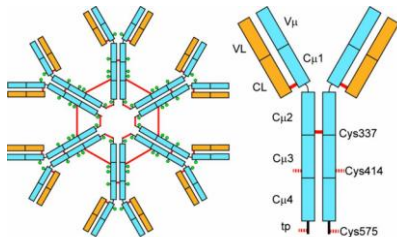


Product Data Sheet


**Cat#** 20007-2-MU Human IgM, mu Chain/heavy chain, Human Plasma, native (isotype control) **Size:** □100 ug



Immunoglobulin M, or IgM for short, is a basic antibody that is produced by B cells. IgM is by far the physically largest antibody in the human circulatory system. It is the first antibody to appear

in response to initial exposure to antigen. The spleen is the major site of specific IgM production. IgM forms polymers where multiple immunoglobulins are covalently linked together with disulfide bonds, mostly as a pentamer but also as a hexamer. IgM has a molecular mass of approximately 970 kDa (in its pentamer form). Because each monomer has two antigen binding sites, a pentameric IgM has 10 binding sites. However, IgM cannot bind 10 antigens at the same time because the large size of most antigens hinders binding to nearby sites.

The J chain is found in pentameric IgM but not in the hexameric form, perhaps due to space constraints in the hexameric complex. Pentameric IgM can also be made in the absence of J chain. At present, it is still uncertain what fraction of normal pentamer contains J chain, and to this extent it is also uncertain whether a J chain-containing pentamer contains one or more than one J chain. Because IgM is a large molecule, it cannot diffuse well, and is found in the interstitium only in very low quantities. IgM is primarily found in serum; however, because of the J chain, it is also important as a secretory immunoglobulin. Due to its polymeric nature, IgM possesses high avidity, and is particularly effective at complement activation. By itself, IgM is an ineffective opsonin; however it contributes greatly to opsonization by activating complement and causing C3b to bind to the antigen. The FC portion of the IgM molecule is important for structural studies and is thought to influence complement fixation and placental permeability. Human IgM (576-aa) is more conserved across different species than the heavy chains of IgG or IgA.



Human native pooled plasma served used as the source material. IgM mu chain (heavy chain) is purified by reducing the disulfide bond connecting it to the IgM kappa and lambda light chains. (>95% by SDS-PAGE, mol wt 75 kda, Extinction coefficient =1.33). It has no reaction by IEP to anti-kappa or lambda sera.

All human derived material has been tested negative for HIV, HCV, and HbSAg. Nevertheless, all precautions should be taken and samples be treated as potentially hazardous.

**Form and Storage**

Human IgM, mu chain, is supplied as lyophilized powder in 1M acetic acid buffer (or see lot sp. conc. on the vial) or powder form. The product should be stored at 4°C for short term and -20°C for long term storage. It is stable for a minimum of 1 year.

Do not store diluted solutions. Sodium azide, an inhibitor of peroxidase, must be avoided if used with antibody-HRP conjugates. The **lyophilized products** should be dissolved in 0.1M acetic acid to preprepare desired concentration by gentle rocking or vortexing at room temperature. Centrifuge the solution briefly (10,000 g, 15 min) to remove any particulate matter. It should be aliquoted and stored frozen for long term use.

**Suggested Uses**

This preparation of normal human IgM is suitable for coating the ELISA plates or as a non-immune control for ELISA, dot blot, Western or IHC. Recommended testing conc. is approx. 1-10 ug/ml. It is, however, possible that this preparation may be unsuitable for some antigens or cell/tissue extracts and may give slightly higher background.

All human derived material has been tested negative for HIV, HCV, and HbSAg. Nevertheless, all precautions should be taken and samples be treated as potentially hazardous.

This material is sold for research purposes only and is not required to appear on the TSCA inventory. It is not intended for food, diagnostic, drug, household, agricultural or cosmetic use. Its use must be supervised by a technically qualified individual experienced in handling potentially hazardous chemicals.

*This product is for in vitro research use only.*

**Related items**

Catalog#	ProdDescription
1760	Human IgM ELISA Kit, 96 tests, Quantitative
1770	Human Anti-Mouse Antibodies (HAMA) ELISA Kit, 96
1780	Human IgA ELISA Kit, 96 tests, Quantitative
20007-2	Human IgM, purified (isotype control)
20007-2-10	Human IgM purified (isotype control)
20007-2-5	Human IgM purified (isotype control)
20007-2-FC5M	Human IgM Fc5u fragment, purified (isotype control)
20007-2-M	Human IgM, Myeloma Plasma (isotype control)
20007-2-MB	Human IgM-Biotin conjugate (myeloma, isotype control)
20007-2-MF	Human IgM-FITC conjugate (myeloma, isotype control)
20007-2-MP	Human IgM-HRP conjugate (myeloma, isotype control)
20007-2-MR	Human IgM-Rhodamine conjugate (myeloma, isotype control)
20007-2-MT	Human IgM-Texas Red conjugate (isotype control)
20007-2-MU	Human IgM, mu Chain, Human Plasma, native (isotype control)

**20007-2-MU-Human-IgM-Mu-chain-pure**

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