Saint Louis, Missouri 63103 USA
Telephone (800) 325-5832 (314) 771-5765
Fax (314) 286-7828
email: techserv@sial.com
sigma-aldrich.com

ProductInformation

MONOCLONAL ANTI-HUMAN LAMBDA LIGHT CHAINS
Clone: HP-6054
Purified mouse immunoglobulin

Product Number **L6287**

Product Description

Monoclonal Anti Human Lambda Light Chains (mouse IgG_{2a} isotype) is obtained from BALB/c mice bearing the HP-6054 hybridoma. This hybridoma is a cloned cell line derived from a fusion between a mouse myeloma cell line and splenocytes from a BALB/c mouse immunized with purified human IgG myeloma proteins covalently coupled to polyaminostyrene (PAS) microbeads. The hybridoma has been developed by Dr. C.B. Reimer and coworkers at the Center for Disease Control (CDC)[1].

Monoclonal Anti Human Lambda Light Chains is specific for the lambda light chains of human immunoglobulin (all isotypes). It does not react with human kappa light chains, using human IgG and IgA myeloma proteins containing the appropriate light chains and using Bence Jones proteins coated on microtiter plates in ELISA. It recognizes both the heavy chain-bound and the free (Bence Jones) human lambda light chain. The estimated association constant of the antibody to its ligand is $1.2X10^9$ L/M.

Monoclonal Anti Human Lambda Light Chains may be used for identification of human lambda light chains using various immunological techniques. It can be used in enzyme linked immunosorbent assay (ELISA), immunohistological applications in frozen or fixed tissues, RIA, precipitation assays, and immunofixation. The antibody was found to be useful for conjugation to biotin, FITC, enzymes and radioisotopes.

Monoclonal Immunoglobulins are made up of 2 heavy and 2 light polypeptide chains held together by noncovalent forces and usually by interchain disulphide bridges. The various types of human (and other mammalian) immunoglobulins contain one of the two existing light chain types kappa or lambda in which multiple structural differences are reflected in antigenic variety mainly in the N-terminal (variable) domain of the chains. In monoclonal disorders such as myeloma and macroglobulinemia an increase in the level of a single immunoglobulin class can be accompanied by disproportionate increase in either lambda or kappa light chains.

Furthermore, in many cases of B-cell malignancy origin, there is an increasing production of light chains that are not combined with heavy chains and are circulating in the various body fluids (blood, CSF, tissues) and are secreted in enormous amounts as free molecules in the urine (Bence Jones paraproteins). Such pathological conditions may be undetectable by simple immuno-globulin quantification, because it may be present despite normal values for total immunoglobulin concentrations. Light chain typing, together with serum or urine electrophoresis is useful in diagnosis and analysis of immunoglobulin gammapathies and some inflammatory neurological diseases. Monoclonal antibodies which are specific for the various human light chains are useful tools for the diagnosis and analysis of chain disorders by applying additional technique such as ELISA, immunoblotting and immunohistology.

Reagents

The product is provided as (Protein A) purified antibody in 0.01M PBS pH 7.4 with 15 mM sodium azide (see MSDS)* as a preservative.

Antibody Concentration: 5.3 mg/ml

Precautions and Disclaimer

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

Storage/Stability

For continuous use, store at 2-8°C for up to one month. For extended storage, freeze 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

Working concentration is 1-5 µg/ml as determined by ELISA, using 5 µg/ml freshly prepared human Bence-Jones lambda light chains for coating.

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working dilutions by titration test.

References

1. Reimer, C.B., et al, Hybridoma, **3**, 263-275 (1984).
2. Phillips, D.J., et al, Immunol. Lett., **17**, 159-168 (1987).
3. Hamilton, R.G., et al, J. Immunoassay, **9**, 275-296 (1988).
4. Black, C.M., et al, J. Immunol. Meth., **106**, 71-81 (1988).
5. Whicher, J.T., et al,Ann. Clin. Biochem., **24**, 119-132 (1987).
6. Prozanski, W., In "Paraproteins in Disease: Investigation of plasma cell discrasias", Prozanski, W., and Keystone, E.C., Eds. Churchill Livingston, Edinburgh- New York, pp 54-92, (1986).

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