

Oct-2 siRNA (m): sc-36122

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 OCT1 gene formed on the palindromic OCT factor recognition element, or PORE (ATTGAAATGCAAAT), could recruit the transcriptional coactivator 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. Oct-1 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 Oct-2.

REFERENCES

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2. Scheidereit, C., et al. 1988. A human lymphoid-specific transcription factor that activates immunoglobulin genes is a homeobox protein. *Nature* 336: 551-557.
3. Tomilin, A., et al. 2000. Synergism with the coactivator OBF-1 (OCA-B, BOB-1) is mediated by a specific POU dimer configuration. *Cell* 103: 853-864.
4. Salas, M., et al. 2003. Critical role for the Oct-2/OCA-B partnership in Ig-secreting cells. *J. Immunol.* 171: 6589-6598.
5. Podojil, J.R., et al. 2004. CD86 and β_2 -adrenergic receptor signaling pathways, respectively, increase Oct-2 and OCA-B expression and binding to the 3'-IgH enhancer in B cells. *J. Biol. Chem.* 279: 23394-23404.
6. Sepulveda, M.A., et al. 2004. NF κ B and Oct-2 synergize to activate the human 3'-IgH hs4 enhancer in B cells. *J. Immunol.* 172: 1054-1064.
7. Corcoran, L.M., et al. 2004. All known *in vivo* functions of the Oct-2 transcription factor require the C-terminal protein domain. *J. Immunol.* 172: 2962-2969.

CHROMOSOMAL LOCATION

Genetic locus: Pou2f2 (mouse) mapping to 7 A3.

PRODUCT

Oct-2 siRNA (m) 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 Oct-2 shRNA Plasmid (m): sc-36122-SH and Oct-2 shRNA (m) Lentiviral Particles: sc-36122-V as alternate gene silencing products.

For independent verification of Oct-2 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-36122A, sc-36122B and sc-36122C.

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

Oct-2 siRNA (m) is recommended for the inhibition of Oct-2 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.

GENE EXPRESSION MONITORING

Oct-2 (H-3): sc-377476 is recommended as a control antibody for monitoring of Oct-2 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 Oct-2 gene expression knockdown using RT-PCR Primer: Oct-2 (m)-PR: sc-36122-PR (20 μ l, 497 bp). 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.

PROTOCOLS

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