PRODUCT INFORMATION

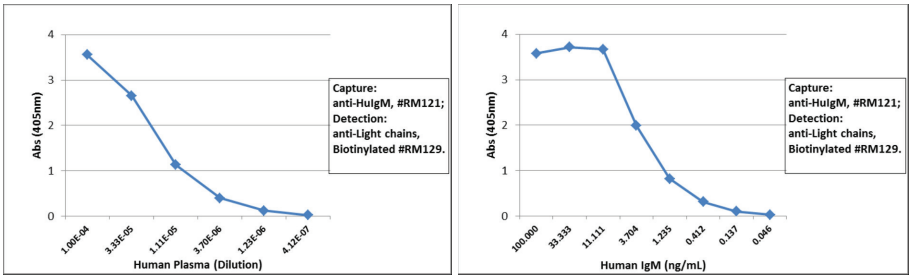
IgM (human) Monoclonal Antibody (Clone RM121)

Item No. 32113

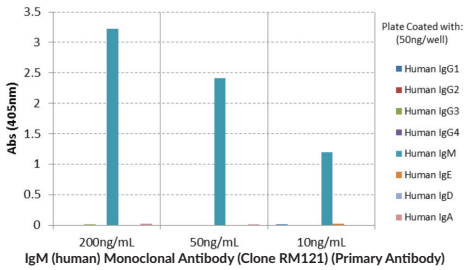
Overview and Properties

Contents:	This vial contains 100 µg of protein A-affinity purified monoclonal antibody.
Synonym:	Immunoglobulin M
Immunogen:	Human IgM
Cross Reactivity:	(+) Human IgM; (-) Human IgA, IgD, IgE, IgG
Species Reactivity:	(+) Human
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥1 year
Storage Buffer:	PBS with 50% glycerol, 1% BSA, and 0.09% sodium azide
Concentration:	1 mg/ml
Clone:	RM121
Host:	Rabbit
Isotype:	IgG
Applications:	ELISA, immunocytochemistry (ICC), and immunohistochemistry (IHC); the recommended starting concentration for ELISA is 50-200 ng/well (for capture) and 0.05-0.2 µg/ml (for detection), 0.5-2 µg/ml for ICC, and 0.5-2 µg/ml for IHC. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

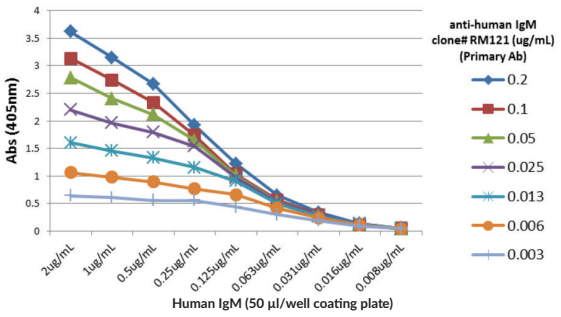
Images



Sandwich ELISA using IgM (human) Monoclonal Antibody (Clone RM121) as the capture antibody (100 ng/well). Ig Light Chain (human) Monoclonal Antibody - Biotinylated (Item No. 32112) was used as the detection antibody, followed by alkaline phosphatase-conjugated streptavidin.



ELISA of human immunoglobulins (Igs). IgM (human) Monoclonal Antibody (Clone RM121) reacts only to human IgM and and not to human IgG, IgE, IgD, or IgA. The plate was coated with 50 ng/well of different Igs. 200, 50 ng/ml of IgM (human) Monoclonal Antibody (Clone RM121) was used as the primary antibody. An alkaline phosphatase-conjugated anti-rabbit IgG was used as the secondary antibody.



A titer ELISA using IgM (human) Monoclonal Antibody (Clone RM121). The plate was coated with different amounts of human IgM. A serial dilution of IgM (human) Monoclonal Antibody (Clone RM121) was used as the primary antibody. An alkaline phosphatase-conjugated anti-rabbit IgG was used as the secondary antibody.

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Description

Immunoglobulin M (IgM) is a member of the immunoglobulin superfamily of glycoproteins that plays a central role in the adaptive immune response and in mucosal immunology.[1,2] IgM consists of two light chains of approximately 25 kDa each, as well as two heavy chains of approximately 70 kDa each that contain C-terminal extensions, known as tailpieces, which allow for IgM oligomerization.[2,3] The heavy chains are linked together by disulfide bonds to form an Fc region and also combine with the light chains to form the Fab region, which mediate receptor and antigen binding, respectively.[4] Five IgM proteins oligomerize via disulfide bonds in the presence of a 15-kDa joining chain, a process that is required for transcytosis of IgM from plasma cells to mucosal epithelial cells *via* the polyimmunoglobulin receptor (pIgR).[2] Monomeric and oligomeric IgM are both ligands for the IgM and IgA-binding high affinity Igα and the Igμ Fc receptor (Fcα/μ-R) on dendritic cells, which mediates cellular uptake of IgM-conjugated antigens, and the IgM-binding Fcμ-R on B and T cells, which is important for B cell maturation among other functions.[2,5-7] IgM is produced primarily in the plasma by naïve B cells and expressed in its monomeric low-affinity form on the cell surface.[1] Activated B cells secrete pentameric high-affinity IgM, which opsonizes antigens to target them for removal by phagocytes and to activate complement *via* the classical pathway.[1,8] IgM antibodies are produced early in infection and have been used to determine exposure to a specific pathogen.[1] IgM levels are elevated in hyper-IgM syndromes, which are characterized by dysfunctions in Ig class switching recombination.[9] Cayman's IgM (human) Monoclonal Antibody (Clone RM121) can be used for ELISA, immunocytochemistry (ICC), and immunohistochemistry (IHC) applications.

References

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