



OC-3 siRNA (h): sc-97831

BACKGROUND

OC-3 (one cut domain family member 3) is a 494 amino acid nuclear protein that acts as a transcriptional activator. OC-3 binds the consensus DNA sequence 5'-DHWATTGAYTWW-3' on a diverse array of gene promoters, such as Prealbumin and HNF-3 β . OC-3 is a member of the ONECUT homeobox family and contains one CUT DNA-binding domain and one homeobox DNA-binding domain. ONECUT proteins regulate gene networks by controlling transcription factor expression and also play an important role in cell metabolism and differentiation. OC-3 shares a significant amount of sequence similarity with OC-1 and OC-2 and is found in upper intestine, stomach and brain in both adult and embryonic mouse. Due to their expression patterns, it is likely that all ONECUT proteins participate in the regulation of organ development from the foregut and midgut endoderm.

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. Vanhorenbeeck, V., Jacquemin, P., Lemaigre, F.P. and Rousseau, G.G. 2002. OC-3, a novel mammalian member of the ONECUT class of transcription factors. *Biochem. Biophys. Res. Commun.* 292: 848-854.
3. Jacquemin, P., Lemaigre, F.P. and Rousseau, G.G. 2003. The Onecut transcription factor HNF-6 (OC-1) is required for timely specification of the pancreas and acts upstream of Pdx-1 in the specification cascade. *Dev. Biol.* 258: 105-116.
4. 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.
5. Pierreux, C.E., Vanhorenbeeck, V., Jacquemin, P., Lemaigre, F.P. and Rousseau, G.G. 2004. The transcription factor hepatocyte nuclear factor-6/Onecut-1 controls the expression of its paralog Onecut-3 in developing mouse endoderm. *J. Biol. Chem.* 279: 51298-51304.
6. Vanhorenbeeck, V., Jenny, M., Cornut, J.F., Gradwohl, G., Lemaigre, F.P., Rousseau, G.G. and Jacquemin, P. 2007. Role of the Onecut transcription factors in pancreas morphogenesis and in pancreatic and enteric endocrine differentiation. *Dev. Biol.* 305: 685-694.
7. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 611294. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
8. Simion, A., Laudadio, I., Prevot, P.P., Raynaud, P., Lemaigre, F.P. and Jacquemin, P. 2010. MiR-495 and miR-218 regulate the expression of the Onecut transcription factors HNF-6 and OC-2. *Biochem. Biophys. Res. Commun.* 391: 293-298.
9. Francius, C. and Clotman, F. 2010. Dynamic expression of the Onecut transcription factors HNF-6, OC-2 and OC-3 during spinal motor neuron development. *Neuroscience* 165: 116-129.

CHROMOSOMAL LOCATION

Genetic locus: ONECUT3 (human) mapping to 19p13.3.

PRODUCT

OC-3 siRNA (h) 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 OC-3 shRNA Plasmid (h): sc-97831-SH and OC-3 shRNA (h) Lentiviral Particles: sc-97831-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.

APPLICATIONS

OC-3 siRNA (h) is recommended for the inhibition of OC-3 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 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 OC-3 gene expression knockdown using RT-PCR Primer: OC-3 (h)-PR: sc-97831-PR (20 μ l). 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.