SANTA CRUZ BIOTECHNOLOGY, INC.

TGase3 siRNA (m): sc-37517

BACKGROUND

TGases (transglutaminases) catalyze the posttranslational modification of proteins by transamidation of available glutamine residues, resulting in a stable, insoluble macromolecular structure. The human haploid genome contains at least five distinct transglutaminases that are differentially expressed in time-space and tissue-specific ways. Epidermal-type TGase (TGase3), also known as TGE, TGX and TGM3, is involved in the formation of the cornified cell envelope by cross-linking a variety of structural proteins in the epidermis. It is expressed during late stages of terminal differentiation of the epidermis and in certain cell types of the hair follicle. TGase3 is widely expressed and is important for epithelial barrier formation. It is a zymogen, requiring proteolysis for activity. TGase3 is devoid of GTPase activity, but its TGase activity is inhibited by GTP as in the case of tissue-type TGase (TGase2). The gene encoding TGase3 maps to human chromosome 20p13.

REFERENCES

1. Ikura, K., et al. 1995. Site-directed mutation in conserved anionic regions of guinea pig liver transglutaminase. Arch. Biochem. Biophys. 318: 307-313.
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3. Hitomi, K., et al. 1999. Characterization of recombinant mouse epidermal-type transglutaminase (TGase3): regulation of its activity by proteolysis and guanine nucleotides. J. Biochem. 125: 1048-1054.
4. Hitomi, K., et al. 2000. GTP, an inhibitor of transglutaminases, is hydrolyzed by tissue-type transglutaminase (TGase2) but not by epidermal-type transglutaminase (TGase3). Biosci. Biotechnol. Biochem. 64: 657-659.
5. Hitomi, K., et al. 2001. Analysis of epidermal-type transglutaminase (TGase3) expression in mouse tissues and cell lines. Int. J. Biochem. Cell Biol. 33: 491-498.
6. Ahvazi, B., et al. 2002. Three-dimensional structure of the human transglutaminase 3 enzyme: binding of calcium ions changes structure for activation. EMBO J. 21: 2055-2067.
7. LocusLink Report (LocusID: 7053). http://www.ncbi.nlm.nih.gov/LocusLink/

CHROMOSOMAL LOCATION

Genetic locus: Tgm3 (mouse) mapping to 2 F1.

PRODUCT

TGase3 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 TGase3 shRNA Plasmid (m): sc-37517-SH and TGase3 shRNA (m) Lentiviral Particles: sc-37517-V as alternate gene silencing products.

For independent verification of TGase3 (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-37517A, sc-37517B and sc-37517C.

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

TGase3 siRNA (m) is recommended for the inhibition of TGase3 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 TGase3 gene expression knockdown using RT-PCR Primer: TGase3 (m)-PR: sc-37517-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.