SANTA CRUZ BIOTECHNOLOGY, INC.

YY1 siRNA (m): sc-36864

BACKGROUND

The YY1 transcription factor, also known as NF-E1 (human) and Delta or UCRBP (mouse) is of interest due to its diverse effects on a wide variety of target genes. YY1 is broadly expressed in a wide range of cell types and contains four C-terminal zinc finger motifs of the Cys-Cys-His-His type and an unusual set of structural motifs at its N-terminal. It binds to downstream elements in several vertebrate ribosomal protein genes, where it apparently acts positively to stimulate transcription and can act either negatively or positively in the context of the immunoglobulin κ 3' enhancer and immunoglobulin heavy-chain μE1 site as well as the P5 promoter of the adeno-associated virus. It thus appears that YY1 is a bifunctional protein, capable of functioning as an activator in some transcriptional control elements and a repressor in others.

CHROMOSOMAL LOCATION

Genetic locus: Yy1 (mouse) mapping to 12 F1.

PRODUCT

YY1 siRNA (m) 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 μM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see YY1 shRNA Plasmid (m): sc-36864-SH and YY1 shRNA (m) Lentiviral Particles: sc-36864-V as alternate gene silencing 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 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

YY1 siRNA (m) is recommended for the inhibition of YY1 expression in mouse 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.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

GENE EXPRESSION MONITORING

YY1 (H-10): sc-7341 is recommended as a control antibody for monitoring of YY1 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 YY1 gene expression knockdown using RT-PCR Primer: YY1 (m)-PR: sc-36864-PR (20 μl, 506 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Nan, C., et al. 2009. Transcription factor Yin Yang 1 represses fetal troponin I gene expression in neonatal myocardial cells. Biochem. Biophys. Res. Commun. 378: 62-67.
2. Potula, H.H. and Morel, L. 2012. Genetic variation at a Yin-Yang 1 response site regulates the transcription of cyclin-dependent kinase inhibitor $p18^{INK4C}$ transcript in lupus-prone mice. J. Immunol. 188: 4992-5002.
3. Ramkumar, C., et al. 2013. Smurf2 suppresses B-cell proliferation and lymphomagenesis by mediating ubiquitination and degradation of YY1. Nat. Commun. 4: 2598.
4. Lv, B., et al. 2016. Crocin upregulates CX3CR1 expression by suppressing NFκB/YY1 signaling and inhibiting lipopolysaccharide-induced microglial activation. Neurochem. Res. 41: 1949-1957.
5. Sun, W., et al. 2017. Influence of TBX21 T-1993C variant on autoimmune hepatitis development by Yin-Yang 1 binding. World J. Gastroenterol. 23: 8500-8511.
6. Liu, W., et al. 2018. Oxidative stress-elicited YY1 potentiates antioxidative response via enhancement of Nrf2-driven transcriptional activity: a potential neuronal defensive mechanism against ischemia/reperfusion cerebral injury. Biomed. Pharmacother. 108: 698-706.
7. Romero-Estrada, J.H., et al. 2023. Binding of YY1/CREB to an enhancer region triggers claudin 6 expression in *H. pylori* LPS-stimulated AGS cells. Int. J. Mol. Sci. 24: 13974.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.