

ZSCAN4C siRNA (m): sc-145547

BACKGROUND

ZSCAN4C (zinc finger and SCAN domain containing protein 4C), also known as Gm397, is a 506 amino acid nuclear mouse protein that contains four C₂H₂-type zinc fingers and one SCAN box domain. While it is embryonic stem (ES) cell specific, ZSCAN4C is expressed in only 5% of ES cells at a given time. Transcriptionally regulated by ZSCAN10, ZSCAN4C is a transcription factor that is required to regulate ES cell pluripotency. ZSCAN4C binds telomeres and plays a key role in genomic stability in ES cells by regulating telomere elongation. ZSCAN4C also acts as an activator of spontaneous telomere sister chromatid exchange (T-SCE) and telomere elongation in undifferentiated ES cells. The gene that encodes ZSCAN4C maps to mouse chromosome 7 A1.

REFERENCES

1. Zhang, W., et al. 2006. Zfp206 regulates ES cell gene expression and differentiation. *Nucleic Acids Res.* 34: 4780-4790.
2. Falco, G., et al. 2007. Zscan4: a novel gene expressed exclusively in late 2-cell embryos and embryonic stem cells. *Dev. Biol.* 307: 539-550.
3. Tanaka, T.S. 2009. Transcriptional heterogeneity in mouse embryonic stem cells. *Reprod. Fertil. Dev.* 21: 67-75.
4. Storm, M.P., et al. 2009. Characterization of the phosphoinositide 3-kinase-dependent transcriptome in murine embryonic stem cells: identification of novel regulators of pluripotency. *Stem Cells* 27: 764-775.
5. Lee, E. and Bussemaker, H.J. 2010. Identifying the genetic determinants of transcription factor activity. *Mol. Syst. Biol.* 6: 412.
6. Zalzman, M., et al. 2010. Zscan4 regulates telomere elongation and genomic stability in ES cells. *Nature* 464: 858-863.

CHROMOSOMAL LOCATION

Genetic locus: Zscan4c (mouse) mapping to 7 A1.

PRODUCT

ZSCAN4C siRNA (m) is a target-specific 19-25 nt siRNA 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 ZSCAN4C shRNA Plasmid (m): sc-145547-SH and ZSCAN4C shRNA (m) Lentiviral Particles: sc-145547-V as alternate gene silencing 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 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.

RESEARCH USE

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

APPLICATIONS

ZSCAN4C siRNA (m) is recommended for the inhibition of ZSCAN4C 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ZSCAN4C gene expression knockdown using RT-PCR Primer: ZSCAN4C (m)-PR: sc-145547-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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