SANTA CRUZ BIOTECHNOLOGY, INC.

Chymotrypsin siRNA (h): sc-72906

BACKGROUND

Chymotrypsins, such as Chymotrypsin C (also known as pancreatic Chymotrypsin or Chymotrypsin), are digestive enzymes that can perform proteolysis by cleaving peptides at the carboxyl side of tyrosine, tryptophan 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, the Serine 195 residue located in the active site of the enzyme, which momentarily becomes covalently bonded to the substrate to form an intermediate. Chymotrypsin C is synthesized in the pancreas by protein biosynthesis as a precursor called chymotrypsinogen that is enzymatically inactive, but becomes active as a three polypeptide molecule that is interconnected by disulfide bonds.

REFERENCES

1. Murakami, Y. and Hirata, A. 1999. Poly(ethylene glycol)-α-Chymotrypsin complex catalytically active in anhydrous isooctane. J. Biosci. Bioeng. 88: 441-443.
2. Matsumoto, M. and Kondo, K. 2001. Enhanced thermostability of α-Chymotrypsin enclosed in inorganic microcapsules. J. Biosci. Bioeng. 92: 197-199.
3. Kitano, H., et al. 2002. Substrate monolayers as electrochemical sensing elements for α-Chymotrypsin. J. Colloid Interface Sci. 250: 134-141.
4. Lin, Y.Z., et al. 2002. Study on osmotic pressures for aqueous lysozyme and α-Chymotrypsin-electrolyte solutions with two Yukawa potentials. J. Colloid Interface Sci. 251: 256-262.
5. Kostetskii, P.V. 2005. The volume and structure of the Chymotrypsin active site. Biofizika 50: 993-997.
6. You, C.C., et al. 2005. Contrasting effects of exterior and interior hydrophobic moieties in the complexation of amino acid functionalized gold clusters with α-Chymotrypsin. Org. Lett. 7: 5685-5688.
7. Simard, J.M., et al. 2005. Reversible regulation of Chymotrypsin activity using negatively charged gold nanoparticles featuring malonic acid termini. Med. Chem. 1: 153-157.

CHROMOSOMAL LOCATION

Genetic locus: CTRC (human) mapping to 1p36.21.

PRODUCT

Chymotrypsin 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Chymotrypsin shRNA Plasmid (h): sc-72906-SH and Chymotrypsin shRNA (h) Lentiviral Particles: sc-72906-V as alternate gene silencing products.

For independent verification of Chymotrypsin (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-72906A, sc-72906B and sc-72906C.

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

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

Chymotrypsin (602): sc-59483 is recommended as a control antibody for monitoring of Chymotrypsin 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 Chymotrypsin gene expression knockdown using RT-PCR Primer: Chymotrypsin (h)-PR: sc-72906-PR (20 µl, 596 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Britland, S. and Hoyle, M. 2012. Transcriptional gene silencing of kallikrein 5 and kallikrein 7 using siRNA prevents epithelial cell detachment induced by alkaline shock in an *in vitro* model of eczema. Biotechnol. Prog. 28: 485-489.
2. German, P., et al. 2016. Phosphorylation-dependent cleavage regulates von Hippel Lindau proteostasis and function. Oncogene 35: 4973-4980.

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.