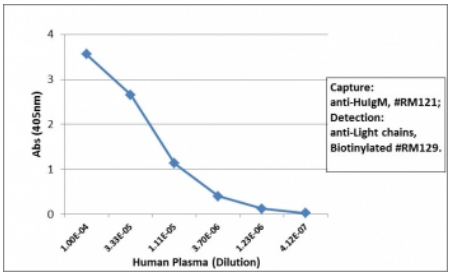
Recombinant Human IgM Antibody [clone RM121] (R20181)

Catalog No.	Formulation	Size
R20181-100UG	1 mg/ml in PBS with 50% glycerol, 1% BSA and 0.09% sodium azide	100 ug

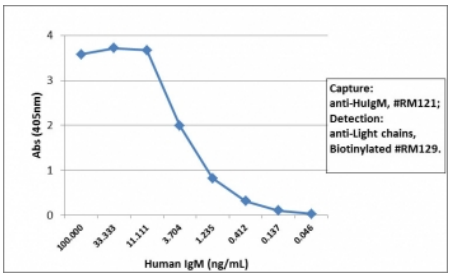
Recombinant RABBIT MONOCLONAL

Bulk quote request

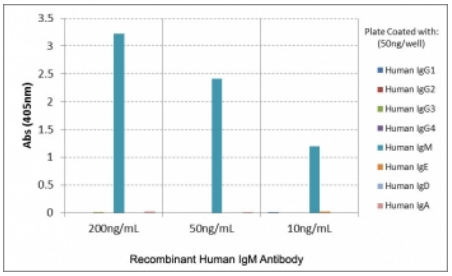
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	RM121
Purity	Protein A purified from animal origin-free supernatant
UniProt	P01871
Gene ID	3507
Applications	ELISA : 50ng/well-200ng/well (Capture); 0.05-0.2ug/ml (Detection) Immunocytochemistry : 0.5-2ug/ml Immunohistochemistry : 0.5-2ug/ml (1)
Limitations	This recombinant Human IgM antibody is available for research use only.



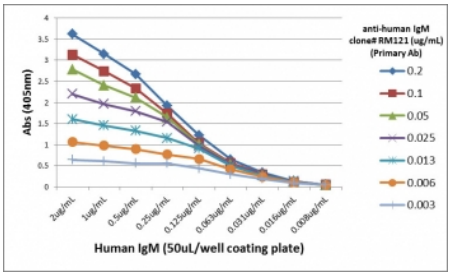
Sandwich ELISA of human plasma using the recombinant Human IgM antibody as the capture (100ng/well), and biotinylated anti-human light chains (Îº+Î») antibody RM129 as the detect, followed by an alkaline phosphatase conjugated streptavidin.



Sandwich ELISA of human IgM using the recombinant Human IgM antibody as the capture (100ng/well), and biotinylated anti-human light chains (κ+λ) antibody RM129 as the detect, followed by an alkaline phosphatase conjugated streptavidin.



ELISA of human immunoglobulins shows the recombinant Human IgM antibody reacts only to IgM. No cross reactivity with IgG, IgE, IgD, or IgA.



ELISA Titration: the plate was coated with different amounts of human IgM. A serial dilution of the recombinant Human IgM antibody was used as the primary and an alkaline phosphatase conjugated anti-rabbit IgG as the secondary.

Description

The Recombinant Human IgM antibody is designed as a recombinant reagent that reflects the structure and properties of human immunoglobulin M, the first antibody isotype produced in a primary immune response. IgM is critical for early host defense, appearing rapidly after antigen exposure and providing strong neutralizing and complement activating activity. In circulation, human IgM is secreted mainly as a pentameric molecule, enabling multivalent binding with high avidity. The Recombinant Human IgM antibody replicates these structural characteristics while lacking antigen specificity, making it a reliable isotype control and assay standard.

Structurally, IgM consists of five antibody subunits joined by disulfide bonds and stabilized by a joining (J) chain. This arrangement creates ten antigen binding sites per molecule, greatly enhancing avidity even when individual Fab affinities are modest. The Fc region of IgM binds complement component C1q with high efficiency, initiating the classical complement cascade. These properties make IgM indispensable for neutralization of pathogens early in infection. The Recombinant Human IgM antibody reproduces these features but is engineered to be antigen independent, allowing researchers to identify nonspecific binding in immunoassays.

Applications of the Recombinant Human IgM antibody include ELISA, where it serves as a negative control or calibration reagent, ensuring that assay signals arise from antigen antibody interactions rather than background adherence. In flow cytometry, it reveals baseline fluorescence and detects nonspecific interactions with cell surfaces or Fc receptors. In immunohistochemistry, the Recombinant Human IgM antibody highlights background staining in tissues rich in innate immune components. Recombinant production ensures batch to batch consistency, providing dependable results across studies.

This antibody is also highly useful in method development, where it can replace experimental reagents during optimization of blocking strategies, secondary antibody selection, or complement activation studies. In clinical research, analysis of human IgM levels is important for diagnosing immunodeficiencies, infections, and autoimmune conditions. Having a standardized recombinant reagent such as the Recombinant Human IgM antibody supports consistent

laboratory evaluation and enhances comparability across studies. Synonym terms such as recombinant human immunoglobulin M antibody and recombinant IgM isotype control antibody improve product visibility for different users.

By providing validated and reproducible detection, the Recombinant Human IgM antibody supports high quality data generation across diverse platforms. NSJ Bioreagents ensures rigorous quality control for this reagent, enabling scientists and clinicians to depend on its consistent performance. With the Recombinant Human IgM antibody, researchers can confidently separate specific immune recognition from nonspecific background, strengthening both experimental and diagnostic workflows.

This recombinant Human IgM antibody reacts to the heavy chain of human IgM. No cross reactivity with human IgG, IgA, IgD, or IgE.

Application Notes

The stated application concentrations are suggested starting points. Titration of the recombinant Human IgM antibody may be required due to differences in protocols and secondary/substrate sensitivity.

1. A pH6 Citrate buffer or pH9 Tris/EDTA buffer HIER step is recommended for testing of FFPE tissue sections.

Immunogen

Human IgM was used as the immunogen for this recombinant Human IgM antibody.

Storage

Store the recombinant Human IgM antibody at -20oC (with glycerol) or aliquot and store at -20oC (without glycerol).