SANTA CRUZ BIOTECHNOLOGY, INC.

# Mesotrypsinogen siRNA (m): sc-61021

## BACKGROUND

Mesotrypsinogen is an isoform of human Trypsin, belonging to the Trypsin family of serine proteases. Mesotrypsinogen is known to be resistant to common Trypsin inhibitors such as SBTI and SPINK1, which may contribute to pathogenesis of pancreatitis by reducing the protective levels of SPINK1 in the pancreas. A minor pancreatic digestive enzyme that degrades dietary Trypsin inhibitors in the gut, Mesotrypsinogen may function to facilitate the digestion of foods rich in natural Trypsin inhibitors. Mesotrypsinogen migrates to the brain and pancreas and operates on peptide linkages involving the carboxyl group of lysine or Arginine. The gene encoding the Mesotrypsinogen protein maps to the locus of T cell receptor β variable orphans on chromosome 9.

## REFERENCES


1. Rinderknecht, H., et al. 1984. Mesotrypsinogen: a new inhibitor-resistant protease from a zymogen in human pancreatic tissue and fluid. Gastroenterology 86: 681-692.
2. Nyaruhucha, C.N., et al. 1997. Identification and expression of the cDNA-encoding human Mesotrypsinogen, an isoform of Trypsin with inhibitor resistance. J. Biol. Chem. 272: 10573-10578.
3. Chen, J.M., et al. 1999. Exclusion of anionic trypsinogen and Mesotrypsinogen involvement in hereditary pancreatitis without cationic trypsinogen gene mutations. Scand. J. Gastroenterol. 34: 831-832.
4. Szilagyi, L., et al. 2001. Comparative *in vitro* studies on native and recombinant human cationic Trypsins. Cathepsin B is a possible pathological activator of trypsinogen in pancreatitis. J. Biol. Chem. 276: 24574-24580.
5. Szmola, R., et al. 2003. Human Mesotrypsinogen is a unique digestive protease specialized for the degradation of Trypsin inhibitors. J. Biol. Chem. 278: 48580-48589.
6. Nemoda, Z., et al. 2005. Genetic and biochemical characterization of the E32del polymorphism in human Mesotrypsinogen. Pancreatology 5: 273-278.
7. Liz, M.A. and Sousa, M.M. 2005. Deciphering cryptic proteases. Cell. Mol. Life Sci. 62: 989-1002.


## CHROMOSOMAL LOCATION

Genetic locus: Prss3 (mouse) mapping to 6 B1.

## PRODUCT

Mesotrypsinogen 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 Mesotrypsinogen shRNA Plasmid (m): sc-61021-SH and Mesotrypsinogen shRNA (m) Lentiviral Particles: sc-61021-V as alternate gene silencing products.

For independent verification of Mesotrypsinogen (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-61021A, sc-61021B and sc-61021C.

## 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

Mesotrypsinogen siRNA (m) is recommended for the inhibition of Mesotrypsinogen 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.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Mesotrypsinogen gene expression knockdown using RT-PCR Primer: Mesotrypsinogen (m)-PR: sc-61021-PR (20 µl). 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.

## PROTOCOLS

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