abcam

ab190369

Anti-Mouse IgM antibody [RM109]

Recombinant

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	Preservative: 0.09% Sodium azide Constituents: PBS, 50% Glycerol (glycerin, glycerine), 1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	Full Length Protein corresponding to Mouse Ighm. The exact immunogen used to generate this antibody is proprietary information. Database link P01872
Clone number	RM109
Purification technique	Affinity purification Protein A
Specificity	This antibody reacts to mouse IgM. No cross reactivity with mouse IgG1, IgG2a, IgG2b, IgG3, IgA, IgE, human IgG, rat IgG, or goat IgG. The Fc region of RM109 has been engineered to eliminate the binding of Fc receptor.
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	ab190369 was purified from an animal origin–free and protein-free culture supernatant.

Reactivity data

ICC

Expected

Species	Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

Not recommended

Species	Recombinant fragment, Recombinant full length protein - Mouse
Dilution info	-
Notes	-

IP

Expected

Species	Recombinant fragment, Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

Not recommended

Species	Recombinant full length protein - Mouse
Dilution info	-
Notes	-

Flow Cyt

Expected

Species	Mouse
Dilution info	-
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Not recommended

Species	Recombinant fragment, Recombinant full length protein - Mouse

Dilution info	-
Notes	-

ELISA

Tested

Species	Recombinant full length protein - Mouse
Dilution info	0.005-0.2 µg/mL
Notes	-

Predicted

Species	Mouse
Dilution info	-
Notes	-

Not recommended

Species	Recombinant fragment
Dilution info	-
Notes	-

IHC-P

Expected

Species	Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

Not recommended

Species	Recombinant fragment, Recombinant full length protein - Mouse
Dilution info	-
Notes	-

Target data

See full target information Ighm

Function	Constant region of immunoglobulin heavy chains. Immunoglobulins, also known as antibodies, are membrane-bound or secreted glycoproteins produced by B lymphocytes. In the recognition phase of humoral immunity, the membrane-bound immunoglobulins serve as receptors which, upon binding of a specific antigen, trigger the clonal expansion and differentiation of B lymphocytes into immunoglobulins-secreting plasma cells. Secreted immunoglobulins mediate the effector phase of humoral immunity, which results in the elimination of bound antigens (By similarity). The antigen binding site is formed by the variable domain of one heavy chain, together with that of its associated light chain. Thus, each immunoglobulin has two antigen binding sites with remarkable affinity for a particular antigen. The variable domains are assembled by a process called V-(D)-J rearrangement and can then be subjected to somatic hypermutations which, after exposure to antigen and selection, allow affinity maturation for a particular antigen (By similarity). Isoform 1. Constant region of secreted IgM (sIgM), also known as the Fc region of IgM antibody. Able to multimerize, forms high order polymers, mainly pentamers and occasionally hexamers, providing for multivalency and high avidity recognition of antigens (By similarity). Natural sIgM are polyreactive and recognize conserved self- and pathogen-derived structures, whereas immune sIgM are secreted only upon exposure to pathogens and are antigen-specific. Both natural and immune sIgM are required for an efficient humoral immune response to infection (PubMed:10899913, PubMed:28135254, PubMed:34788614). Mediates sIgM effector functions mostly via Fc receptors and the complement system. On lymphoid cells binds high-affinity Fc receptor FCMR and promotes induction of an efficient neutralizing IgG response while maintaining tolerance to self-antigens. Recruits C1q complement component to initiate the classical complement pathway, facilitating the recognition and neutralization of pathogens by the host. Together with C1q and mannose-binding lectin promotes the phagocytosis of apoptotic cells by macrophages, ensuring the clearance of potential autoimmune epitopes from tissues (By similarity) (PubMed:10899913, PubMed:11062505, PubMed:28135254). Involved in mucosal immunity. It is transported by transcytosis across mucosal epithelium by PIGR and secreted on the apical side in complex with PIGR secretory component to scan mucosal lining for pathogens. IgM-antigen complexes undergo FCMR-mediated retrotranscytosis across mucosal M cells toward antigen-presenting cells in mucosal lymphoid tissues (PubMed:34788614). Isoform 2. Constant region of membrane-bound IgM, part of the B cell receptor complex (BCR). IgM BCR provides constitutive tonic signaling for B cell survival. Mediates pre-BCR signaling that regulates B cell selection and rearrangement of Ig genes via allelic exclusion.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	1-2 weeks

Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	Mouse IgM also known as Immunoglobulin M is an essential type of antibody found in mice with a molecular mass of approximately 970 kDa. This antibody is mainly expressed in the blood and lymphatic fluid and is the first antibody produced by B cells upon exposure to an antigen. The pentameric form of Mouse IgM has ten antigen-binding sites which enhances its ability to neutralize pathogens effectively and forms the foundation of the initial immune response.
Biological function summary	Mouse IgM acts as a pivotal component in the body's defense mechanisms against infections. It forms part of a complex known as the complement system particularly activating the classic complement pathway. This activation facilitates opsonization where pathogens are marked for ingestion and destruction by macrophages and other immune cells. Alongside IgG antibodies Mouse IgM plays a vital role in immune surveillance and rapid response to foreign antigens although IgM is larger and less specialized compared to its IgG counterpart.
Pathways	Mouse IgM is critically connected to the classical complement activation pathway and the B cell signaling pathway. In the complement cascade it interacts with C1 complex beginning the process of pathogen elimination. In the context of B cell receptor-mediated signaling IgM antibodies serve as receptors on naive B cells synergizing with proteins such as Ig-alpha and Ig-beta to initiate signaling cascades essential for B cell maturation and differentiation. These pathways ensure the development of a robust adaptive immune response.
Associated diseases and disorders	Dysfunction or deficiency in Mouse IgM can lead to conditions such as immunodeficiencies and autoimmune disorders. For instance a lack of functional IgM results in hyper-IgM syndrome where there is an elevated level of IgG but low levels of IgM impacting the body's ability to fight infections. Additionally systemic lupus erythematosus an autoimmune disease is often associated with abnormal IgM activity. During this condition improper interaction with IgG may exacerbate autoantibody production highlighting the complex relationship between IgM and other immunoglobulins in managing immune health.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

We do not recommend this combination. It is not covered by our product promise.

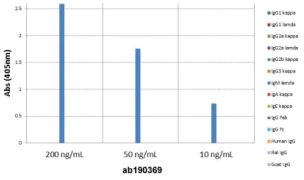
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

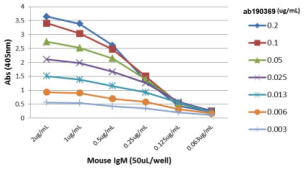
---

2 product images



ELISA - Anti-Mouse IgM antibody [RM109] (ab190369)

ELISA of mouse immunoglobulins shows ab190369 reacted to mouse IgM; no cross reactivity with IgG1, IgG2a, IgG2b, IgG3, IgA, IgE, human IgG, rat IgG, or goat IgG. The plate was coated with 50 ng/well of different immunoglobulins. 200 ng/mL, 50 ng/mL, or 10 ng/mL of ab190369 was used as the primary antibody. An alkaline phosphatase conjugated anti-rabbit IgG as the secondary antibody.



ELISA - Anti-Mouse IgM antibody [RM109] (ab190369)

A titer ELISA of mouse IgM. The plate was coated with different amounts of mouse IgM. A serial dilution of ab190369 was used as the primary antibody. An alkaline phosphatase conjugated anti-rabbit IgG as the secondary antibody.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.