SANTA CRUZ BIOTECHNOLOGY, INC.

GRSF-1 siRNA (h): sc-75202

BACKGROUND

GRSF-1 (G-rich RNA sequence binding factor 1) is a 480 amino acid cytoplasmic protein that contains three RRM (RNA recognition motif) domains and and two auxiliary domains. Considered a cellular protein, GRSF-1 binds to RNAs containing the G-rich element. It is suggested that GRSF-1 selectively recruits cellular and viral mRNAs containing 5' UTR GRSF-1 binding sites to polyribosomes, which is mediated through interactions with cellular proteins. GRSF-1 is encoded by a gene located on human chromosome 4q13.3, which encodes nearly 6% of the human genome and has the largest gene deserts (regions of the genome with no protein encoding genes) of all of the human chromosomes. Defects in some of the genes located on chromosome 4 are associated with Huntington's disease, Ellis-van Creveld syndrome, methylmalonic acidemia and polycystic kidney disease.

REFERENCES

1. Qian, Z. and Wilusz, J. 1994. GRSF-1: a poly(A)$^+$ mRNA binding protein which interacts with a conserved G-rich element. Nucleic Acids Res. 22: 2334-2343.
2. Chen, C.S., et al. 1995. A mapping study of 13 genes on human chromosome bands 4q11→q25. Cytogenet. Cell Genet. 69: 260-265.
3. Park, Y.W., et al. 1999. Regulation of eukaryotic protein synthesis: selective influenza viral mRNA translation is mediated by the cellular RNA-binding protein GRSF-1. Proc. Natl. Acad. Sci. USA 96: 6694-6699.
4. Kash, J.C., et al. 2002. Selective translation of eukaryotic mRNAs: functional molecular analysis of GRSF-1, a positive regulator of influenza virus protein synthesis. J. Virol. 76: 10417-10426.
5. Hillier, L.W., et. al. 2005. Generation and annotation of the DNA sequences of human chromosomes 2 and 4. Nature 434: 724-731.
6. Schaub, M.C., et al. 2007. Members of the heterogeneous nuclear ribonucleoprotein H family activate splicing of an HIV-1 splicing substrate by promoting formation of ATP-dependent spliceosomal complexes. J. Biol. Chem. 282: 13617-13626.
7. Cobbold, L.C., et al. 2008. Identification of internal ribosome entry segment (IRES)-transacting factors for the Myc family of IRESs. Mol. Cell. Biol. 28: 40-49.

CHROMOSOMAL LOCATION

Genetic locus: GRSF1 (human) mapping to 4q13.3.

PRODUCT

GRSF-1 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 GRSF-1 shRNA Plasmid (h): sc-75202-SH and GRSF-1 shRNA (h) Lentiviral Particles: sc-75202-V as alternate gene silencing products.

For independent verification of GRSF-1 (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-75202A, sc-75202B and sc-75202C.

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

GRSF-1 siRNA (h) is recommended for the inhibition of GRSF-1 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 GRSF-1 gene expression knockdown using RT-PCR Primer: GRSF-1 (h)-PR: sc-75202-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.