SANTA CRUZ BIOTECHNOLOGY, INC.

NFRκB siRNA (h): sc-96360

BACKGROUND

NFκB (nuclear factor κB) is a ubiquitously expressed transcriptional regulator that, when stimulated, can activate transcription of several genes encoding proteins involved in cell cycle control, cell adhesion and programmed cell death. NFRκB (nuclear factor related to κB-binding protein), also known as DNA-binding protein R κB, is a nuclear protein that binds to the DNA consensus sequence 5'-GGGGAATCTCC-3' of NFκB. Binding of NFRκB is thought to regulate IL-2Rα (interleukin-2 receptor α chain) gene expression, a critical step in T cell activation. NFRκB exists as three isoforms due to alternative splicing and is expressed primarily in the brain, liver, spleen, testis and thymus. NFRκB gene expression is amplified in acute myeloid leukemia, suggesting a possible role in carcinogenesis.

REFERENCES

1. Adams, B.S., et al. 1992. Localization of the gene encoding R κB (NFRKB), a tissue-specific DNA binding protein, to chromosome 11q24-q25. Genomics 14: 270-274.
2. Adams, B.S., et al. 1992. Cloning of R κB, a novel DNA-binding protein that recognizes the interleukin-2 receptor α chain κB site. New Biol. 3: 1063-1073.
3. Crossen, P.E., et al. 1999. Identification of amplified genes in a patient with acute myeloid leukemia and double minute chromosomes. Cancer Genet. Cytogenet. 113: 126-133.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 164013. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Tyybäkinoja, A., et al. 2006. Amplified, lost, and fused genes in 11q23-25 amplicon in acute myeloid leukemia, an array-CGH study. Genes Chromosomes Cancer 45: 257-264.
6. Natarajan, M., et al. 2006. Nuclear translocation and DNA-binding activity of NFKB (NFκB) after exposure of human monocytes to pulsed ultra-wideband electromagnetic fields (1 kV/cm) fails to transactivate κB-dependent gene expression. Radiat. Res. 165: 645-654.

CHROMOSOMAL LOCATION

Genetic locus: NFRKB (human) mapping to 11q24.3.

PRODUCT

NFRκB 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 NFRκB shRNA Plasmid (h): sc-96360-SH and NFRκB shRNA (h) Lentiviral Particles: sc-96360-V as alternate gene silencing products.

For independent verification of NFRκB (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-96360A, sc-96360B and sc-96360C.

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

NFRκB siRNA (h) is recommended for the inhibition of NFRκB 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

NFRκB (A-12): sc-514977 is recommended as a control antibody for monitoring of NFRκB 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 (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor NFRκB gene expression knockdown using RT-PCR Primer: NFRκB (h)-PR: sc-96360-PR (20 µl, 419 bp). 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.