116-kDa tyrosine phosphorylated glycoprotein. *J. Biol. Chem.* 170: 2313-2319.
7. Mustelin, T., Williams, S., Taylor, P., Couture, C., Zenner, G., Burn, P., Ashwell, J.D., and Altman, A. 1995. Regulation of the p70zap tyrosine protein kinase in T cells by the CD45 phosphotyrosine phosphatase. *Eur. J. Immunol.* 25: 942-946.

8. Kung, C., Pingel, J.T., Heikinheimo, M., Klemola, T., Varkila, K., Yoo, L.I., Vuopala, K., Poyhonen, M., Uhari, M., Rogers, M., Speck, S.H., Chatila, T. and Thomas, M.L. (2000) Mutations in the tyrosine phosphatase CD45 gene in a child with severe combined immunodeficiency disease. *Nat. Med.* 6, 343-345.
9. Irie-Sasaki, J., Sasaki, T., Matsumoto, W., Opavsky, A., Cheng, M., Welstead, G., Griffiths, E., Krawczyk, C., Richardson, C.D., Aitken, K., Iscove, N., Koretzky, G., Johnson, P., Liu, P., Rothstein, D.M. and Penninger, J.M. (2001) CD45 is a JAK phosphatase and negatively regulates cytokine receptor signaling. *Nature* 409, 349-354.
10. Nam, H.J., Poy, F., Saito, H. and Frederick, C.A. (2005) Structural basis for the function and regulation of the receptor protein tyrosine phosphatase CD45. *J. Exp. Med.* 201, 441-452.

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