

# LT- $\beta$ (399CT9.3.4): sc-517341

## BACKGROUND

Tumor necrosis factor (TNF) and lymphotoxin- $\alpha$  (LT- $\alpha$ , also known as TNF $\alpha$ ) are members of a family of secreted and cell surface cytokines that participate in the regulation of immune and inflammatory responses. LT- $\beta$  (lymphotoxin- $\beta$  or TNFC) is a type II membrane protein with significant homology to TNF, LT- $\alpha$  and the ligand for the CD40 receptor. LT- $\alpha$  is present on the surface of activated T, B and LAK cells as a complex with LT- $\beta$ . LT- $\beta$ , also expressed by active lymphocytes, forms a heterotrimer with LT- $\alpha$  on the cell surface and anchors LT- $\alpha$  to the cell surface. A TNF receptor-related protein, the LT- $\beta$  receptor (also known as TNFC receptor), is the human receptor for the LT- $\alpha$ /LT- $\beta$  heterotrimer. There are two LT- $\beta$  isoforms expressed in human lymphoid cell lines and non-Hodgkin's lymphomas. The gene which encodes LT- $\beta$  maps to the major histocompatibility complex region on human chromosome 6p21.33.

## REFERENCES

1. Browning, J.L., Ngam-ek, A., Lawton, P., DeMarinis, J., Tizard, R., Chow, E.P., Hession, C., O'Brine-Greco, B., Foley, S.F. and Ware, C.F. 1993. Lymphotoxin- $\beta$ , a novel member of the TNF family that forms a heteromeric complex with lymphotoxin on the cell surface. *Cell* 72: 847-856.
2. Crowe, P.D., VanArsdale, T.L., Walter, B.N., Ware, C.F., Hession, C., Ehrenfels, B., Browning, J.L., Din, W.S., Goodwin, R.G. and Smith, C.A. 1994. A lymphotoxin- $\beta$ -specific receptor. *Science* 264: 707-710.
3. Nakamura, T., Tashiro, K., Nazarea, M., Nakano, T., Sasayama, S. and Honjo, T. 1995. The murine lymphotoxin- $\beta$  receptor cDNA: isolation by the signal sequence trap and chromosomal mapping. *Genomics* 30: 312-319.
4. Nalabolu, S.R., Shukla, H., Nallur, G., Parimoo, S. and Weissman, S.M. 1996. Genes in a 220-kb region spanning the TNF cluster in human MHC. *Genomics* 31: 215-222.
5. Warzocha, K., Renard, N., Charlot, C., Bienvenu, J., Coiffier, B. and Salles, G. 1997. Identification of two lymphotoxin-b isoforms expressed in human lymphoid cell lines and non-Hodgkin's lymphomas. *Biochem. Biophys. Res. Commun.* 238: 273-276.
6. Junt, T., Tumanov, A.V., Harris, N., Heikenwalder, M., Zeller, N., Kuprash, D.V., Aguzzi, A., Ludewig, B., Nedospasov, S.A. and Zinkernagel, R.M. 2006. Expression of lymphotoxin- $\beta$  governs immunity at two distinct levels. *Eur. J. Immunol.* 36: 2061-2075.
7. Cui, C.Y., Hashimoto, T., Grivennikov, S.I., Piao, Y., Nedospasov, S.A. and Schlessinger, D. 2006. Ectodysplasin regulates the lymphotoxin- $\beta$  pathway for hair differentiation. *Proc. Natl. Acad. Sci. USA* 103: 9142-9147.
8. O'Rourke, K.P., O'Donoghue, G., Adams, C., Mulcahy, H., Molloy, C., Silke, C., Molloy, M., Shanahan, F. and O'Gara, F. 2008. High levels of lymphotoxin- $\beta$  (LT- $\beta$ ) gene expression in rheumatoid arthritis synovium: clinical and cytokine correlations. *Rheumatol. Int.* 28: 979-986.

## STORAGE

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

## CHROMOSOMAL LOCATION

Genetic locus: LTB (human) mapping to 6p21.33.

## SOURCE

LT- $\beta$  (399CT9.3.4) is a mouse monoclonal antibody raised against a synthetic peptide corresponding to amino acids 199-227 in the C-terminal region of LT- $\beta$  of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgM in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

LT- $\beta$  (399CT9.3.4) is recommended for detection of LT- $\beta$  of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000).

Suitable for use as control antibody for LT- $\beta$  siRNA (h): sc-39828, LT- $\beta$  shRNA Plasmid (h): sc-39828-SH and LT- $\beta$  shRNA (h) Lentiviral Particles: sc-39828-V.

Molecular Weight of LT- $\beta$ : 25 kDa.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.