abcam

ab316359

Anti-Human IgM antibody [47.2.E9]

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	Preservative: 0.1% Sodium azide Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	Native Full Length Protein corresponding to Human IGHM. Database link P01871
Clone number	47.2.E9

Reactivity data

WB

Tested

Species	Human
Dilution info	0.01-0.03 µg/mL
Notes	-

Flow Cyt

Tested

Species	Human
Dilution info	1/25 - 1/50

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 (PubMed:20176268, PubMed:22158414). 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 (PubMed:17576170, PubMed:20176268). 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 (PubMed:32029689, PubMed:37095205). 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 (By similarity). 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:12847249, PubMed:19006321, PubMed:28230186, PubMed:32029689). 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 (By similarity) (PubMed:32029689). 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 month
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Storage information	Avoid freeze / thaw cycle

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

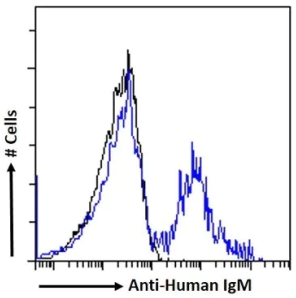
We do not recommend this combination. It is not covered by our product promise.

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.

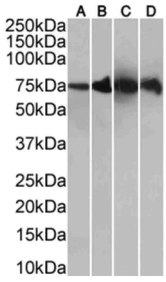
Full details and terms and conditions can be found here:
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2 product images



Flow Cytometry - Anti-Human IgM Antibody [47.2.E9] (ab316359)

Blue line: Flow cytometric analysis of human peripheral blood leukocytes. Primary incubation 1hr (1:25-1:50 dilution) followed by Alexa Fluor 488 ® conjugated goat Anti-mouse IgG (1:1000 dilution). Black line: Anti-Fluorescein Isotype control.



Western blot - Anti-Human IgM Antibody [47.2.E9] (ab316359)

(0.03 µg/ml) staining in human spleen (A), (0.01 µg/ml) staining in human tonsil (B) tissue lysates and (0.003 ug/ml) staining in human plasma (C) and (0.0003 µg/ml) staining in human serum (D) (35 µg protein in RIPA buffer). Primary incubation was 1 hour. Detected by chemiluminescence.
Lane 1:
Western blot - Anti-Human IgM Antibody [47.2.E9] (ab316359) at 0.03 µg/mL

Lane 2:
Western blot - Anti-Human IgM Antibody [47.2.E9] (ab316359) at 0.01 µg/mL

Lane 3:
Western blot - Anti-Human IgM Antibody [47.2.E9] (ab316359) at 0.003 µg/mL

Lane 4:
Western blot - Anti-Human IgM Antibody [47.2.E9] (ab316359) at 0.0003 µg/mL

Lane 1:
Human spleen tissue lysate

Lane 2:
Human tonsil tissue lysate

Lane 3:
Human plasma

Lane 4:
Human serum

Developed using the ECL technique.

Exposure time: 1hr

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