

Product No. F-6649

Lot 085H4826

**Monoclonal Anti-Human Kappa Light Chain
FITC Conjugate**
Purified Antibody
Clone KP-53

Monoclonal Anti-Human Kappa (κ) Light Chain (mouse IgG1 isotype) is derived from the KP-53 hybridoma produced by the fusion of mouse myeloma cells and splenocytes from immunized BALB/c mice. Purified Bence-Jones kappa protein was used as the immunogen. 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). Purified immunoglobulin is conjugated to fluorescein isothiocyanate (FITC) and further purified to remove unconjugated FITC. The product is provided as a solution (100 $\mu\text{g}/\text{ml}$) in 0.01 M phosphate buffered saline, pH 7.4, containing 1% BSA and 0.1% sodium azide (see MSDS)* as a preservative.

Specificity

FITC Monoclonal Anti-Human Kappa Light Chain recognizes the human kappa light chain expressed on the surface of 50-70% of normal B cells, and by Ig κ^+ leukemic and lymphoma cells. It detects cytoplasmic kappa immunoglobulins in mature B cells and plasma cells. The product reacts with human κ^+ cultured cells, but not with human λ^+ cultured cells. The monoclonal antibody reacts with the kappa light chains of immunoglobulins and free kappa light chains. It does not cross react with the lambda chains of human immunoglobulins and free lambda light chains.

Description

The typical human immunoglobulin molecule consists of two identical heavy chains, disulfide-linked to one another to form a homodimer. Each heavy chain is, in turn, disulfide-linked to an identical light chain (23 kD). Normal immunoglobulins consist of two light chains isotypes, kappa (κ) and lambda (λ). The same two antigenic groups of molecules are present in all normal human immunoglobulins classes. Each molecule contains either κ or λ light chains. About two-thirds of human light chains are κ . Three allotypes of κ chains,

designated Km1, Km1.2 and Km3 are known. Immunoglobulins bearing κ light chains are present in 50-70% of normal peripheral blood B lymphocytes and on Ig κ^+ leukemic or lymphoma cells. In human lymphoid tissue κ -bearing B lymphocytes are detectable in the follicles. Mantle zones are labeled in a mosaic fashion while immuno complexes bound to follicular dendritic cells are labeled in the germinal centers. Staining of plasma cells and of extracellular and cell-absorbed immunoglobulins is also found. FITC Monoclonal Anti-Human Kappa Light Chain may be used in flow cytometry, immunohistochemistry and immunocytochemistry. The epitope recognized by the antibody is detectable in acetone-fixed, frozen sections and in proteolytic enzyme-digested, formalin-fixed, paraffin-embedded tissue sections.^{1,2}

Uses

FITC Monoclonal Anti-Human Kappa Light Chain may be used for:

1. Identification and clonality assessment of normal, leukemic and lymphoma B cells in smears, cytopins, cell suspensions and frozen sections.
2. Enumeration of kappa light chain-expressing B lymphocytes in peripheral blood or tissue.
3. Studies of Fc receptor positive, kappa immunoglobulin binding cells.

F/P Molar Ratio: 4.1

Flow Cytometry

It is recommended that 10 μl of conjugate be used for labeling of 1×10^6 human peripheral blood lymphocytes in flow cytometric applications.

Immunohistology

A dilution of 1:2 was determined indirect immunohistology using formalin-fixed, paraffin-embedded human tonsil sections.

Storage

Store at 2-8°C. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use.

*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.

References

1. Tetú, B., et al., Am. J. Clin. Pathol., **85**, 25 (1986).
2. Shi, S., et al., J. Histochem. Cytochem., **39**, 741 (1991).

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