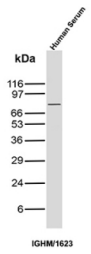
IgM Heavy Chain Antibody [clone IGHM/1623] (V8791)

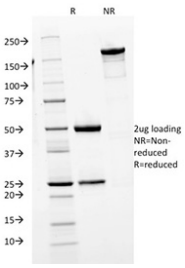
Catalog No.	Formulation	Size
V8791-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	100 ug
V8791-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	20 ug
V8791SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG1, kappa
Clone Name	IGHM/1623
Purity	Protein A/G affinity
UniProt	P01871; P20769
Localization	Cytoplasm, Cell Surface and Secreted
Applications	Western Blot : 2-4ug/ml ELISA (order BSA-free Format For Coating) :
Limitations	This IgM Heavy Chain antibody is available for research use only.



Western blot analysis of IgM heavy chain in human serum. Human serum lysate was separated by SDS-PAGE under reducing conditions and probed with IgM Heavy Chain antibody (clone IGHM/1623). A distinct band is detected at approximately 70 kDa, consistent with the predicted molecular weight of the immunoglobulin mu heavy chain based on its amino acid sequence.



SDS-PAGE analysis of purified, BSA-free IgM Heavy Chain antibody (clone IGHM/1623) as confirmation of integrity and purity.

Description

IgM Heavy Chain Antibody targets the immunoglobulin mu heavy chain, a core structural component of immunoglobulin M encoded by the IGHM gene that plays a central role in humoral immunity. Immunoglobulin M is the first antibody isotype produced during early immune responses and is essential for initial antigen recognition and immune system activation. The IgM heavy chain defines the structural and functional properties of IgM molecules and is critical for their assembly and biological activity.

Functionally, the IgM heavy chain contributes to formation of pentameric or hexameric IgM complexes that enable high-avidity binding to antigens. This multimeric structure allows IgM to efficiently activate the complement system and promote immune clearance mechanisms. IgM heavy chain-containing antibodies are primarily expressed by naive B cells and early plasma cells, reflecting their role in primary immune responses. An IgM Heavy Chain Antibody enables investigation of B cell development, antibody production, and humoral immune activation in research studies.

IGHM expression is tightly regulated during B cell maturation. At the cellular level, IgM heavy chain is detected on the surface of immature and mature naive B lymphocytes as part of the B cell receptor complex and is also present in secreted IgM produced by plasma cells. Subcellular localization therefore includes the plasma membrane, endoplasmic reticulum, and extracellular compartments, consistent with antibody synthesis, assembly, and secretion pathways. Changes in IgM heavy chain expression patterns can reflect B cell differentiation status and immune activation states.

At the molecular level, the IgM heavy chain consists of variable and constant regions that determine antigen specificity and effector function. The constant region of the mu heavy chain mediates interactions with complement components and other immune factors, while disulfide bonding supports multimeric IgM assembly. These structural features distinguish IgM from other immunoglobulin isotypes and underlie its role as an early-response antibody in the immune system.

From a biological and disease relevance perspective, IgM heavy chain expression is widely studied in immunology and hematopathology research. Alterations in IgM expression levels or distribution are associated with immune deficiencies, autoimmune conditions, and B cell-derived malignancies. As a result, detection of IgM heavy chain is commonly used to assess B cell lineage, maturation stage, and immunoglobulin production in research contexts focused on immune system function and disease-associated immune dysregulation.

Clone IGHM/1623 is designed to recognize the IgM heavy chain and is identified by clone designation in experimental workflows examining immunoglobulin expression. IgM Heavy Chain Antibody reagents, including those using clone IGHM/1623, are valuable tools for studying B cell biology, antibody expression, and humoral immune mechanisms. NSJ Bioreagents provides IgM Heavy Chain Antibody products intended for research use.

Application Notes

Optimal dilution of the IgM Heavy Chain antibody should be determined by the researcher.

Immunogen

Heavy chain of human IgM was used as the immunogen for the IgM Heavy Chain antibody.

Storage

Aliquot the IgM Heavy Chain antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.