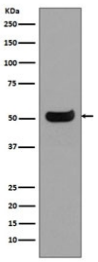
Human IgG4 Antibody / IGHG4 [clone DCF-9] (RQ4982)

Catalog No.	Formulation	Size
RQ4982	Antibody in PBS with 0.02% sodium azide, 50% glycerol and 0.4-0.5mg/ml BSA	100 ul

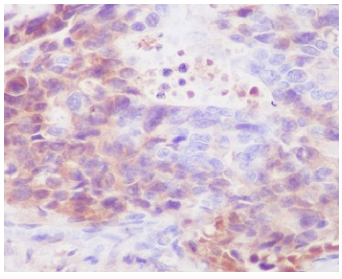
Recombinant RABBIT MONOCLONAL

Bulk quote request

Availability	1-2 weeks
Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	DCF-9
Purity	Affinity purified
UniProt	P01861
Applications	Western Blot : 1:1000-1:2000 Immunohistochemistry (FFPE) : 1:500-1:1000
Limitations	This Human IgG4 antibody is available for research use only.



Western blot testing of human spleen lysate with Human IgG4/IGHG4 antibody. Predicted molecular weight ~50 kDa.



IHC staining of FFPE human stomach carcinoma with Human IgG4/IGHG4 antibody. HIER: boil tissue sections in pH6, 10mM citrate buffer, for 10-20 min and allow to cool before testing.

Description

Human IgG4 antibody targets Immunoglobulin G4, a distinct IgG subclass defined by the gamma 4 heavy chain constant region encoded by the IGHG4 gene. Human IgG4 is characterized by unique structural and functional properties that differentiate it from other IgG subclasses, including reduced ability to activate complement and altered interactions with Fc gamma receptors. Because of these features, a human IgG4 antibody is widely used in immunology and pathology research focused on immune tolerance, chronic inflammation, and antibody subclass profiling.

Immunoglobulin G4 is most commonly produced during prolonged or repeated antigen exposure and is associated with immune modulation rather than strong pro-inflammatory responses. A hallmark feature of human IgG4 is Fab arm exchange, a process in which half-molecules swap between antibodies, resulting in functionally monovalent IgG4 molecules. This property limits immune complex formation and contributes to the anti-inflammatory behavior of IgG4. Use of a human IgG4 antibody enables investigation of these subclass-specific structural characteristics and their biological consequences.

Human IGHG4 plays a central role in IgG4-related disease, a fibroinflammatory condition characterized by dense lymphoplasmacytic infiltrates enriched in IgG4-positive plasma cells. Elevated numbers of IgG4-expressing cells are observed in affected organs such as pancreas, salivary glands, lymph nodes, and retroperitoneal tissue. Detection with a human IgG4/IGHG4 antibody is therefore essential for research into IgG4-related disease mechanisms, immune regulation, and chronic antigen-driven immune responses.

Beyond IgG4-related disease, Immunoglobulin G4 is implicated in allergic conditions, immune tolerance, and responses to allergen immunotherapy. Increased IgG4 levels often correlate with desensitization and reduced allergic reactivity, highlighting its role as a blocking antibody in allergic disease. A human IgG4 antibody supports studies of allergen-specific immune modulation, antibody subclass switching, and long-term immune adaptation.

Immunoglobulin G4 belongs to the immunoglobulin heavy chain constant region family and retains conserved Fc structural domains while exhibiting subclass-specific functional differences. Because IgG4 expression reflects subclass commitment rather than antigen specificity, detection with a human IgG4 antibody provides a direct measure of IgG4-associated immune activity. This reagent is valuable for studies of plasma cell differentiation, chronic inflammation, immune tolerance, and subclass-restricted antibody responses. NSJ Bioreagents offers this human IgG4 antibody to support research applications requiring precise detection of IgG4 expression.

Application Notes

Optimal dilution of the Human IgG4 antibody should be determined by the researcher.

Immunogen

A synthetic peptide specific to Human IgG4 / IGHG4 was used as the immunogen for the IgG4 antibody.

Storage

Store the Human IgG4 antibody at -20oC.