SANTA CRUZ BIOTECHNOLOGY, INC.

cathepsin H siRNA (m): sc-29935

BACKGROUND

Cathepsin H (also designated N-benzoylarginine-β-naphthylamide hydrolase, aleurain, cathepsin B3 or cathepsin BA) is a lysosomal cysteine proteinase that mediates degradation of lysosomal proteins. Cathepsin H is a disulfide-linked heavy and light chain dimer produced from a single precursor protein. The encoded protein, which belongs to the peptidase C1 protein family, can act both as an aminopeptidase and as an endopeptidase. Elevated levels of cathepsin H correlates with malignant progression of prostate tumors. Two transcript variants encoding different isoforms have been found for this gene. Full-length and truncated cathepsin H [12-amino acid deletion in the signal peptide region (CTSHΔ10-21)] are expressed in prostate tissues, LNCaP, PC-3 and DU 145 prostate cancer cell lines. Cathepsin H mediates maturation of the biologically active surfactant protein-B (SP-B) peptide.

REFERENCES

1. Lafuse, W.P., et al. 1995. IFN-γ increases cathepsin H mRNA levels in mouse macrophages. J. Leukoc. Biol. 57: 663-669.
2. Claus, V., et al. 1998. Lysosomal enzyme trafficking between phagosomes, endosomes and lysosomes in J774 macrophages. Enrichment of cathepsin H in early endosomes. J. Biol. Chem. 273: 9842-9851.
3. Waghray, A., et al. 2002. Analysis of a truncated form of cathepsin H in human prostate tumor cells. J. Biol. Chem. 277: 11533-11538.
4. Dodt, J., et al. 2003. Human cathepsin H: deletion of the mini-chain switches substrate specificity from aminopeptidase to endopeptidase. Biol. Chem. 384: 1327-1332.
5. Brguljan, P.M., et al. 2003. Human brain cathepsin H as a neuropeptide and bradykinin metabolizing enzyme. Peptides 24: 1977-1984.
6. Ueno, T., et al. 2004. Processing of pulmonary surfactant protein B by napsin and cathepsin H. J. Biol. Chem. 279: 16178-16184.
7. Horn, M., et al. 2005. Activation processing of cathepsin H impairs recognition by its propeptide. Biol Chem 386: 941-947.

CHROMOSOMAL LOCATION

Genetic locus: Ctsh (mouse) mapping to 9 E3.1.

PRODUCT

cathepsin H siRNA (m) 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see cathepsin H shRNA Plasmid (m): sc-29935-SH and cathepsin H shRNA (m) Lentiviral Particles: sc-29935-V as alternate gene silencing products.

For independent verification of cathepsin H (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-29935A, sc-29935B and sc-29935C.

RESEARCH USE

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

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 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

cathepsin H siRNA (m) is recommended for the inhibition of cathepsin H expression in mouse 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 µM in 66 µl. 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

cathepsin H (F-7): sc-398527 is recommended as a control antibody for monitoring of cathepsin H 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 cathepsin H gene expression knockdown using RT-PCR Primer: cathepsin H (m)-PR: sc-29935-PR (20 µl, 541 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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