SANTA CRUZ BIOTECHNOLOGY, INC.

NF-YA siRNA (h): sc-29947

BACKGROUND

The CCAAT-binding factor NF-Y is a heteromeric transcription factor that specifically binds to CCAAT sequences in many eukaryotic genes. NF-Y is made up of three subunits, NF-YA, NF-YB, and NF-YC. All three components are necessary for DNA binding. In each NF-Y subunit, the segment needed for formation of the NF-Y-DNA complex is conserved from yeast to human. These conserved segments are homologous to the histone-fold motif of eukaryotic histones. The DNA binding domains of the NF-YB and NF-YC subunits have been suggested to interact through a protein-protein histone-fold "handshake" motif in a manner analogous to the histone proteins, H2B and H2A, respectively.

CHROMOSOMAL LOCATION

Genetic locus: NFYA (human) mapping to 6p21.1.

PRODUCT

NF-YA 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 NF-YA shRNA Plasmid (h): sc-29947-SH and NF-YA shRNA (h) Lentiviral Particles: sc-29947-V as alternate gene silencing products.

For independent verification of NF-YA (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-29947A, sc-29947B and sc-29947C.

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

NF-YA siRNA (h) is recommended for the inhibition of NF-YA 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

NF-YA (G-2): sc-17753 is recommended as a control antibody for monitoring of NF-YA 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 NF-YA gene expression knockdown using RT-PCR Primer: NF-YA (h)-PR: sc-29947-PR (20 µl, 397 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. van der Watt, P.J., et al. 2011. The nuclear exporter, Crm1, is regulated by NFY and Sp1 in cancer cells and repressed by p53 in response to DNA damage. Biochim. Biophys. Acta 1809: 316-326.
2. Lee, L.C., et al. 2012. Role of the CCAAT-binding protein NFY in SCA17 pathogenesis. PLoS ONE 7: e35302.
3. Xu, H., et al. 2012. The CCAAT box-binding transcription factor NF-Y regulates basal expression of human proteasome genes. Biochim. Biophys. Acta 1823: 818-825.
4. Zhang, Z., et al. 2013. Immune mediators regulate CFTR expression through a bifunctional airway-selective enhancer. Mol. Cell. Biol. 33: 2843-2853.
5. Ying, S., et al. 2013. Estrogen receptor alpha and nuclear factor Y coordinately regulate the transcription of the SUMO-conjugating UBC9 gene in MCF-7 breast cancer cells. PLoS ONE 8: e75695.
6. Zhang, Z., et al. 2015. Oxidative stress regulates CFTR gene expression in human airway epithelial cells through a distal antioxidant response element. Am. J. Respir. Cell Mol. Biol. 52: 387-396.
7. Alam, S.K., et al. 2016. DNA damage-induced ephrin-B2 reverse signaling promotes chemoresistance and drives EMT in colorectal carcinoma harboring mutant p53. Cell Death Differ. 23: 707-722.
8. Chen, C.M., et al. 2019. Shaoyao Gancao Tang (SG-Tang), a formulated Chinese medicine, reduces aggregation and exerts neuroprotection in spinocerebellar ataxia type 17 (SCA17) cell and mouse models. Aging 11: 986-1007.

RESEARCH USE

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