SANTA CRUZ BIOTECHNOLOGY, INC.

CTRB2 siRNA (h): sc-93161

BACKGROUND

Chymotrypsins are digestive enzymes that can perform proteolysis by cleaving peptides at the carboxyl side of tyrosine, tryptophan, leucine and phenylalanine, although over time they can also hydrolyze other amide bonds, especially those with leucine-donated carboxyls. Chymotrypsins cleave peptide bonds by attacking the un-reactive carbonyl group with a powerful nucleophile, which momentarily becomes covalently bonded to the substrate to form an intermediate. Chymotrypsin B (CTRB1) and Chymotrypsin B2 (CTRB2) are synthesized in the pancreas by protein biosynthesis as precursors (Chymotrypsinogen B1 and Chymotrypsinogen B2) that are enzymatically inactive, but become active as a three polypeptide molecule that is interconnected by disulfide bonds.

REFERENCES

1. Bell, G.I., Quinto, C., Quiroga, M., Valenzuela, P., Craik, C.S. and Rutter, W.J. 1984. Isolation and sequence of a rat chymotrypsin B gene. J. Biol. Chem. 259: 14265-14270.
2. Honey, N.K., Sakaguchi, A.Y., Quinto, C., MacDonald, R.J., Bell, G.I., Craik, C., Rutter, W.J. and Naylor, S.L. 1984. Chromosomal assignments of human genes for serine proteases trypsin, chymotrypsin B, and elastase. Somat. Cell Mol. Genet. 10: 369-376.
3. Honey, N.K., Sakaguchi, A.Y., Lalley, P.A., Quinto, C., MacDonald, R.J., Craik, C., Bell, G.I., Rutter, W.J. and Naylor, S.L. 1984. Chromosomal assignments of genes for trypsin, chymotrypsin B, and elastase in mouse. Somat. Cell Mol. Genet. 10: 377-383.
4. Appel, W. 1986. Chymotrypsin: molecular and catalytic properties. Clin. Biochem. 19: 317-322.
5. Katoh, M. 1999. Chymotrypsin. Nippon Rinsho 57: 372-374.
6. Jelinek, B., Antal, J., Venekei, I. and Gráf, L. 2004. Ala226 to Gly and Ser189 to Asp mutations convert rat chymotrypsin B to a trypsin-like protease. Protein Eng. Des. Sel. 17: 127-131.

CHROMOSOMAL LOCATION

Genetic locus: CTRB2 (human) mapping to 16q23.1.

PRODUCT

CTRB2 siRNA (h) is a target-specific 19-25 nt siRNA 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 CTRB2 shRNA Plasmid (h): sc-93161-SH and CTRB2 shRNA (h) Lentiviral Particles: sc-93161-V as alternate gene silencing products.

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.

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

CTRB2 siRNA (h) is recommended for the inhibition of CTRB2 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 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

CTRB1/2 (B-3): sc-398721 is recommended as a control antibody for monitoring of CTRB2 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 CTRB2 gene expression knockdown using RT-PCR Primer: CTRB2 (h)-PR: sc-93161-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.