SANTA CRUZ BIOTECHNOLOGY, INC.

IκB-α siRNA (h): sc-29360

BACKGROUND

On the basis of both functional and structural considerations, members of the IκB family of proteins can be divided into four groups. The first of these groups, IκB-α, includes the avian protein pp40 and the mammalian MAD-3, both of which inhibit binding of p50-p65 NFκB complex or Rel protein to their cognate binding sites but do not inhibit the binding of p50 homodimer to κB sites, suggesting that the IκB-α family binds to the p65 subunit of p50-p65 heterocomplex through ankyrin repeats. The second member of the IκB family is represented by a protein designated IκB-β. The third group of IκB proteins is represented by IκB-γ, which is identical in sequence with the C-terminal domain of the p110 precursor of NFκB p50 and is expressed predominantly in lymphoid cells. An additional IκB family member, IκB-ε, has several phosphorylated forms and is primarily found complexed with Rel A and/or c-Rel.

CHROMOSOMAL LOCATION

Genetic locus: NFKBIA (human) mapping to 14q13.2.

PRODUCT

IκB-α 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 IκB-α shRNA Plasmid (h): sc-29360-SH and IκB-α shRNA (h) Lentiviral Particles: sc-29360-V as alternate gene silencing products.

For independent verification of IκB-α (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-29360A, sc-29360B and sc-29360C.

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

IκB-α siRNA (h) is recommended for the inhibition of IκB-α 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

p-IκB-α (B-9): sc-8404 is recommended as a control antibody for monitoring of IκB-α 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 IκB-α gene expression knockdown using RT-PCR Primer: IκB-α (h)-PR: sc-29360-PR (20 µl, 458 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Vu, H.Y., et al. 2008. Proteasome inhibitors induce apoptosis of prostate cancer cells by inducing nuclear translocation of IκB-β. Arch. Biochem. Biophys. 475: 156-163.
2. Chandrasekar, B., et al. 2008. Adiponectin blocks interleukin-18-mediated endothelial cell death via APPL1-dependent AMP-activated protein kinase (AMPK) activation and IKK/NFκB/PTEN suppression. J. Biol. Chem. 283: 24889-24898.
3. Juvekar, A., et al. 2011. Bortezomib induces nuclear translocation of IκB-α resulting in gene-specific suppression of NFκB-dependent transcription and induction of apoptosis in CTCL. Mol. Cancer Res. 9: 183-194.
4. Wei, L., et al. 2011. HSP 27 participates in the maintenance of breast cancer stem cells through regulation of epithelial-mesenchymal transition and nuclear factor-κB. Breast Cancer Res. 13: R101.
5. Yoza, B.K., et al. 2011. Facultative heterochromatin formation at the IL-1β promoter in LPS tolerance and sepsis. Cytokine 53: 145-152.
6. Juvekar, A., et al. 2012. Electrophoretic mobility shift assay analysis of NFκB transcriptional regulation by nuclear IκB-α. Methods Mol. Biol. 809: 49-62.
7. Manna, S., et al. 2013. Proteasome inhibition by bortezomib increases IL-8 expression in androgen-independent prostate cancer cells: the role of IKKα. J. Immunol. 191: 2837-2846.
8. Chen, S.U., et al. 2014. Apoptotic effects of high estradiol concentrations on endometrial glandular cells. J. Clin. Endocrinol. Metab. 99: E971-E980.
9. Chang, T.P., et al. 2015. Bortezomib inhibits expression of TGF-β1, IL-10, and CXCR4, resulting in decreased survival and migration of cutaneous T cell lymphoma cells. J. Immunol. 194: 2942-2953.
10. Li, X., et al. 2020. Different signaling pathways involved in the anti-inflammatory effects of unfractionated heparin on lipopolysaccharide-stimulated human endothelial cells. J. Inflamm. 17: 5.

RESEARCH USE

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