SANTA CRUZ BIOTECHNOLOGY, INC.

IgM (M11): sc-66121

BACKGROUND

Immunoglobulin M (IgM) is the largest circulating antibody molecule in humans. It consists of a heavy chain (μ-chain) and a light chain (κ- or λ-chain), as well as five base units and ten binding sites, though it cannot bind all ten simultaneously because of steric hindrance. IgM chain C refers to the constant region of the IgM heavy chain that is involved in immune regulation. IgM forms polymers by covalently linking multiple immunoglobulins together with disulfide bonds. It normally exists as a pentamer, but occasionally as a hexamer. Because of its polymeric nature, IgM has high avidity, and it is especially effective at complement activation. Due to its large size, IgM does not diffuse well, and it is found in the interstitium in very low amounts. IgM is mainly found in serum; however, because of the J chain, it is also important as a secretory immunoglobulin. IgM is the first immunoglobulin expressed by mature B cells, and it normally appears early in the course of an infection and does not reappear after further exposure.

REFERENCES

1. Liu, C.P., et al. 1980. Mapping of heavy chain genes for mouse immunoglobulins M and D. Science 209: 1348-1353.
2. Marchalonis, J.J. and Wang, A.C. 1981. A marmoset T-lymphocyte protein related to defined human serum immunoglobulin and fragments. J. Immunogenet. 8: 165-175.
3. Richards, J.E., et al. 1983. Unusual sequences in the murine immunoglobulin μ-δ heavy-chain region. Nature 306: 483-487.
4. Dahan, A., et al. 1983. Nucleotide sequence of the constant region of a chicken μ heavy chain immunoglobulin mRNA. Nucleic Acids Res. 11: 5381-5389.
5. Erber, W.N., et al. 1983. Immunoalkaline phosphatase labelling of haematological samples with monoclonal antibodies. In Feldman, G., ed., Proceedings of the 2nd International Symposium on Immunoenzymatic Techniques. Amsterdam: Elsevier/North-Holland Biomedical Press, 29-40.
6. Leptin, M. 1985. Monoclonal antibodies specific for murine IgM II. Activation of B lymphocytes by monoclonal antibodies specific for the four constant domains of IgM. Eur. J. Immunol. 15: 131-137.
7. Mathur, A., et al. 1988. Expression, distribution and specificity of Fc receptors for IgM on murine B cells. J. Immunol. 141: 1855-1862.
8. Goldsby, R., et al. 1992. Kuby Immunology. New York: W.H. Freeman and Company.
9. Reitan, S.K. and Hannestad, K. 2002. Immunoglobulin heavy chain constant regions regulate immunity and tolerance to idiotypes of antibody variable regions. Proc. Natl. Acad. Sci. USA 99: 7588-7593.

CHROMOSOMAL LOCATION

Genetic locus: IGHM (human) mapping to 14p13.

SOURCE

IgM (M11) is a mouse monoclonal antibody raised against IgM of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

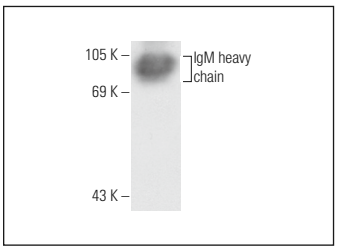
IgM (M11) is recommended for detection of IgM of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Molecular Weight of IgM heavy (μ) chain: 76-92 kDa.

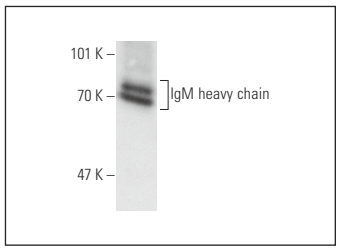
Molecular Weight of IgM light (κ/λ) chain: 25-30 kDa.

Positive Controls: BJAB whole cell lysate: sc-2207 or U-698-M whole cell lysate: sc-364799.

DATA



IgM (M11): sc-66121. Western blot analysis of IgM expression in BJAB whole cell lysate.



IgM (M11): sc-66121. Western blot analysis of IgM expression in U-698-M whole cell lysate.

SELECT PRODUCT CITATIONS

1. Yang, L., et al. 2018. Sevoflurane-induced neurotoxicity is driven by OXR1 post-transcriptional downregulation involving hsa-miR-302e. Mol. Med. Rep. 18: 4657-4665.

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.

CONJUGATES

See **IgM (R1/69): sc-53347** for IgM antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.