SANTA CRUZ BIOTECHNOLOGY, INC.

PTRF siRNA (h): sc-76293

BACKGROUND

The termination of transcription by RNA polymerase I (Pol I) requires the involvement of several proteins, including TTF-1 (thyroid transcription factor-1) which pauses transcription, thus allowing the Pol I complex to dissociate and release the subsequent pre-rRNA. PTRF (polymerase I and transcript release factor), also known as FKSG13, is a 390 amino acid protein that is required for the dissociation of the transcription complex. Localized to various places within the cell, including the cell membrane, microsome, nucleus and cytoplasm, PTRF binds the 3' end of pre-rRNA while simultaneously interacting with Pol I and TFF-1, thus allowing the Pol I complex to release from the template. Three isoforms of PTRF are expressed due to alternative splicing events.

REFERENCES

1. Mason, S.W., et al. 1997. Identification of a transcript release activity acting on ternary transcription complexes containing murine RNA polymerase I. EMBO J. 16: 163-172.
2. Jansa, P., et al. 1998. Cloning and functional characterization of PTRF, a novel protein which induces dissociation of paused ternary transcription complexes. EMBO J. 17: 2855-2864.
3. Hasegawa, T., et al. 2000. PTRF (polymerase I and transcript-release factor) is tissue-specific and interacts with the BFCOL1 (binding factor of a type-I collagen promoter) zinc-finger transcription factor which binds to the two mouse type-I collagen gene promoters. Biochem. J. 347: 55-59.

CHROMOSOMAL LOCATION

Genetic locus: PTRF (human) mapping to 17q21.2.

PRODUCT

PTRF 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 PTRF shRNA Plasmid (h): sc-76293-SH and PTRF shRNA (h) Lentiviral Particles: sc-76293-V as alternate gene silencing products.

For independent verification of PTRF (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-76293A, sc-76293B and sc-76293C.

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

PTRF siRNA (h) is recommended for the inhibition of PTRF 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.

GENE EXPRESSION MONITORING

PTRF (4a): sc-517589 is recommended as a control antibody for monitoring of PTRF gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PTRF gene expression knockdown using RT-PCR Primer: PTRF (h)-PR: sc-76293-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Hernandez, V.J., et al. 2013. Cavin-3 dictates the balance between ERK and Akt signaling. Elife 2: e00905.
2. Salle-Teyssières, L., et al. 2016. Maladaptative autophagy impairs adipose function in congenital generalized lipodystrophy due to cavin-1 deficiency. J. Clin. Endocrinol. Metab. 101: 2892-2904.

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.