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Tankyrase-1 siRNA (h): sc-44139

BACKGROUND

Tankyrase-1 (TRF1-interacting ankyrin-related ADP-ribose polymerase 1) and the closely related homolog Tankyrase-2 are poly(ADP-ribose) polymerases (PARPs) that co-localize and use an ankyrin-repeat domain to bind diverse proteins, including TRF-1 (telomere-repeat-binding factor 1), IRAP (insulin-responsive aminopeptidase) and TAB182. Tankyrase-1 (also known as TNKS and TNKS1) and Tankyrase-2 (also known as TNKS2, TNKL and TANK2) interact with the same set of proteins and probably mediate overlapping functions, both at telomeres and in vesicular compartments. Overexpression of Tankyrase-1 in the nucleus promotes telomere elongation, suggesting that Tankyrase 1 may regulate access of telomerase to the telomeric complex. Overexpression of Tankyrase-2 in the nucleus releases endogenous TRF1 from telomeres, establishing Tankyrase-2 as a PARP with itself and TRF1 as acceptors of ADP-ribosylation, and suggesting the possibility of a role for Tankyrase-2 at telomeres. The ankyrin (ANK) domain of Tankyrase-2 comprises five subdomains that provide redundant binding sites for IRAP. Tankyrase-2 lacks the N-terminal histidine/proline/serine-rich region of Tankyrase-1, but contains a corresponding ankyrin repeat region, sterile α motif module and poly(ADP-ribose) polymerase homology domain. The gene encoding Tankyrase-2 is widely expressed, with mRNA transcripts particularly abundant in skeletal muscle and placenta.

REFERENCES

1. Uchida, K., et al. 1987. Nucleotide sequence of a full-length cDNA for human fibroblast poly(ADP-ribose) polymerase. *Biochem. Biophys. Res. Commun.* 148: 617-622.
2. Schreiber, V., et al. 1992. The human poly(ADP-ribose) polymerase nuclear localization signal is a bipartite element functionally separate from DNA binding and catalytic activity. *EMBO J.* 11: 3263-3269.
3. Chong, L., et al. 1995. A human telomeric protein. *Science* 270: 1663-1667.
4. van Steensel, B., et al. 1997. Control of telomere length by the human telomeric protein TRF1. *Nature* 385: 740-743.

CHROMOSOMAL LOCATION

Genetic locus: TNKS (human) mapping to 8p23.1.

PRODUCT

Tankyrase-1 siRNA (h) is a target-specific 19-25 nt siRNA designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Tankyrase-1 shRNA Plasmid (h): sc-44139-SH and Tankyrase-1 shRNA (h) Lentiviral Particles: sc-44139-V as alternate gene silencing products.

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.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Tankyrase-1 siRNA (h) is recommended for the inhibition of Tankyrase-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 μ M in 66 μ l. 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

Tankyrase-1 (BL-2): sc-130422 is recommended as a control antibody for monitoring of Tankyrase-1 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 Tankyrase-1 gene expression knockdown using RT-PCR Primer: Tankyrase-1 (h)-PR: sc-44139-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.