



NIK siRNA (m): sc-36066

BACKGROUND

The NF κ B transcription factor can be activated by several cytokines including TNF and IL-1. The TNF receptor activates NF κ B through the TRAF2 adaptor protein, whereas the IL-1 receptor activates NF κ B in a pathway involving TRAF6. Both TRAF2 and TRAF6 have been shown to interact with a serine/threonine kinase designated NF κ B inducing kinase (NIK), which appears to participate in the NF κ B signaling cascades triggered by both TNF and IL-1. NIK associates with, and is a costimulator for, I κ B kinase α (IKK α). IKK α in turn, phosphorylates I κ B, resulting in I κ B degradation and NF κ B activation. NIK has sequence similarity to several kinases that participate in MAP kinase cascades. NIK appears to be uninvolved in the TRAF2-mediated activation of JNK by TNF.

REFERENCES

1. Rothe, M., et al. 1995. TRAF2-mediated activation of NF κ B by TNF receptor 2 and CD40. *Science* 269: 1424-1427.
2. Hsu, H., et al. 1996. TRADD-TRAF2 and TRADD-FADD interactions define two distinct TNF receptor 1 signal transduction pathways. *Cell* 84: 299-308.
3. Cao, Z., et al. 1996. TRAF6 is a signal transducer for interleukin-1. *Nature* 383: 443-446.
4. Malinin, N.L., et al. 1997. MAP3K-related kinase involved in NF κ B induction by TNF, CD95 and IL-1. *Nature* 385: 540-544.
5. Song, H.Y., et al. 1997. Tumor necrosis factor (TNF)-mediated kinase cascades: bifurcation of nuclear factor- κ B and c-Jun N-terminal kinase (JNK/SAPK) pathways at TNF receptor-associated factor 2. *Proc. Natl. Acad. Sci. USA* 94: 9792-9796.

CHROMOSOMAL LOCATION

Genetic locus: Map3k14 (mouse) mapping to 11 E1.

PRODUCT

NIK siRNA (m) 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see NIK shRNA Plasmid (m): sc-36066-SH and NIK shRNA (m) Lentiviral Particles: sc-36066-V as alternate gene silencing products.

For independent verification of NIK (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-36066A, sc-36066B and sc-36066C.

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

NIK siRNA (m) is recommended for the inhibition of NIK 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 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

NIK (A-12): sc-8417 is recommended as a control antibody for monitoring of NIK 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 NIK gene expression knockdown using RT-PCR Primer: NIK (m)-PR: sc-36066-PR (20 μ l, 541 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Prakash, M., et al. 2011. Hyaluronan-binding protein 1 (HABP1/p32/gC1qR) induces melanoma cell migration and tumor growth by NF κ B dependent MMP-2 activation through Integrin $\alpha_v\beta_3$ interaction. *Cell. Signal.* 23: 1563-1577.
2. Zhang, L., et al. 2016. TRAF2 exerts opposing effects on basal and TNF α -induced activation of the classic IKK complex in hematopoietic cells in mice. *J. Cell Sci.* 129: 1455-1467.
3. Valiño-Rivas, L., et al. 2016. Non-canonical NF κ B activation promotes chemokine expression in podocytes. *Sci. Rep.* 6: 28857.

RESEARCH USE

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