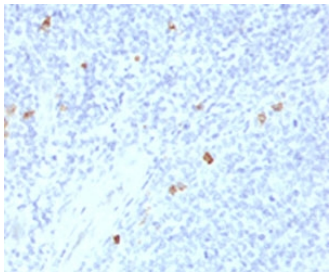
IgG4 Antibody / Immunoglobulin G4 [clone IHCG4-1] (V7232)

Catalog No.	Formulation	Size
V7232-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	100 ug
V7232-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	20 ug
V7232SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

Bulk quote request

Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG1, kappa
Clone Name	IHCG4-1
Purity	Protein G affinity chromatography
Buffer	1X PBS, pH 7.4
Gene ID	3503
Localization	Cytoplasmic
Applications	Immunohistochemistry (FFPE) : 1-2ug/ml for 30 min at RT
Limitations	This IgG4/Immunoglobulin G4 antibody is available for research use only.



IHC testing of human tonsil with IgG4/Immunoglobulin G4 antibody (clone IHCG4-1). Staining of FFPE tissue is enhanced by boiling sections in 10mM Tris with 1mM EDTA, pH9 for 10-20 min followed by cooling at RT for 20 min.

Description

IgG4 antibody recognizes Immunoglobulin G4, a distinct subclass of human IgG encoded by the IGHG4 gene. Immunoglobulin G4 is considered a non-classical IgG subclass with unique biological properties that distinguish it from IgG1, IgG2, and IgG3. Unlike other IgG subclasses, IgG4 shows minimal complement activation and reduced engagement of activating Fc gamma receptors, contributing to its anti-inflammatory and immunomodulatory behavior.

Immunoglobulin G4 is typically generated during chronic or repeated antigen exposure and is closely linked to immune tolerance. One of the most notable features of IgG4 biology is Fab arm exchange, a process in which half-antibodies swap heavy and light chain pairs to generate functionally monovalent antibodies. This structural characteristic limits immune complex formation and downstream inflammatory signaling, making IgG4 antibody reagents particularly valuable for studying regulatory immune mechanisms.

IgG4 expression is strongly associated with IgG4-related disease, a systemic fibroinflammatory condition characterized by tissue infiltration of IgG4-positive plasma cells and lymphocytes. These infiltrates are commonly observed in organs such as the pancreas, salivary glands, lymph nodes, and biliary tract. Detection of IgG4-positive cells using an IgG4 antibody is widely applied in research focused on immune cell differentiation, chronic inflammation, and plasma cell biology.

In allergy and allergen immunotherapy research, Immunoglobulin G4 plays a protective role by blocking IgE-mediated immune responses. Elevated IgG4 levels are frequently observed following successful desensitization protocols, where IgG4 competes with IgE for allergen binding and limits mast cell activation. An IgG4 antibody supports studies examining antibody class switching, immune tolerance, and long-term adaptation of the humoral immune response.

Immunoglobulin G4 belongs to the immunoglobulin heavy chain constant region family and maintains conserved Fc architecture while exhibiting subclass-specific functional behavior. This IgG4 antibody is suitable for detecting IgG4 expression in immune tissues and experimental models, supporting research into adaptive immunity, antibody subclass regulation, and immune homeostasis. NSJ Bioreagents provides this antibody for research applications requiring specific recognition of IgG4.

Application Notes

The concentration stated for each application is a general starting point. Variations in protocols, secondaries and substrates may require the IgG4/Immunoglobulin G4 antibody to be titered up or down for optimal performance.

Immunogen

A human recombinant protein corresponding to the Fc region was used as the immunogen for this IgG4/Immunoglobulin G4 antibody.

Storage

Store the IgG4/Immunoglobulin G4 antibody at 2-8oC (with azide) or aliquot and store at -20oC or colder (without azide).

References (1)