SANTA CRUZ BIOTECHNOLOGY, INC.

POU2F3 siRNA (h): sc-38776

BACKGROUND

Tissue-restricted POU domain transcription factors, which bind octamer or octamer-like gene sequences, play roles in cellular differentiation and the development of several organs. POU2F3, also designated Oct-11, PLA-1 protein or transcription factor Skn-1, represents a member of the class 2 POU domain family of transcriptional activators, highly related to Oct-2, that are selectively expressed in terminally differentiating epidermal and hair follicles. POU2F3 is characterized by an N-terminal domain that inhibits DNA binding and can inhibit transactivation by Oct-2. Alternative splicing of the N-terminus serves to activate cytokeratin 10 (K10) gene expression. When POU2F3 is expressed in eukaryotic cells it can bind to an octamer site, suggesting that *in vivo* cellular factors modulate the activity of the inhibitory domain to permit DNA-binding. The inhibitory domain does not allow transactivation by POU2F3 or by a heterologous transactivator containing this domain in *cis*. POU2F3 contributes to epidermal stratification by primarily promoting keratinocyte proliferation and secondarily by enhancing the subsequent keratinocyte differentiation.

REFERENCES

1. Goldsborough, A.S., et al. 1993. Cloning, chromosomal localization and expression pattern of the POU domain gene Oct-11. Nucleic Acids Res. 21: 127-134.
2. Andersen, B., et al. 1993. Skn-1a and Skn-1i: two functionally distinct Oct-2-related factors expressed in epidermis. Science 260: 78-82.
3. Andersen, B., et al. 1997. Characterization of Skn-1a/i POU domain factors and linkage to papillomavirus gene expression. J. Biol. Chem. 272: 15905-15913.
4. Andersen, B., et al. 1997. Functions of the POU domain genes Skn-1a/i and Tst-1/Oct-6/SCIP in epidermal differentiation. Genes Dev. 11: 1873-1884.
5. Hildesheim, J., et al. 1999. Characterization of the regulatory domains of the human Skn-1a/Epoc-1/Oct-11 POU transcription factor. J. Biol. Chem. 274: 26399-26406.
6. Hildesheim, J., et al. 2001. The hSkn-1a POU transcription factor enhances epidermal stratification by promoting keratinocyte proliferation. J. Cell Sci. 114: 1913-1923.

CHROMOSOMAL LOCATION

Genetic locus: POU2F3 (human) mapping to 11q23.3.

PRODUCT

POU2F3 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 POU2F3 shRNA Plasmid (h): sc-38776-SH and POU2F3 shRNA (h) Lentiviral Particles: sc-38776-V as alternate gene silencing products.

For independent verification of POU2F3 (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-38776A, sc-38776B and sc-38776C.

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

POU2F3 siRNA (h) is recommended for the inhibition of POU2F3 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

POU2F3 (6D1): sc-293402 is recommended as a control antibody for monitoring of POU2F3 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 POU2F3 gene expression knockdown using RT-PCR Primer: POU2F3 (h)-PR: sc-38776-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.

PROTOCOLS

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