

Cbl siRNA (h): sc-29242

BACKGROUND

Cbl (also designated the c-Cbl proto-oncogene, E3 ubiquitin-protein ligase CBL, Casitas B-lineage lymphoma proto-oncogene and RING finger protein 55) has been identified as the cellular homolog of the v-Cbl oncogene isolated from an NFS/N mouse that developed a pre-B cell lymphoma following infection with the replication-competent Cas Br-M murine leukemic virus. c-Cbl is expressed at relatively high levels in a wide range of hematopoietic tumor cell lines as well as in normal tissues such as thymus and testis. The c-Cbl gene product has been identified as a cytoplasmic protein with apparent DNA binding and dimerization domains characteristic of transcription factors. A single c-Cbl locus termed CBL2 has been mapped to human chromosome 11q23.3. This region of chromosome 11 is involved in translocations and deletions in a broad range of leukemias; c-Cbl has been found to be translocated from chromosome 11 in leukemias with either t(4;11) or t(11;14) abnormalities. Two proteins related to c-Cbl have been identified as Cbl-b (RING finger protein 56) and Cbl-3 (RING finger protein 57). Cbl-b has a proline-rich domain, a nuclear localization signal, a C3HC4 zinc finger and a putative leucine zipper. Cbl-b is expressed in normal and malignant mammary epithelial cells, various normal tissues and hematopoietic tissue and cell lines. Data suggests that Cbl-b encodes a protein that can interact with signal transduction proteins to regulate their function or be regulated by them.

CHROMOSOMAL LOCATION

Genetic locus: CBL (human) mapping to 11q23.3.

PRODUCT

Cbl siRNA (h) is a pool of 4 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Cbl shRNA Plasmid (h): sc-29242-SH and Cbl shRNA (h) Lentiviral Particles: sc-29242-V as alternate gene silencing products.

For independent verification of Cbl (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-29242A, sc-29242B, sc-29242C and sc-29242D.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Cbl siRNA (h) is recommended for the inhibition of Cbl expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 μ M in 66 μ l. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

Cbl (A-9): sc-1651 is recommended as a control antibody for monitoring of Cbl gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Cbl gene expression knockdown using RT-PCR Primer: Cbl (h)-PR: sc-29242-PR (20 μ l, 524 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

- Lock, P., et al. 2006. Spred-2 steady-state levels are regulated by phosphorylation and Cbl-mediated ubiquitination. *Biochem. Biophys. Res. Commun.* 351: 1018-1023.
- Haugsten, E.M., et al. 2008. Ubiquitination of fibroblast growth factor receptor 1 is required for its intracellular sorting but not for its endocytosis. *Mol. Biol. Cell* 19: 3390-3403.
- Malerod, L., et al. 2011. Cargo-dependent degradation of ESCRT-I as a feedback mechanism to modulate endosomal sorting. *Traffic* 12: 1211-1226.
- Szymanska, M., et al. 2016. A combination of two antibodies recognizing non-overlapping epitopes of HER2 induces kinase activity-dependent internalization of HER2. *J. Cell. Mol. Med.* 20: 1999-2011.
- Shahriyar, S.A., et al. 2020. Upregulation of DR5 and downregulation of survivin by IITZ-01, lysosomotropic autophagy inhibitor, potentiates TRAIL-mediated apoptosis in renal cancer cells via ubiquitin-proteasome pathway. *Cancers* 12: 2363.
- Rohwedder, A., et al. 2021. Composition of receptor tyrosine kinase-mediated lipid micro-domains controlled by adaptor protein interaction. *Sci. Rep.* 11: 6160.
- Han, S., et al. 2022. Licochalcone A promotes the ubiquitination of c-Met to abrogate gefitinib resistance. *Biomed Res. Int.* 2022: 5687832.

RESEARCH USE

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