SANTA CRUZ BIOTECHNOLOGY, INC.

NFκB p65 siRNA (r): sc-61876

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The Power to Question

BACKGROUND

Proteins encoded by the v-Rel viral oncogene and its cellular homolog, c-Rel, are members of a family of transcription factors that include the two subunits of the transcription factor NFκB (p50 and p65) and the *Drosophila* maternal morphogen, dorsal. Both proteins specifically bind to DNA sequences that are the same or slight variations of the 10 bp κB sequence in the immunoglobulin κ light chain enhancer. This same sequence is also present in a number of other cellular and viral enhancers. The DNA binding activity of NFκB is activated and NFκB is subsequently transported from the cytoplasm to the nucleus in cells exposed to mitogens or growth factors. cDNAs encoding precursors for two distinct proteins of the same size have been described, designated p105 and p100. The p105 precursor contains p50 at its N-terminus and a C-terminal region that when expressed as a separate molecule, designated pdI, binds to p50 and regulates its activity.

REFERENCES

1. Meyer, R., et al. 1991. Cloning of the DNA-binding subunit of human nuclear factor κB: the level of its mRNA is strongly regulated by phorbol ester or tumor necrosis factor α. Proc. Natl. Acad. Sci. USA 88: 966-970.
2. Schmid, R.M., et al. 1991. Cloning of an NFκB subunit which stimulates HIV transcription in synergy with p65. Nature 352: 733-736.

CHROMOSOMAL LOCATION

Genetic locus: Rela (rat) mapping to 1q43.

PRODUCT

NFκB p65 siRNA (r) 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 NFκB p65 shRNA Plasmid (r): sc-61876-SH and NFκB p65 shRNA (r) Lentiviral Particles: sc-61876-V as alternate gene silencing products.

For independent verification of NFκB p65 (r) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-61876A, sc-61876B and sc-61876C.

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

NFκB p65 siRNA (r) is recommended for the inhibition of NFκB p65 expression in rat 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

NFκB p65 (F-6): sc-8008 is recommended as a control antibody for monitoring of NFκB p65 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor NFκB p65 gene expression knockdown using RT-PCR Primer: NFκB p65 (r)-PR: sc-61876-PR (20 µl, 521 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Wu, S., et al. 2008. Stimulatory effects of Insulin-like growth factor-I on growth plate chondrogenesis are mediated by nuclear factor-κB p65. J. Biol. Chem. 283: 34037-34044.
2. Zou, J., et al. 2010. Induction of innate immune gene expression cascades in brain slice cultures by ethanol: key role of NFκB and proinflammatory cytokines. Alcohol. Clin. Exp. Res. 34: 777-789.
3. Wu, S., et al. 2011. Proepithelin stimulates growth plate chondrogenesis via nuclear factor-κB-p65-dependent mechanisms. J. Biol. Chem. 286: 24057-24067.
4. Wang, X., et al. 2012. Focal adhesion kinase activates NFκB via the ERK1/2 and $p38^{MAPK}$ pathways in amyloid-β25-35-induced apoptosis in PC12 cells. J. Alzheimers Dis. 32: 77-94.
5. Mizukoshi, T., et al. 2013. Failure in activation of the canonical NFκB pathway by human T-cell leukemia virus type 1 Tax in non-hematopoietic cell lines. Virology 443: 226-235.
6. Chen, Z.D., et al. 2016. NFκB-dependent transcriptional upregulation of cyclin D1 exerts cytoprotection against hypoxic injury upon EGFR activation. Exp. Cell Res. 347: 52-59.
7. Li, S., et al. 2019. miRNA-302e attenuates inflammation in infantile pneumonia though the RelA/BRD4/NFκB signaling pathway. Int. J. Mol. Med. 44: 47-56.

RESEARCH USE

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