

Ig λ light chain (h3): 293T Lysate: sc-117328

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 (M, D, G, E and A) and the two light chain isotypes, κ and λ , confer the role of an antibody. The variable region genes encoding Ig κ and λ chains are assembled from three DNA segments, the V, C and J genes. Human Ig κ light chain genes map to chromosome 2 and the human Ig 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

- Hieter, P.A., et al. 1980. Cloned human and mouse κ immunoglobulin constant and J region genes conserve homology in functional segments. *Cell* 22: 197-207.
- Mason, D.W., et al. 1981. The rat mixed lymphocyte reaction: roles of a dendritic cell in intestinal lymph and T cell subsets defined by monoclonal antibodies. *Immunology* 44: 75-87.
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- Hieter, P.A., et al. 1982. Evolution of human immunoglobulin κ J region genes. *J. Biol. Chem.* 257: 1516-1522.
- Durdik, J., et al. 1984. Novel κ light-chain gene rearrangements in mouse λ light chain-producing B lymphocytes. *Nature* 307: 749-752.
- 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.
- Pilstrom, L. 2002. The mysterious immunoglobulin light chain. *Dev. Comp. Immunol.* 26: 207-215.
- 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.
- LocusLink Report (LocusID: 3514). <http://www.ncbi.nlm.nih.gov/LocusLink/>

CHROMOSOMAL LOCATION

Genetic locus: IGL (human) mapping to 22q11.21.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PRODUCT

Ig λ light chain (h3): 293T Lysate represents a lysate of human Ig λ light chain transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

APPLICATIONS

Ig λ light chain (h3): 293T Lysate is suitable as a Western Blotting positive control for human reactive Ig λ light chain antibodies. Recommended use: 10-20 μ l per lane.

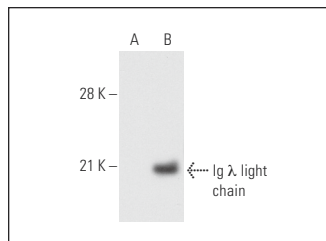
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

Ig λ light chain (JDC-12): sc-69828 is recommended as a positive control antibody for Western Blot analysis of enhanced human Ig λ light chain expression in Ig λ light chain transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

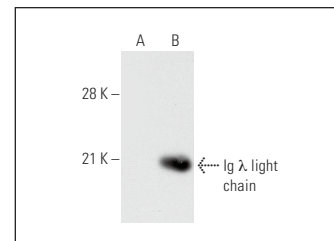
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:
1) Western Blotting: use m-IgG λ BP-HRP: sc-516132 or m-IgG λ BP-HRP (Cruz Marker): sc-516132-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

DATA



Ig λ light chain (JDC-12): sc-69828. Western blot analysis of Ig λ light chain expression in non-transfected: sc-117752 (A) and human Ig λ light chain transfected: sc-117328 (B) 293T whole cell lysates.



Ig λ light chain (mAHuGL): sc-73325. Western blot analysis of Ig λ light chain expression in non-transfected: sc-117752 (A) and human Ig λ light chain transfected: sc-117328 (B) 293T whole cell lysates.

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.