SANTA CRUZ BIOTECHNOLOGY, INC.

IgD (OX60): sc-53082

BACKGROUND

Immunoglobulins are four-chain, Y-shaped, monomeric structures comprised of two identical heavy chains and two identical light chains held together through interchain disulfide bonds. The chains form two domains, the Fab (antigen binding) fragment and the Fc (constant) fragment. Immunoglobulin D (IgD) exists as a monomer with delta heavy chains and either kappa or lambda light chains. It plays a biological role as a transmembrane receptor molecule, co-expressed with IgM on the surface of mature/naive B cells. In particular, it is found on spleen B cell surfaces. Compared to IgM, IgD exists in much lower numbers and is not expressed on immature B cells. IgD surface expression on B cells is regulated in part by IL-27. In mice, the inhibition of this immunoglobulin isotype does not cause a significant change to the immune system.

REFERENCES

1. Takayasu, T., Takahashi, N. and Shinoda, T. 1980. Amino acid sequence and location of the three glycopeptides in the Fc region of human immunoglobulin D. Biochem. Biophys. Res. Commun. 97: 635-641.
2. Lin, L.C. and Putnam, F.W. 1981. Primary structure of the Fc region of human immunoglobulin D: implications for evolutionary origin and biological function. Proc. Natl. Acad. Sci. USA 78: 504-508.
3. Shinoda, T., Takahashi, N., Takayasu, T., Okuyama, T. and Shimizu, A. 1981. Complete amino acid sequence of the Fc region of a human δ chain. Proc. Natl. Acad. Sci. USA 78: 785-789.
4. Putnam, F.W., Takahashi, N., Tetaert, D., Debuire, B. and Lin, L.C. 1981. Amino acid sequence of the first constant region domain and the hinge region of the δ heavy chain of human IgD. Proc. Natl. Acad. Sci. USA 78: 6168-6172.
5. Takayasu, T., Suzuki, S., Kametani, F., Takahashi, N., Shinoda, T., Okuyama, T. and Munekata, E. 1982. Amino acid sequence of galactosamine-containing glycopeptides in the hinge region of a human immunoglobulin D. Biochem. Biophys. Res. Commun. 105: 1066-1071.
6. Naiem, M., Gerdes, J., Abdulaziz, Z., Sunderland, C., Allington, M., Stein, H. and Mason, D. 1982. The value of immunohistological screening in the production of monoclonal antibodies. J. Immunol. Methods 50: 145-160.

CHROMOSOMAL LOCATION

Genetic locus: Ighd (mouse) mapping to 12 F1.

SOURCE

IgD (OX60) is a mouse monoclonal antibody raised against purified IgD of rat origin.

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 for detailed protocols and support products.

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.

IgD (OX60) is available conjugated to agarose (sc-53082 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-53082 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53082 PE), fluorescein (sc-53082 FITC), Alexa Fluor® 488 (sc-53082 AF488), Alexa Fluor® 546 (sc-53082 AF546), Alexa Fluor® 594 (sc-53082 AF594) or Alexa Fluor® 647 (sc-53082 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53082 AF680) or Alexa Fluor® 790 (sc-53082 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

IgD (OX60) is recommended for detection of IgD Chain C of mouse origin by 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).

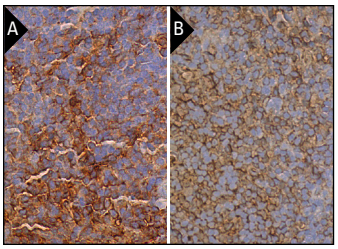
Molecular Weight of IgD heavy (δ) chain: 44-80 kDa.

Molecular Weight of IgD light (κ/λ) chain: 21-25 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) 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. 2) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



IgD (OX60): sc-53082. Immunoperoxidase staining of formalin fixed, paraffin-embedded human spleen tissue showing membrane and cytoplasmic staining of subset of cells in white pulp and cells in red pulp (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human lymph node tissue showing membrane and cytoplasmic staining of cells in germinal center and cells in non-germinal center (**B**).

RESEARCH USE

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