

TH-POK siRNA (h): sc-76649

BACKGROUND

TH-POK (T-helper-inducing POZ/Krüppel-like factor), also known as zinc finger protein 67 (ZFP67), zinc finger and BTB domain-containing protein 7B or Krüppel-related zinc finger protein cKrox, is a 539 amino acid protein that contains one BTB (POZ) domain and four C₂H₂-type zinc fingers. Localized to the nucleus, TH-POK functions primarily as a key regulator of lineage commitment of immature T-cell precursors. Specifically, the presence of TH-POK directs positively selected thymocytes to the CD4 lineage, whereas its absence causes default development to the CD8 lineage. TH-POK also functions as a transcriptional repressor of various other genes, such as COL1A1, COL1A2 and fibronectin.

REFERENCES

1. He, X., et al. 2005. The zinc finger transcription factor TH-POK regulates CD4 versus CD8 T-cell lineage commitment. *Nature* 433: 826-833.
2. He, X. and Kappes, D.J. 2006. CD4/CD8 lineage commitment: light at the end of the tunnel? *Curr. Opin. Immunol.* 18: 135-142.
3. Kappes, D.J., et al. 2006. Role of the transcription factor TH-POK in CD4:CD8 lineage commitment. *Immunol. Rev.* 209: 237-252.
4. Kimura, H., et al. 2006. Role of DNA methyl-ation for expression of novel stem cell marker CDCP1 in hematopoietic cells. *Leukemia* 20: 1551-1556.
5. He, X., et al. 2008. CD4-CD8 lineage commitment is regulated by a silencer element at the TH-POK transcription-factor locus. *Immunity* 28: 346-358.

CHROMOSOMAL LOCATION

Genetic locus: ZBTB7B (human) mapping to 1q21.3.

PRODUCT

TH-POK 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see TH-POK shRNA Plasmid (h): sc-76649-SH and TH-POK shRNA (h) Lentiviral Particles: sc-76649-V as alternate gene silencing products.

For independent verification of TH-POK (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-76649A, sc-76649B and sc-76649C.

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

TH-POK siRNA (h) is recommended for the inhibition of TH-POK 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 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

TH-POK (A-4): sc-376250 is recommended as a control antibody for monitoring of TH-POK 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 TH-POK gene expression knockdown using RT-PCR Primer: TH-POK (h)-PR: sc-76649-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Maini, J., et al. 2017. Human PRE-PIK3C2B, an intronic *cis*-element with dual function of activation and repression. *Biochim. Biophys. Acta Gene Regul. Mech.* 1860: 196-204.

RESEARCH USE

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

PROTOCOLS

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