SANTA CRUZ BIOTECHNOLOGY, INC.

granzyme H siRNA (h): sc-60757

BACKGROUND

The granzyme family of proteins belong to the larger peptidase S1 family. Granzyme A and granzyme B are serine proteases that facilitate apoptotic signaling in cytotoxic T lymphocytes (CTL) and natural killer (NK) cells. Within the granules of activated CTLs, granzyme A and granzyme B are processed and converted to their active forms by the lysosomal cysteine protease cathepsin C. Once cleaved, these active proteases target distinct substrates for proteolysis and, thereby, mediate apoptosis through two different pathways. Granzyme H, also designated cytotoxic T lymphocyte proteinase, cathepsin G-like 2 (CTSGL2) or cytotoxic serine protease C (CSP-C), contains one peptidase S1 domain. Granzyme H localizes to cytoplasmic granules of cytolytic T lymphocytes and is important for target cell lysis in cell-mediated immune responses.

REFERENCES

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2. Trapani, J.A., et al. 1996. A putative role in the mechanism of cytotoxic lymphocyte-mediated apoptosis. Localization of granzyme B in the nucleus. J. Biol. Chem. 271: 4127-4133.
3. Pham, C.T., et al. 1999. Dipeptidyl peptidase I is required for the processing and activation of granzymes A and B *in vivo*. Proc. Natl. Acad. Sci. USA 96: 8627-8632.
4. Shresta, S., et al. 1999. Granzyme A initiates an alternative pathway for granule-mediated apoptosis. Immunity 10: 595-605.
5. Edwards, K.M., et al. 1999. The human cytotoxic T cell granule serine protease granzyme H has chymotrypsin-like (chymase) activity and is taken up into cytoplasmic vesicles reminiscent of granzyme B-containing endosomes. J. Biol. Chem. 274: 30468-30473.
6. Sedelies, K.A., et al. 2004. Discordant regulation of granzyme H and granzyme B expression in human lymphocytes. J. Biol. Chem. 279: 26581-26587.
7. Pao, L.I., et al. 2005. Functional analysis of granzyme M and its role in immunity to infection. J. Immunol. 175: 3235-3243.

CHROMOSOMAL LOCATION

Genetic locus: GZMH (human) mapping to 14q12.

PRODUCT

granzyme H 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 granzyme H shRNA Plasmid (h): sc-60757-SH and granzyme H shRNA (h) Lentiviral Particles: sc-60757-V as alternate gene silencing products.

For independent verification of granzyme H (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-60757A, sc-60757B and sc-60757C.

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

granzyme H siRNA (h) is recommended for the inhibition of granzyme H 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor granzyme H gene expression knockdown using RT-PCR Primer: granzyme H (h)-PR: sc-60757-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.