SANTA CRUZ BIOTECHNOLOGY, INC.

IκB-ζ siRNA (h): sc-44896

BACKGROUND

IκB-ζ (also called MAIL-S or INAP) is a member of the IκB family. It shares a 30% identity with other family members and consists of six ankyrin repeats at its C-terminal. IκB-ζ accumulates in the nucleus and, in humans, associates with the p50 and p65 subunits of nuclear NFκB via its ankyrin repeats. The mouse homologue of IκB-ζ has only been shown to associate with the p50 subunit. IκB-ζ inhibits DNA binding and activity of the transcription factor NFκB. Distinct from other IκB family members, IκB-ζ is not degraded upon cell stimulation and activation of NFκB, rather evidence shows that it is up-regulated under these circumstances. This suggests that IκB-ζ plays a significant role in regulation of NFκB and that NFκB may regulate IκB-ζ in a negative feedback loop. Regulation of NFκB by IκB-ζ may differ depending on the species.

REFERENCES

1. Yamazaki, S., et al. 2001. A novel IκB protein, IκB-ζ, induced by proinflammatory stimuli, negatively regulates NFκB in the nuclei. J. Biol. Chem. 276: 27657-27662.
2. Muta, T., et al. 2003. IκB-ζ, a new anti-inflammatory nuclear protein induced by lipopolysaccharide, is a negative regulator for NFκB. J. Endotoxin Res. 9: 187-191.
3. Shiina, T., et al. 2004. Targeted disruption of MAIL, a nuclear IκB protein, leads to severe atopic dermatitis-like disease. J. Biol. Chem. 279: 55493-55498.
4. Kusaka, M., et al. 2005. Gene expression profile in rat renal isografts from brain dead donors. Transplant. Proc. 37: 364-366.
5. Yamazaki, S., et al. 2005. Stimulus-specific induction of a novel nuclear factor-κB regulator, IκB-ζ, via Toll/Interleukin-1 receptor is mediated by mRNA stabilization. J. Biol. Chem. 280: 1678-1687.
6. Motoyama, M., et al. 2005. Positive and negative regulation of nuclear factor-κB-mediated transcription by IκB-ζ, an inducible nuclear protein. J. Biol. Chem. 280: 7444-7451.
7. Muta, T., et al. 2006. IκB-ζ: an inducible regulator of nuclear factor-κB. Vitam. Horm. 74: 301-316.
8. Cowland, J.B., et al. 2006. IL-1β-specific up-regulation of neutrophil gelatinase-associated lipocalin is controlled by IκB-ζ. J. Immunol. 176: 5559-5566.
9. Totzke, G., et al. 2006. A novel member of the IκB family, human IκB-ζ, inhibits transactivation of p65 and its DNA binding. J. Biol. Chem. 281: 12645-12654.

CHROMOSOMAL LOCATION

Genetic locus: NFKBIZ (human) mapping to 3q12.3.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

PRODUCT

IκB-ζ 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-ζ shRNA Plasmid (h): sc-44896-SH and IκB-ζ shRNA (h) Lentiviral Particles: sc-44896-V as alternate gene silencing products.

For independent verification of IκB-ζ (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-44896A, sc-44896B and sc-44896C.

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

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor IκB-ζ gene expression knockdown using RT-PCR Primer: IκB-ζ (h)-PR: sc-44896-PR (20 µl, 554 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Liu, S., et al. 2019. IL-17A synergistically enhances TLR3-mediated IL-36γ production by keratinocytes: a potential role in injury-amplified psoriatic inflammation. Exp. Dermatol. 28: 233-239.

RESEARCH USE

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