Anti-Kappa Light Chain Antibody [A8H10]

HA601099

Product Type:	Mouse monoclonal IgG1, primary antibodies
Species reactivity:	Human
Applications:	IHC-P, IF-Tissue, WB
Molecular Wt:	Predicted band size: 12 kDa
Clone number:	A8H10

Description: Each immunoglobulin molecule consists of two identical heavy chains and two identical light chains. There are two types of light chains designated as kappa and lambda. The gene rearrangement process that generates the immunoglobulin molecule results in either a productive kappa gene or a productive lambda gene. The mechanics of the rearrangement process normally produce approximately twice as many kappa-bearing cells as lambda. However this ratio loses during malignant transformation. The kappa light chain antibody labels kappa light chain expressing B lymphocytes and plasma cells. Other cells may also express kappa light chain due to nonspecific uptake of immunoglobulin. Individual B cells express either kappa or lambda light chains. Monoclonality is generally assumed to be evidence of a malignant proliferation. Paired with lambda, kappa light chain is useful in identifying monoclonality of lymphoid malignancies. Anti-Kappa detects surface immunoglobulin on normal and neoplastic B-cells. In paraffin-embedded tissue, anti-kappa exhibits strong staining of kappa-positive plasma cells and cells that have absorbed exogenous immunoglobulins. When dealing with B-cell neoplasms, the determination of light chain ratios remains the centerpiece. Most B-cell lymphomas express either kappa or lambda light chains, whereas reactive proliferations display a mixture of kappa and lambda positive cells. If only a single light chain type is detected, a lymphoproliferative disorder exists. Monoclonality is determined by a kappa-lambda ratio of greater than or equal to 3:1 or a lambda-kappa ratio greater than 2:1. Tonsil is an appropriate control: Approximately half of the peripheral mantle zone B-cells must show a distinct membranous staining reaction for IgK, while the remaining mantle zone B-cells (which are IgL producing) should be unstained.

Immunogen:	Recombinant full protein within human IGKC.
Positive control:	Human plasma lysates, human tonsil tissue, human appendix tissue.
Subcellular location:	Cell membrane, Secreted.
Database links:	SwissProt: P01834 Human
Recommended Dilutions:	
IHC-P	1:500
IF-Tissue	1:50
WB	1:1,000
Storage Buffer:	PBS (pH7.4), 0.1% BSA, 40% Glycerol. Preservative: 0.05% SodiumAzide.
Storage Instruction:	Store at +4℃ after thawing. Aliquot store at -20℃. Avoid repeated freeze / thaw cycles.
Purity:	Protein A affinity purified.

Images

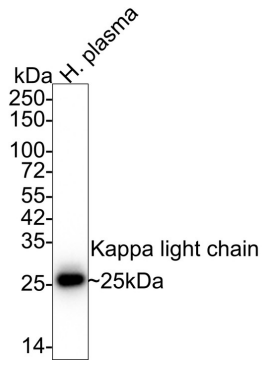

Fig1: Western blot analysis of Kappa Light Chain on human plasma lysates with Mouse anti-Kappa Light Chain antibody (HA601099) at 1/1,000 dilution.

Lysates/proteins at 30 µg/Lane.

Predicted band size: 12 kDa
Observed band size: 25 kDa

Exposure time: 5 seconds;

4-20% SDS-PAGE gel.

Proteins were transferred to a PVDF membrane and blocked with 5% NFDM/TBST for 1 hour at room temperature. The primary antibody (HA601099) at 1/1,000 dilution was used in 5% NFDM/TBST at 4℃ overnight. Anti-Mouse IgG for IP Nano-secondary antibody (NBI02H) at 1/5,000 dilution was used for 1 hour at room temperature.

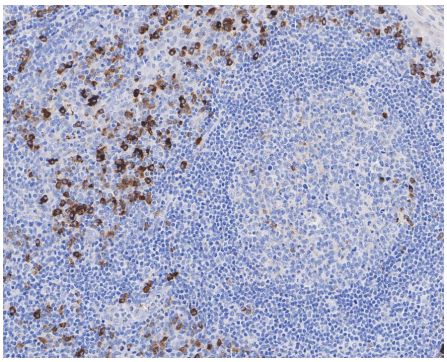

Fig2: Immunohistochemical analysis of paraffin-embedded human tonsil tissue with Mouse anti-Kappa Light Chain antibody (HA601099) at 1/500 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA601099) at 1/500 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

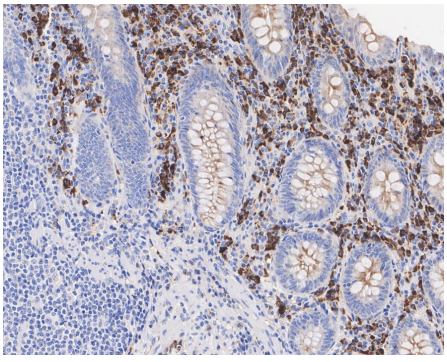

Fig3: Immunohistochemical analysis of paraffin-embedded human appendix tissue with Mouse anti-Kappa Light Chain antibody (HA601099) at 1/500 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA601099) at 1/500 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

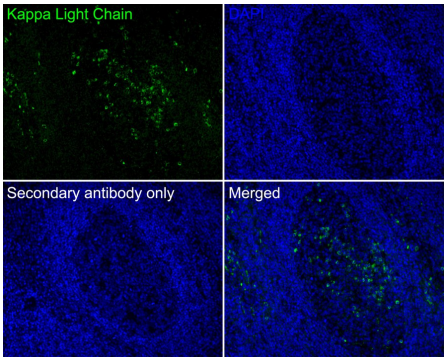

Fig4: Immunofluorescence analysis of paraffin-embedded human tonsil tissue labeling Kappa Light Chain with Mouse anti-Kappa Light Chain antibody (HA601099) at 1/50 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 10% negative goat serum for 1 hour at room temperature, washed with PBS, and then probed with the primary antibody (HA601099, green) at 1/50 dilution overnight at 4 ℃, washed with PBS.

Goat Anti-Mouse IgG H&L (iFluor™ 488, HA1125) was used as the secondary antibody at 1/1,000 dilution. Nuclei were counterstained with DAPI (blue).

Background References

1. McHeyzer-Williams M., Okitsu S., Wang N., McHeyzer-Williams L. Molecular programming of B cell memory. Nat. Rev. Immunol. 12:24-34 (2012)
2. Jaffe ES et al (Eds) WHO Classification Tumours of Haematopoietic and Lymphoid Tissue. IARC Press 2001. Ashton-Key M, Jessup E, Isaacson PG. Immunoglobulin light chain staining in paraffin-embedded tissue using a heat mediated epitope retrieval method. Histopathology. 1996 Dec;29(6):525-31.