

IgM (G-12): sc-376317

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

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- Richards, J.E., et al. 1983. Unusual sequences in the murine immunoglobulin μ - δ heavy-chain region. *Nature* 306: 483-487.
- 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.
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- Goldsby, R., et al. 1992. *Kuby Immunology*. New York: W.H. Freeman and Company.

CHROMOSOMAL LOCATION

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

SOURCE

IgM (G-12) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 39-73 near the N-terminus of IgM 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 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-376317 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

IgM (G-12) is recommended for detection of IgM of human origin by Western Blotting (starting dilution 1:100, 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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

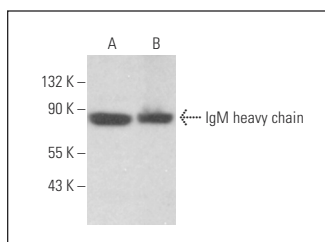
Molecular Weight of IgM light (κ/λ) chain: 25-30 kDa.

Positive Controls: Ramos cell lysate: sc-2216, Raji whole cell lysate: sc-364236 or NAMALWA cell lysate: sc-2234.

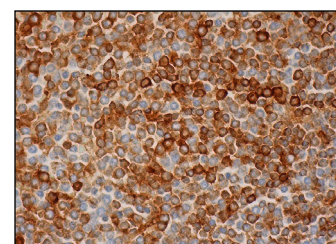
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG κ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



IgM (G-12): sc-376317. Western blot analysis of IgM expression in Raji (A) and Ramos (B) whole cell lysates.



IgM (G-12): sc-376317. Immunoperoxidase staining of formalin fixed, paraffin-embedded human spleen tissue showing cytoplasmic and membrane staining of cells in white pulp and cells in red pulp.

RESEARCH USE

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