ProductInformation

MONOCLONAL ANTI-HUMAN IgG4
CLONE HP-6025
Mouse Ascites Fluid

Product No. **I 7385**

Monoclonal Anti-Human IgG4 (mouse IgG1 isotype) is derived from the hybridoma produced by the fusion of mouse myeloma cells and splenocytes from an immunized mouse. Purified human IgG4 myeloma proteins covalently coupled to polyaminostyrene (PAS) microbeads were used as the immunogen.[1] The isotype is determined using Sigma ImmunoType™ Kit (Sigma Stock No. ISO-1) and by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents (Sigma Stock No. ISO-2).

Monoclonal Anti-Human IgG4 is specific for the IgG4 subclass and nonreactive with IgG1, IgG2 and IgG3 in an ELISA. The IUIS/WHO[2] study singled out this monoclonal antibody as one of the most widely applicable IgG4 specific monoclonal antibodies.

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 detection of cytoplasmic IgG.

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 physiochemical 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. Lipopolysaccahrides 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.[3] Only IgG1 and IgG3 are capable of adherence to mononuclear phagocytes while IgG2 and IgG4 autoantibodies are not associated with disorders such as hemolytic anemia.[4] 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 telangiextasia. Low IgG2 levels were found in patients with SLE and juvenile diabetes melitus.[5] A disproportionate elevation of IgG1 has also been found in the cerebral spinal fluid of patients with multiple sclerosis.[6]

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 15 mM 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.

Product Profile
A minimum working dilution of 1:5,000 is determined by indirect 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.

Storage
For continuous use, store at 2-8 °C for a maximum of one month. 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.

References

1. Reimer, C., et al., Hybridoma, **3**, 263 (1984).
2. Jefferies, R., et al., Immunol. Lett., **10**, 223 (1985).
3. Stevens, R., et al., J. Clin. Immunol., **3**, 65 (1986).
4. Van der Meulen, F., et al., Brit. J. Haematol., **46**, 47 (1980).
5. Oxelius, V., Amer. J. Med., **30/3**, 7 (1984).
6. Kaschka, W., et al., Infect. Immun., **26**, 933 (1979).

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