IgG4 (M)

Format	Catalog No.	Pack size	Dilution
Concentrated	GB3115A,B	0.1, 0.5 mL	1:100
Prediluted	GB3115AA	6.0 mL	Ready to use

PRODUCT DESCRIPTION -

IgG4 is a subclass of immunoglobulin G antibodies. Mouse monoclonal IgG4 [HP6025] targets the Fc region of human IgG4. IgG4 is beneficial for diagnosing IgG4-related systemic illness (IgG4-RSD). IgG4-RSD, or IgG4-related sclerosing disease, manifests in various organs and is characterized by lymphoplasmacytic infiltration, mass formation, sclerosis, obliterative phlebitis, and elevated levels of IgG4+ plasma cells, along with a high IgG4+/IgG+ ratio, generally exceeding 30%.

IgG4 is overexpressed in inflammatory pseudotumor (IPT) and underexpressed in inflammatory myofibroblastic tumor (IMT). IgG4 may serve as a valuable differential marker in conjunction with IgG (the IgG4+/IgG+ plasma cell ratio is elevated in IPT) and ALK (which is positive in IMT).

In pulmonary nodular lymphoid hyperplasia (PNLH), there is an elevated quantity of IgG4+ plasma cells and an increased ratio of IgG4+ to IgG+ plasma cells relative to other pulmonary lymphoid proliferations. These attributes may assist in differentiating PNLH from low-grade B-cell lymphoma of the bronchus-associated lymphoid tissue (BALT).

INTENDED USE -

IgG4 (M) [HP6025] is a mouse monoclonal antibody designed for laboratory applications in the qualitative detection of IgG4 immunoglobulin via immunohistochemistry (IHC) in formalin-fixed paraffin-embedded (FFPE) human tissues. The clinical interpretation of any staining or its absence must be supplemented by morphological studies utilizing appropriate controls and assessed in conjunction with the patient's clinical history and other diagnostic tests by a skilled pathologist.

SUMMARY AND EXPLANATION -

IgG4 is a subclass of immunoglobulin G antibodies. Mouse monoclonal IgG4 [HP6025] specifically targets the Fc region of human IgG4. IgG4 is beneficial for diagnosing IgG4-related systemic illness (IgG4-RSD).

IgG4-RSD, or IgG4-related sclerosing disease, manifests in various organs and is characterized by lymphoplasmacytic infiltration, mass formation, sclerosis, obliterative phlebitis, and elevated levels of IgG4+ plasma cells, alongside a high IgG4+/IgG+ ratio, generally exceeding 30% . IgG4 is overexpressed in inflammatory pseudotumor (IPT) and underexpressed in inflammatory myofibroblastic tumor (IMT). IgG4 may serve as a valuable differential marker in conjunction with IgG (the IgG4+/IgG+ plasma cell ratio is elevated in IPT) and ALK (which is positive in IMT) . Pulmonary nodular lymphoid hyperplasia (PNLH) is characterized by an elevated quantity of IgG4+ plasma cells and an increased ratio of IgG4+ to IgG+ plasma cells relative to other pulmonary lymphoid proliferations. These traits may assist in differentiating PNLH from low-grade B-cell lymphoma of the bronchus-associated lymphoid tissue (BALT). IgG4 overexpression occurs in 39% of primary cutaneous marginal zone lymphomas, suggesting localized immunologic (IgG4) pathogenetic involvement in the early stages of the disease. Increased levels of IgG4+ plasma cells and a heightened ratio of IgG4+ plasma cells to IgG+ plasma cells may facilitate the diagnosis of autoimmune pancreatitis (AIP, also known as IgG4-related sclerosing pancreatitis) in contrast to other mass-forming pancreatic lesions, particularly invasive ductal carcinoma of the pancreas. Historically, immunofluorescence techniques were employed to identify IgGs in formalin-fixed paraffin-embedded tissues. Nonetheless, immunohistochemistry techniques are increasingly employed.

PRINCIPLE OF PROCEDURE -

Antigen detection in tissues and cells is a multi-step immunohistochemistry procedure. The first step attaches the primary antibody to its designated epitope. Following the tagging of the antigen with a primary antibody, a one-, two-, or three-step detection protocol may be utilized. The one-step approach will utilize an enzyme-conjugated polymer that attaches to the main antibody. A two-step approach will involve the addition of a secondary antibody to bind to the primary antibody. An enzyme-conjugated polymer is subsequently introduced to bind to the secondary antibody. The three-step detection protocol will include the addition of a secondary antibody to bind to the main antibody, succeeded by a linker antibody step to enhance binding efficacy. An enzyme-conjugated polymer is subsequently introduced to attach to the linker antibody. The presence of bound antibodies is demonstrated by a colorimetric response.

SOURCE - Mouse monoclonal

SPECIES REACTIVITY - Human; others not tested

CLONE - : HP6025

ISOTYPE - IgG1

PROTEIN CONCENTRATION - Call for lot specific Ig concentration.

EPITOPE/ANTIGEN - Fc region of human IgG4

CELLULAR LOCALISATION - Cytoplasmic

POSITIVE TISSUE CONTROL - Spleen

KNOWN APPLICATIONS - I mmunohistochemistry
30-40 min. At RT. Staining of formalin-fixed tissues requires heating tissue sections in between pH 7.4 - 9.0 for 45 min at 95ºC followed by cooling at room temperature for 20 minutes.

SUPPLIED AS - Buffer with protein carrier and preservative

STORAGE AND STABILITY -

Store at 2ºC to 8ºC. The product is stable to the expiration date printed on the label, when stored under these conditions. Do not use after expiration date. Diluted reagents should be used promptly; any remaining reagent should be stored at 2ºC to 8ºC.

Materials required but not provided -

1) Positive tissue control - Spleen
2) Negativecontroltissue(internalorexternal)
3) Microscopeslidesandcoverslips
4) Stainingjarsorbaths
5) Timer
6) Xyleneorxylenesubstitute
7) Ethanolorreagentalcohol
8) Deionizedordistilledwater
9) Heatingequipmentorenzymefortissuepretreatmentstep
10) Detection system
11) Chromogen
12) Wash buffer
13) Hematoxylin
14) Antibody diluents
15) Peroxide block
16) Light microscope
17) Mounting medium

LIMITATIONS-

The optimum antibody dilution and protocols for a specific application can vary. These include, but are not limited to fixation, heat-retrieval method, incubation times, tissue section thickness and detection kit used. Due to the superior sensitivity of these unique reagents, the recommended incubation times and titers listed are not applicable to other detection systems, as results may vary. The data sheet recommendations and protocols are based on exclusive use of Genebio products. Ultimately, it is the responsibility of the investigator to determine optimal conditions.