SANTA CRUZ BIOTECHNOLOGY, INC.

Ig κ chain (MEM-09): sc-51637

BACKGROUND

Antibody producing cells of the immune system require multiple rearrangements of immunoglobulin (antibody, Ig) genes. Immunoglobulins are four-chain, Y-shaped, monomeric structures of two identical heavy chains and two identical light chains held together through interchain disulfide bonds. Immunoglobulins in vertebrates help to remove non-self molecules or cells (antigens) by recognizing and binding to the antigen and carrying out effector functions that activate the immune system. Variable genetic combinations of the five heavy chain classes (μ, δ, γ, ε and α) and the two light chain isotypes κ and λ confer the role of an antibody. The variable region genes encoding immunoglobulin κ and λ chains are assembled from three DNA segments, the V, C and J genes. Human κ light chain genes map to chromosome 2 and the human λ light chain genes map to chromosome 22. κ gene recombination can precede λ gene recombination during B-cell ontogeny and only a single light chain type is expressed in individual B cells. Antibodies in camels and sharks can lack light chain, suggesting that light chain may not be essential for antigen binding in some vertebrates.

REFERENCES

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3. Dyer, M.J., et al. 1981. Committed T lymphocyte stem cells of rats. Characterization by surface W3/13 antigen and radiosensitivity. J. Exp. Med. 154: 1164-1177.
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5. Durdik, J., et al. 1984. Novel κ light-chain gene rearrangements in mouse λ light chain-producing B lymphocytes. Nature 307: 749-752.
6. Horejsi, V., et al. 1986. Monoclonal antibodies against human leucocyte antigens. I. Antibodies against β-2-Microglobulin, immunoglobulin κ light chains, HLA-DR-like antigens, T8 antigen, T1 antigen, a monocyte antigen, and a pan-leucocyte antigen. Folia Biol. 32: 12-25.
7. Pilstrom, L., et al. 2002. The mysterious immunoglobulin light chain. Dev. Comp. Immunol. 26: 207-215.
8. Li, M., et al. 2004. Expression of immunoglobulin κ light chain constant region in abnormal human cervical epithelial cells. Int. J. Biochem. Cell Biol. 36: 2250-2257.
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CHROMOSOMAL LOCATION

Genetic locus: IGKC (human) mapping to 2p25.3.

SOURCE

Ig κ chain (MEM-09) is a mouse monoclonal antibody raised against crude thymus membrane fraction of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

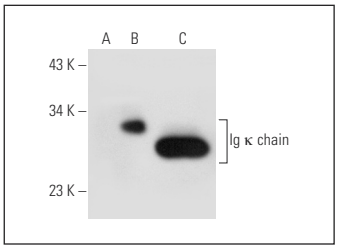
APPLICATIONS

Ig κ chain (MEM-09) is recommended for detection of secreted and B cell-surface Ig and specifically detects Ig κ light chains of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10^6 cells).

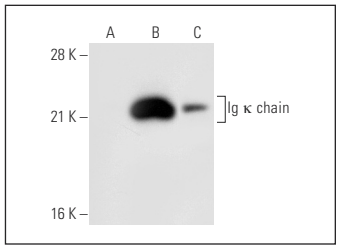
Molecular Weight of Ig κ chain: 28 kDa.

Positive Controls: Ig κ chain (h3): 293T Lysate: sc-117325, Ig κ chain (h): 293T Lysate: sc-111799 or NAMALWA cell lysate: sc-2234

DATA



Ig κ chain (MEM-09): sc-51637. Western blot analysis of Ig κ chain expression in non-transfected 293T: sc-117752 (**A**), human Ig κ chain transfected 293T: sc-111799 (**B**) and human PBL (**C**) whole cell lysates.



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STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.