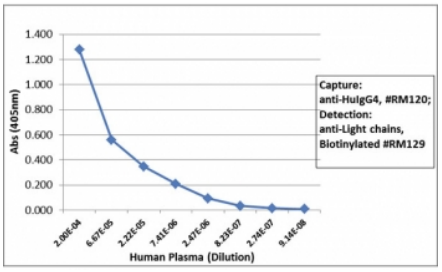
Recombinant Human IgG4 Antibody / Hinge region [clone RM120] (R20190)

Catalog No.	Formulation	Size
R20190-100UG	1 mg/ml in PBS with 50% glycerol, 1% BSA and 0.09% sodium azide	100 ug

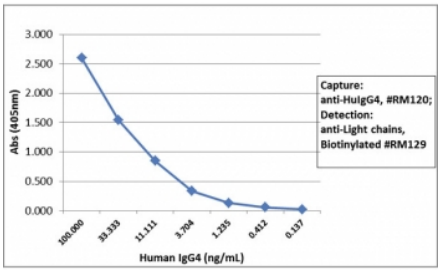
Recombinant RABBIT MONOCLONAL

Bulk quote request

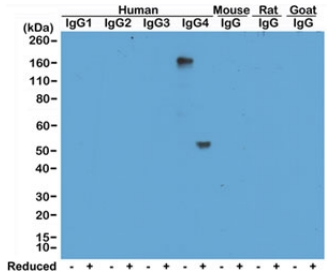
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	RM120
Purity	Protein A purified from animal origin-free supernatant
UniProt	P01861
Gene ID	3503
Applications	ELISA : 50ng/well-200ng/well (Capture); 0.05-0.2ug/ml (Detection) Immunocytochemistry : 1-10ug/ml Immunohistochemistry : 1-10ug/ml (1)
Limitations	This recombinant Human IgG4 antibody is available for research use only.



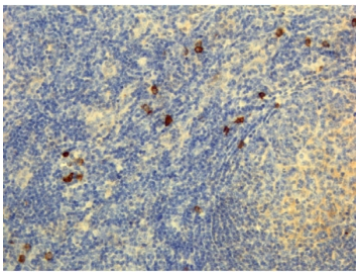
Sandwich ELISA with human plasma using recombinant Human IgG4 antibody as the capture, and biotinylated anti-human light chains (Îº +Î») antibody RM129 as the detect, followed by an AP conjugated streptavidin



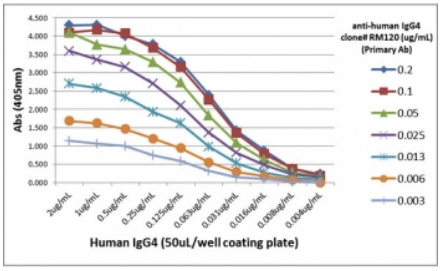
Sandwich ELISA with human IgG4 using recombinant Human IgG4 antibody as the capture, and biotinylated anti-human light chains (Îº+Î») antibody RM129 as the detect, followed by an AP conjugated streptavidin.



Western blot of human, mouse, rat, and goat IgG shows the recombinant Human IgG4 antibody reacts to hIgG4, in both whole molecule (~150kDa, non-reduced) and heavy chain (~50kDa, reduced) forms. No cross reactivity with other isotypes of hIgG, or mouse/rat/goat IgG.



IHC testing of FFPE human lymphoid tissue with recombinant Human IgG4 antibody.



ELISA Titration: the plate was coated with different amounts of hIgG4. A serial dilution of recombinant Human IgG4 antibody was used as the primary and an alkaline phosphatase conjugated anti-rabbit IgG as the secondary.

Description

The Recombinant Human IgG4 antibody is produced as a recombinant reagent that reflects the structure and properties of the IgG4 subclass of human immunoglobulin G. IgG4 is the least abundant IgG subclass in circulation, but it exhibits several distinctive biological features. Unlike IgG1, IgG2, and IgG3, IgG4 has limited ability to activate complement and interacts more weakly with Fc gamma receptors. It also undergoes a process called Fab arm exchange, in which half molecules can recombine to form bispecific antibodies. These properties make IgG4 an important player in regulating immune responses, often associated with tolerance rather than inflammation. The Recombinant Human IgG4 antibody preserves the constant region structure of this subclass while lacking antigen specificity, providing an essential isotype control and assay reference.

Structurally, IgG4 is composed of two heavy and two light chains forming the classic Y shaped immunoglobulin fold. Its unique constant region design contributes to reduced capacity for crosslinking antigens and diminished ability to trigger immune effector functions. Despite these differences, IgG4 remains functionally important in conditions where immune regulation is required. The Recombinant Human IgG4 antibody reproduces these features without variable region specificity, ensuring that any experimental signal detected with this reagent reflects background binding rather than true antigen recognition.

In laboratory applications, the Recombinant Human IgG4 antibody is widely used in ELISA to confirm assay specificity and provide a negative control for antigen independent binding. In flow cytometry, it establishes baseline fluorescence and detects nonspecific Fc receptor interactions. In immunohistochemistry, the antibody highlights background staining in tissues containing IgG4 producing plasma cells, an especially important factor in research on IgG4 related disease. Recombinant production ensures lot to lot consistency, eliminating variability that can affect hybridoma or serum derived reagents.

IgG4 has become an important subject in allergy and autoimmunity research. Elevated IgG4 levels are observed in

patients undergoing allergen immunotherapy, where it may contribute to immune tolerance. IgG4 is also central to IgG4 related disease, a systemic fibroinflammatory condition characterized by infiltration of IgG4 positive plasma cells into multiple organs. By serving as a reliable isotype control, the Recombinant Human IgG4 antibody supports accurate interpretation of immunoassay data in these research areas. Synonym terms such as recombinant human immunoglobulin G4 antibody and recombinant IgG4 isotype control antibody broaden accessibility for scientists searching under alternate naming conventions.

By delivering validated and reproducible performance, the Recombinant Human IgG4 antibody enhances reliability in both basic and translational immunology. NSJ Bioreagents supplies this reagent with strict quality standards, ensuring consistent performance in ELISA, flow cytometry, and tissue staining. With this reagent, researchers can confidently separate antigen specific responses from nonspecific background, supporting studies of IgG subclass biology and immune regulation.

This recombinant Human IgG4 antibody reacts to the heavy chain of hIgG4. No cross reactivity with human IgG1, IgG2, IgG3, IgM, IgA, IgD, IgE, mouse/rat/goat IgG.

Application Notes

The stated application concentrations are suggested starting points. Titration of the recombinant Human IgG4 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

Peptide corresponding to the hinge region of human IgG4 was used as the immunogen for this recombinant Human IgG4 antibody.

Storage

Store the recombinant Human IgG4 antibody at -20oC (with glycerol) or aliquot and store at -20oC (without glycerol).