

IgD (IgD26): sc-53345

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 δ heavy chains and either κ or λ 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., et al. 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., et al. 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., et al. 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., et al. 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., et al. 1982. The value of immunohistological screening in the production of monoclonal antibodies. *J. Immunol. Methods* 50: 145-160.
7. Ohta, Y. and Flajnik, M. 2006. IgD, like IgM, is a primordial immunoglobulin class perpetuated in most jawed vertebrates. *Proc. Natl. Acad. Sci. USA* 103: 10723-10728.
8. Zhao, Y., et al. 2006. Identification of IgF, a hinge region containing Ig class, and IgD in *Xenopus tropicalis*. *Proc. Natl. Acad. Sci. USA* 103: 12087-12092.
9. Boumendjel, A., et al. 2006. IL-27 induces the production of IgG₁ by human B cells. *Eur. Cytokine Netw.* 17: 281-289.

CHROMOSOMAL LOCATION

Genetic locus: IGHD (human) mapping to 14q13.

SOURCE

IgD (IgD26) is a mouse monoclonal antibody raised against IgD 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 IgG₁ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

IgD (IgD26) is available conjugated to agarose (sc-53345 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-53345 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53345 PE), fluorescein (sc-53345 FITC), Alexa Fluor® 488 (sc-53345 AF488), Alexa Fluor® 546 (sc-53345 AF546), Alexa Fluor® 594 (sc-53345 AF594) or Alexa Fluor® 647 (sc-53345 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53345 AF680) or Alexa Fluor® 790 (sc-53345 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

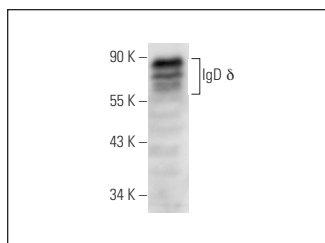
IgD (IgD26) is recommended for detection of IgD of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (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).

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

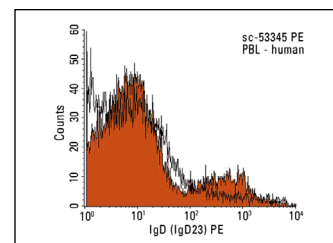
Molecular Weight of IgD light (κ/λ) chain: 21-25 kDa.

Positive Controls: NAMALWA cell lysate: sc-2234.

DATA



IgD (IgD26): sc-53345. Western blot analysis of IgD δ expression in NAMALWA whole cell lysate.



IgD (IgD26): sc-53345. Indirect FCM analysis of human peripheral blood leukocytes stained with IgD (IgD26), followed by PE-conjugated goat anti-mouse IgG₁: sc-3764. Black line histogram represents the isotype control, normal mouse IgG₁: sc-3877.

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.