SANTA CRUZ BIOTECHNOLOGY, INC.

ZCCHC11 siRNA (h): sc-88218

BACKGROUND

Zinc-finger proteins contain DNA-binding domains and have a wide variety of functions, most of which encompass some form of transcriptional activation or repression. ZCCHC11 (zinc finger, CCHC domain containing 11), also known as terminal uridylyltransferase 4 (TUTase 4) or PAPD3, is a 1,644 amino acid nuclear and cytoplasmic protein, mostly located to the nucleus, belonging to the DNA polymerase type-B-like family. Functioning as a uridylyltransferase, ZCCHC11 acts in conjunction with LIN-28 to suppress microRNA biogenesis through pre-microRNA uridylation. ZCCHC11 exists as two alternatively spliced isoforms that are required for stem cell maintenance, cytokine expression and play a role in supressing Toll-like receptor (TLR) induced NFκB activity by binding to T2BP (TRAF-interacting protein with forkhead-associated domain).

REFERENCES

1. Keller, W., et al. 2002. Gene regulation: reviving the message. Nature 419: 267-268.
2. Minoda, Y., et al. 2006. A novel Zinc finger protein, ZCCHC11, interacts with TIFA and modulates TLR signaling. Biochem. Biophys. Res. Commun. 344: 1023-1030.
3. Mullen, T.E., et al. 2008. Degradation of histone mRNA requires oligouridylation followed by decapping and simultaneous degradation of the mRNA both 5' to 3' and 3' to 5'. Genes Dev. 22: 50-65.
4. Heo, I., et al. 2008. Lin28 mediates the terminal uridylation of let-7 precursor MicroRNA. Mol. Cell 32: 276-284.
5. Heo, I., et al. 2009. TUT4 in concert with Lin28 suppresses microRNA biogenesis through pre-microRNA uridylation. Cell 138: 696-708.
6. Jones, M.R., et al. 2009. Zcchc11-dependent uridylation of microRNA directs cytokine expression. Nat. Cell Biol. 11: 1157-1163.
7. Hagan, J.P., et al. 2009. Lin28 recruits the TUTase Zcchc11 to inhibit let-7 maturation in mouse embryonic stem cells. Nat. Struct. Mol. Biol. 16: 1021-1025.

CHROMOSOMAL LOCATION

Genetic locus: ZCCHC11 (human) mapping to 1p32.3.

PRODUCT

ZCCHC11 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 ZCCHC11 shRNA Plasmid (h): sc-88218-SH and ZCCHC11 shRNA (h) Lentiviral Particles: sc-88218-V as alternate gene silencing products.

For independent verification of ZCCHC11 (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-88218A, sc-88218B and sc-88218C.

PROTOCOLS

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

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

ZCCHC11 siRNA (h) is recommended for the inhibition of ZCCHC11 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 ZCCHC11 gene expression knockdown using RT-PCR Primer: ZCCHC11 (h)-PR: sc-88218-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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