SANTA CRUZ BIOTECHNOLOGY, INC.

Oct-1 siRNA (h): sc-36119

BACKGROUND

POU domain proteins contain a bipartite DNA binding domain divided by a flexible linker that enables them to adopt various monomer configurations on DNA. The versatility of POU protein operation is additionally conferred at the dimerization level. The POU dimer from the Oct-1 gene formed on the palindromic Oct factor-recognition element (PORE), which is comprised of an inverted pair of homeodomain-binding sites separated by exactly 5 bp (ATTTGAAATGCAAAT), could recruit the transcriptional co-activator OBF1. Studies of tissue-specific expression of immunoglobulin promoters demonstrate the importance of an octamer, ATTTGCAT, and the proteins that bind to it. This is a regulatory element important for tissue- and cell-specific transcription, as well as for transcription of a number of housekeeping genes. The Oct-1 gene encodes one protein, NF-A1, which is found in nuclear extracts from all cell types and thus is not specific to lymphoid cells as is the protein NF-A2, which is encoded by the Oct-2 gene.

REFERENCES

1. Clerc, R.G., et al. 1988. The B cell specific Oct-2 protein contains POU box- and homeobox-type domains. Genes Dev. 2: 1570-1581.
2. Scheidereit, C., et al. 1988. A human lymphoid-specific transcription factor that activates immunoglobulin genes is a homeobox protein. Nature 336: 551-557.

CHROMOSOMAL LOCATION

Genetic locus: POU2F1 (human) mapping to 1q24.1.

PRODUCT

Oct-1 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 Oct-1 shRNA Plasmid (h): sc-36119-SH and Oct-1 shRNA (h) Lentiviral Particles: sc-36119-V as alternate gene silencing products.

For independent verification of Oct-1 (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-36119A, sc-36119B and sc-36119C.

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

Oct-1 siRNA (h) is recommended for the inhibition of Oct-1 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

Oct-1 (12F11): sc-8024 is recommended as a control antibody for monitoring of Oct-1 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 Oct-1 gene expression knockdown using RT-PCR Primer: Oct-1 (h)-PR: sc-36119-PR (20 µl, 434 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Kenneth, N.S., et al. 2007. TRRAP and GCN5 are used by c-Myc to activate RNA polymerase III transcription. Proc. Natl. Acad. Sci. USA 104: 14917-14922.
2. Thum, T., et al. 2008. LOX-1 receptor blockade abrogates oxLDL-induced oxidative DNA damage and prevents activation of the transcriptional repressor Oct-1 in human coronary arterial endothelium. J. Biol. Chem. 283: 19456-19464.
3. Dennis, M.Y., et al. 2009. A common variant associated with dyslexia reduces expression of the KIAA0319 gene. PLoS Genet. 5: e1000436.
4. Saha, T., et al. 2010. Transcriptional regulation of the base excision repair pathway by BRCA1. J. Biol. Chem. 285: 19092-19105.
5. Robinson, A.R., et al. 2011. Cellular transcription factor Oct-1 interacts with the Epstein-Barr virus BRLF1 protein to promote disruption of viral latency. J. Virol. 85: 8940-8953.
6. Wang, Z.H., et al. 2018. C/EBP β regulates δ-secretase expression and mediates pathogenesis in mouse models of Alzheimer's disease. Nat. Commun. 9: 1784.
7. Gonzalez-Lopez, O., et al. 2019. A herpesvirus transactivator and cellular POU proteins extensively regulate DNA binding of the host Notch signaling protein RBP-Jκ to the virus genome. J. Biol. Chem. 294: 13073-13092.

RESEARCH USE

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