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Product Information

MONOCLONAL ANTI-HUMAN IgG4

Clone HP-6023

Mouse Ascites Fluid

Product Number I 9888

Product Description

Monoclonal anti-Human IgG4 (mouse IgG3 isotype) is derived from the hybridoma produced by the fusion of mouse myeloma cells and splenocytes from an immunized mouse. Purified human IgG myeloma proteins covalently coupled to polyaminostyrene (PAS) microbeads were used as the immunogen. The isotype is determined by a double diffusion assay using immunoglobulin and subclass specific antisera. The hybridoma was developed by Dr. C.B. Reimer and coworkers at the Center for Disease Control (CDC).¹

Monoclonal anti-Human IgG4 is specific for the IgG4 subclass and nonreactive with IgG1, IgG2, and IgG3 in an ELISA. The antibody recognizes an epitope expressed in the pFc region of IgG4. The estimated association constant of this antibody with its ligand is 19×10^7 L/M. The IUIS/WHO² study singled out this monoclonal antibody as the most widely applicable IgG4 specific reagent.

Monoclonal anti-Human IgG4 may be used for the identification of the IgG4 subclass by various immunoassays including: ELISA, Imprint Immunofixation (IIF), Immunofluorometric Assay (IFMA), hemagglutination (HA), Hemagglutination Inhibition (HAI), Particle Counting Immunoassay (PACIA), and immunohistological applications.

Human IgG consists of four subclasses (1-4) that can be recognized by antigenic differences in their heavy chains. They constitute approximately 65, 30, 5 and 4% of the total IgG, respectively. Each subclass has different biological and physio-chemical properties. The IgG subclass may be preferentially produced in response to different antigens and pathological conditions. For instance, anti-polysaccharide responses are mainly of the IgG2 subclass while protein antigens give rise to IgG1 and IgG3 antibodies. Lipopolysaccharides stimulate an IgG2 response in PBL's and an IgG1 response in the spleen. Human IgG1 is the predominant subclass of *in vivo* and *in vitro* produced anti-tetanus toxoid antibodies. Only IgG1 and IgG3 are capable of adherence to mononuclear

phagocytes. Serum IgG subclass deficiencies have been recorded for different patient groups. For example, IgG2 and IgG4 deficiency is associated with IgA deficiency as found in patients of ataxia telangiectasia. Low IgG2 levels were found in patients with SLE and juvenile diabetes melitus. A disproportionate elevation of IgG1 has also been found in the cerebral spinal fluid of patients with multiple sclerosis.

Examination of the distribution pattern of IgG subclasses in different types of diseases may provide insight into the immunological processes involved and may assist in the diagnosis of various disorders.

Reagents

The product is provided as ascites fluid with 0.1% sodium azide as a preservative.

Precautions and Disclaimer

Due to the sodium azide content a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazards and safe handling practices.

Storage/Stability

Store at 2-8 °C.

For extended storage, the solution may be frozen in working aliquots. Repeated freezing and thawing is not recommended. Storage in "frost-free" freezers is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use.

Product Profile

The minimum antibody titer of 1:2,000 was determined by an ELISA using 1 µg/ml of freshly prepared human IgG4 myeloma proteins for coating. In order to obtain best results it is recommended that each individual user determine their working dilution by titration assay.

References

1. Reimer, C.B., et al., Hybridoma, **3**, 263 (1984).
2. Jefferies, R., et al., Immunol. Lett., **10**, 223 (1985).

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