SANTA CRUZ BIOTECHNOLOGY, INC.

CD53 (OX44): sc-53055

BACKGROUND

The CD53 antigen is a member of the tetraspanin membrane protein family that is expressed in the lymphoid-myeloid lineage. The tetraspanin superfamily (CD9, CD37, CD53, CD63, CD81 and CD82) comprises a group of cell-surface proteins that are involved in cell activation and signal transduction as well as in cell adhesion, motility and metastasis. Tetraspanin transmembrane proteins have a metastasis suppressor effect by acting as cell motility brakes in tumor cells. Human neutrophils express high levels of CD53, an N-glycosylated pan-leukocyte antigen and the true homolog of the rat MRC-OX-44 antigen. CD53 is expressed on B cells, monocytes, macrophages, neutrophils, single (CD4 or CD8) positive thymocytes and peripheral T cells.

REFERENCES

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2. Angelisova, P., et al. 1990. The human leucocyte surface antigen CD53 is a protein structurally similar to the CD37 and MRC OX-44 antigens. Immunogenetics 32: 281-285.
3. Olweus, J., et al. 1993. CD53, a protein with four membrane-spanning domains, mediates signal transduction in human monocytes and B cells. J. Immunol. 151: 707-716.
4. Rasmussen, A.M., et al. 1994. Cross-linking of CD53 promotes activation of resting human B lymphocytes. J. Immunol. 153: 4997-5007.
5. Okochi, H., et al. 1997. Expression of tetra-spans transmembrane family (CD9, CD37, CD53, CD63, CD81 and CD82) in normal and neoplastic human keratinocytes: an association of CD9 with $\alpha 3\beta 1$ integrin. Br. J. Dermatol. 137: 856-863.
6. Lagaudrière-Gesbert, C., et al. 1997. Functional analysis of four tetraspans, CD9, CD53, CD81, and CD82, suggests a common role in costimulation, cell adhesion, and migration: only CD9 upregulates HB-EGF activity. Cell. Immunol. 182: 105-112.
7. Mollinedo, F., et al. 1998. Physio-logical activation of human neutrophils downregulates CD53 cell surface antigen. J. Leukoc. Biol. 63: 699-706.
8. Beinert, T., et al. 2000. Increased expression of the tetraspanins CD53 and CD63 on apoptotic human neutrophils. J. Leukoc. Biol. 67: 369-373.
9. Yunta, M., et al. 2002. Transient activation of the c-Jun N-terminal kinase (JNK) activity by ligation of the tetraspan CD53 antigen in different cell types. Eur. J. Biochem. 269: 1012-1021.

CHROMOSOMAL LOCATION

Genetic locus: Cd53 (mouse) mapping to 3 F2.3.

SOURCE

CD53 (OX44) is a mouse monoclonal antibody raised against T cell blasts of rat origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CD53 (OX44) is available conjugated to either phycoerythrin (sc-53055 PE) or fluorescein (sc-53055 FITC), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM.

APPLICATIONS

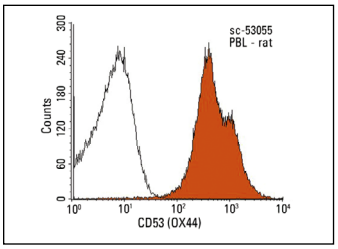
CD53 (OX44) is recommended for detection of CD53 a 43kD glycoprotein of mouse and rat origin by immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10^6 cells).

Molecular Weight of CD53: 32-45 kDa.

RECOMMENDED SUPPORT 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-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. 3) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



CD53 (OX44): sc-53055. Indirect FCM analysis of rat peripheral blood leukocytes stained with CD53 (OX44), followed by PE-conjugated goat anti-mouse IgG: sc-3738. Black line histogram represents the isotype control, normal mouse IgG_1: sc-3877.

STORAGE

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

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.