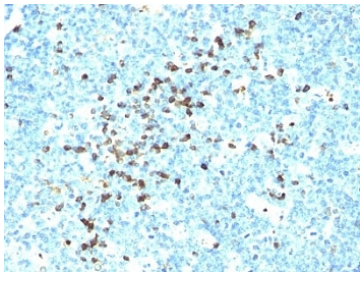
IgM Antibody [clone DA4-4, SA-DA4 or HB57] (V3130)

Catalog No.	Formulation	Size
V3130-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	100 ug
V3130-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	20 ug
V3130SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug
V3130IHC-7ML	Prediluted in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide; *For IHC use only*	7 ml

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	DA4-4, SA-DA4 or HB57
Purity	Protein G affinity chromatography
UniProt	P01871, P20769
Localization	Cytoplasm, Cell Surface and Secreted
Applications	Flow Cytometry : 1-2ug/million cells Immunofluorescence : 1-3ug/ml Immunohistochemistry (FFPE) : 1-2ug/ml for 30 min at RT
Limitations	This IgM antibody is available for research use only.



IHC: Formalin-fixed, paraffin-embedded human tonsil stained with IgM antibody (clone DA4-4).

Description

IgM antibody (clone DA4-4, also called SA-DA4 and HB57) detects the mu heavy chain of human immunoglobulin M, the first antibody isotype produced during an immune response. Immunoglobulin M (IgM) is a pentameric glycoprotein expressed on the surface of immature B cells and secreted into plasma upon activation. The UniProt recommended name for this target is Immunoglobulin mu chain constant region. IgM serves as a key effector molecule in the primary immune response, providing early defense against pathogens through complement activation and agglutination of antigens.

Clone DA4-4 (SA-DA4, HB57) has been widely used in immunological and cell biology research for the identification and quantification of IgM-expressing B lymphocytes. The antibody specifically binds to the constant region of the IgM heavy chain and does not cross-react with other immunoglobulin classes such as IgG, IgA, IgD, or IgE. Published studies have used this clone in flow cytometry, immunofluorescence, and immunohistochemical analyses to distinguish surface IgM-positive B cells from class-switched memory subsets and plasma cells. The cloneÃ¢Â€Â™s well-characterized specificity and reproducible performance have made it a standard reagent in immunophenotyping panels for decades.

IgM is primarily synthesized in the endoplasmic reticulum and assembled into pentamers stabilized by a joining (J) chain. The multimeric structure enhances avidity for multivalent antigens and efficiently activates the classical complement pathway via C1q binding. In plasma, IgM represents roughly 5-10% of total immunoglobulin content but is the most efficient at neutralizing pathogens early in infection. Membrane-bound IgM functions as part of the B cell receptor (BCR) complex, forming signaling assemblies with Ig-alpha (CD79A) and Ig-beta (CD79B) that initiate B cell activation upon antigen recognition.

Beyond its immune defense role, IgM contributes to homeostatic clearance of apoptotic cells, natural antibody production, and immune complex regulation. The antibodyÃ¢Â€Â™s short half-life and large molecular size limit its diffusion into tissues, but its high avidity and complement activation capacity make it an essential mediator of early host protection. The presence of IgM antibodies is often used as a diagnostic marker of recent infection or early-stage immune activation.

IgM antibody (clone DA4-4) is suitable for detecting IgM expression on B cells, in serum, or in purified immunoglobulin samples. It provides high specificity for the mu chain and consistent results across applications that assess B cell differentiation, immune activation, or humoral response. NSJ Bioreagents provides the human IgM antibody (clone DA4-4, also called SA-DA4 and HB57) validated for use in relevant research applications, supporting studies in immunology, vaccine development, and B cell biology.

Application Notes

The optimal dilution of the IgM antibody for each application should be determined by the researcher.

1. Staining of formalin-fixed tissues requires boiling tissue sections in 10mM citrate buffer, pH 6.0, for 10-20 min followed by cooling at RT for 20 minutes.
2. The prediluted format is supplied in a dropper bottle and is optimized for use in IHC. After epitope retrieval step (if required), drip mAb solution onto the tissue section and incubate at RT for 30 min.

Immunogen

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

Storage

Store the IgM antibody at 2-8oC (with azide) or aliquot and store at -20oC or colder (without azide).