SANTA CRUZ BIOTECHNOLOGY, INC.

Vgl-1 siRNA (h): sc-91232

BACKGROUND

The transcriptional enhancer factor-1 (TEF-1) family of transcription factors regulate tissue-specific gene expression in muscle and placenta. The mechanism whereby TEF-1 confers tissue specificity depends largely on the interaction of TEF-1 with tissue-specific cofactors. Transcription cofactor vestigial-like protein 1 (Vgl-1), also known as TONDU or TDU, is a TEF-1 cofactor that is critical for controlling tissue-specific gene activation of TEF-1. Vgl-1 interacts with TEF-1 through a conserved sequence known as the TONDU (TDU) motif. While Vgl-1 is expressed almost exclusively in placenta of adult human tissues, it is expressed more widely in human embryo tissues including kidney, lung, skeletal muscle, heart and placenta. Vgl-1 is 258 amino acids in length and localizes to the nucleus.

REFERENCES

1. Vaudin, P., et al. 1999. TONDU (TDU), a novel human protein related to the product of vestigial (vg) gene of Drosophila melanogaster interacts with vertebrate TEF factors and substitutes for Vg function in wing formation. Development 126: 4807-4816.
2. Maeda, T., et al. 2002. Mammalian vestigial-like 2, a cofactor of TEF-1 and MEF2 transcription factors that promotes skeletal muscle differentiation. J. Biol. Chem. 277: 48889-48898.
3. Mielcarek, M., et al. 2002. VITO-1, a novel vestigial related protein is predominantly expressed in the skeletal muscle lineage. Mech. Dev. 119: S269-S274.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 300583. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Karasseva, N., et al. 2003. Transcription enhancer factor 1 binds multiple muscle MEF2 and A/T-rich elements during fast-to-slow skeletal muscle fiber type transitions. Mol. Cell. Biol. 23: 5143-5164.
6. Chen, H.H., et al. 2004. Vgl-4, a novel member of the vestigial-like family of transcription cofactors, regulates α1-adrenergic activation of gene expression in cardiac myocytes. J. Biol. Chem. 279: 30800-30806.

CHROMOSOMAL LOCATION

Genetic locus: VGLL1 (human) mapping to Xq26.3.

PRODUCT

Vgl-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 Vgl-1 shRNA Plasmid (h): sc-91232-SH and Vgl-1 shRNA (h) Lentiviral Particles: sc-91232-V as alternate gene silencing products.

For independent verification of Vgl-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-91232A, sc-91232B and sc-91232C.

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

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

Vgl-1 (NQ-A1): sc-135601 is recommended as a control antibody for monitoring of Vgl-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).

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 Vgl-1 gene expression knockdown using RT-PCR Primer: Vgl-1 (h)-PR: sc-91232-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.