

# CTBS siRNA (h): sc-88058

## BACKGROUND

CTBS (di-N-acetylchitobiase), also known as CTB (chitobiase), is an evolutionarily conserved member of the glycosyl hydrolase 18 family of proteins. Localizing to the lysosome, CTBS plays a role in the degradation of asparagine-linked (Asn-linked) glycoproteins. Glycoproteins are translocated to lysosomes via endocytosis or autophagy where they are broken down by proteases and glycosidases. The catabolism of glycoproteins is an important step in the regular turnover of cellular contents and in maintaining the homeostasis of glycosylation. CTBS functions as a glycosidase that cleaves the reducing end GlcNAc from the core chitobiase unit of oligosaccharides. Before this reaction can occur, AGA (the lysosomal glycosylasparaginase) must first remove the Asn from the Asn-linked glycoprotein to expose the reducing end GlcNAc, thereby allowing CTBS to access the exposed moiety.

## REFERENCES

1. Kuranda, M.J. and Aronson, N.N. 1986. A di-N-acetylchitobiase activity is involved in the lysosomal catabolism of asparagine-linked glycoproteins in rat liver. *J. Biol. Chem.* 261: 5803-5809.
2. Aronson, N.N. and Kuranda, M.J. 1989. Lysosomal degradation of Asn-linked glycoproteins. *FASEB J.* 3: 2615-2622.
3. Fisher, K.J. and Aronson, N.N. 1992. Cloning and expression of the cDNA sequence encoding the lysosomal glycosidase di-N-acetylchitobiase. *J. Biol. Chem.* 267: 19607-19616.
4. Fisher, K.J. and Aronson, N.N. 1992. Characterization of the cDNA and genomic sequence of a G protein  $\gamma$  subunit ( $\gamma 5$ ). *Mol. Cell. Biol.* 12: 1585-1591.
5. Ahmad, W., Li, S., Chen, H., Tuck-Muller, C.M., Pittler, S.J. and Aronson, N.N. 1995. Lysosomal chitobiase (CTB) and the G-protein  $\gamma$  5 subunit (GNG5) genes co-localize to human chromosome 1p22. *Cytogenet. Cell Genet.* 71: 44-46.

## CHROMOSOMAL LOCATION

Genetic locus: CTBS (human) mapping to 1p22.3.

## PRODUCT

CTBS siRNA (h) is a pool of 3 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see CTBS shRNA Plasmid (h): sc-88058-SH and CTBS shRNA (h) Lentiviral Particles: sc-88058-V as alternate gene silencing products.

For independent verification of CTBS (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-88058A, sc-88058B and sc-88058C.

## PROTOCOLS

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

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

## APPLICATIONS

CTBS siRNA (h) is recommended for the inhibition of CTBS 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  $\mu$ M in 66  $\mu$ 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

CTBS (RF-18): sc-100489 is recommended as a control antibody for monitoring of CTBS 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).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-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. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor CTBS gene expression knockdown using RT-PCR Primer: CTBS (h)-PR: sc-88058-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## RESEARCH USE

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