SANTA CRUZ BIOTECHNOLOGY, INC.

MNSF-β siRNA (h): sc-61063

BACKGROUND

The ubiquitin (Ub) pathway involves three sequential enzymatic steps that facilitate the conjugation of Ub and Ub-like molecules to specific protein substrates. The first step requires the ATP-dependent activation of the Ub C-terminus and the assembly of multi-Ub chains by the Ub-activating enzyme known as the E1 component. The Ub chain is then conjugated to the Ub-conjugating enzyme (E2) to generate an intermediate Ub-E2 complex. The Ub-ligase (E3) then catalyzes the transfer of Ub from E2 to the appropriate protein substrate. A wide range of enzymes facilitate in the proteolytic Ub pathway, including monoclonal nonspecific suppressor factor-β (MNSF-β), a subunit of MNSF, which is a lymphokine product of a murine T cell hybridoma that restricts the production of LPS-induced immunoglobulin secreting cells in an antigen-nonspecific manner. MNSF-β is a ubiquitin-like fusion protein consisting of the ribosomal protein S30 and a protein that shares 36% sequence identity with ubiquitin. This ubiquitin-like segment (Ubi-L) can be cleaved from MNSF-β in the cytosol.

REFERENCES

1. Nakamura, M., et al. 1995. Molecular cloning and characterization of a cDNA encoding monoclonal nonspecific suppressor factor. Proc. Natl. Acad. Sci. USA 92: 3463-3467.
2. Nakamura, M., et al. 1995. Monoclonal nonspecific suppressor factor β inhibits interleukin-4 secretion by a type-2 helper T cell clone. Eur. J. Immunol. 25: 2417-2419.
3. Nakamura, M., et al. 1996. Ubiquitin-like moiety of the monoclonal nonspecific suppressor factor β is responsible for its activity. J. Immunol. 156: 532-538.
4. Nakamura, M. and Tanigawa, Y. 1998. Ubiquitin-like polypeptide conjugates to acceptor proteins in concanavalin A- and interferon γ-stimulated T cells. Biochem. J. 330: 683-688.
5. Nakamura, M. and Tanigawa, Y. 1999. Biochemical analysis of the receptor for ubiquitin-like polypeptide. J. Biol. Chem. 274: 18026-18032.
6. Nakamura, M. and Tanigawa, Y. 2003. Characterization of ubiquitin-like polypeptide acceptor protein, a novel pro-apoptotic member of the Bcl2 family. Eur. J. Biochem. 270: 4052-4058.

CHROMOSOMAL LOCATION

Genetic locus: FAU (human) mapping to 11q13.1.

PRODUCT

MNSF-β 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 MNSF-β shRNA Plasmid (h): sc-61063-SH and MNSF-β shRNA (h) Lentiviral Particles: sc-61063-V as alternate gene silencing products.

For independent verification of MNSF-β (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-61063A, sc-61063B and sc-61063C.

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

MNSF-β siRNA (h) is recommended for the inhibition of MNSF-β 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 MNSF-β gene expression knockdown using RT-PCR Primer: MNSF-β (h)-PR: sc-61063-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.