SANTA CRUZ BIOTECHNOLOGY, INC.

OC-2 siRNA (m): sc-61255

BACKGROUND

The predicted 485 amino acid ONECUT2 (OC-2) protein is a transcriptional activator that functions in activating the transcription of several liver genes, such as HNF3-β. OC-2 is a member of the CUT homeobox family and contains one CUT DNA-binding domain and one homeobox DNA-binding domain. OC-2 shares several regions of sequence homology with OC-1 (HNF6), including a serine/threonine- and proline-rich sequence (STP box). OC-2 localizes to the nucleus and abundant expression of OC-2 is observed in liver and skin tissues, whereas lower expression is demonstrated in testis, brain (occipital cortex) and urinary bladder tissues. The ability of OC-2 to recognize binding sites present in regulatory regions of liver-expressed genes differ from, but overlap with, those of OC-1. Like OC-1, recombinant OC-2 stimulates transcription of the HNF3-β gene. Research also suggests that OC-2 participates in liver differentiation and metabolism.

REFERENCES

1. Jacquemin, P., Lannoy, V.J., Rousseau, G.G. and Lemaigre, F.P. 1999. OC-2, a novel mammalian member of the ONECUT class of homeodomain transcription factors whose function in liver partially overlaps with that of hepatocyte nuclear factor-6. J. Biol. Chem. 274: 2665-2671.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 604894. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Jacquemin, P., Pierreux, C.E., Fierens, S., van Eyll, J.M., Lemaigre, F.P. and Rousseau, G.G. 2003. Cloning and embryonic expression pattern of the mouse onecut transcription factor OC-2. Gene Expr. Patterns 3: 639-644.
4. Clotman, F., Jacquemin, P., Plumb-Rudewiez, N., Pierreux, C.E., Van der Smissen, P., Dietz, H.C., Courtoy, P.J., Rousseau, G.G. and Lemaigre, F.P. 2005. Control of liver cell fate decision by a gradient of TGFβ signaling modulated by onecut transcription factors. Genes Dev. 19: 1849-1854.
5. Clotman, F. and Lemaigre, F.P. 2006. Control of hepatic differentiation by activin/TGFβ signaling. Cell Cycle 5: 168-171.

CHROMOSOMAL LOCATION

Genetic locus: Onecut2 (mouse) mapping to 18 E1.

PRODUCT

OC-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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see OC-2 shRNA Plasmid (m): sc-61255-SH and OC-2 shRNA (m) Lentiviral Particles: sc-61255-V as alternate gene silencing products.

For independent verification of OC-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-61255A, sc-61255B and sc-61255C.

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

OC-2 siRNA (m) is recommended for the inhibition of OC-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 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 OC-2 gene expression knockdown using RT-PCR Primer: OC-2 (m)-PR: sc-61255-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.