SANTA CRUZ BIOTECHNOLOGY, INC.

Vgl-2 siRNA (h): sc-95052

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Vgl-2 (transcription cofactor vestigial-like protein 2), also known as VITO-1, is a 317 amino acid protein that contains a domain through which it interacts with TEF-1, a protein that plays a role in controlling the expression of numerous genes. Specific to skeletal muscle, Vgl-2 is expressed highly in adult fast muscle and is expressed at lower levels in adult slow muscle and fetal skeletal muscle. During muscle differentiation, Vgl-2 mRNA levels increase and Vgl-2 translocates from the cytoplasm to the nucleus. Overexpression of Vgl-2 in MYOD-transfected 10T1/2 mouse embryonic fibroblasts increases expression of myosin heavy chain (MHC), which is a marker of terminal muscle differentiation. This evidence suggests that Vgl-2 is essential for muscle gene expression. There are two isoforms of Vgl-2 that are produced as a result of alternative splicing events.

REFERENCES

1. Mielcarek, M., et al. 2002. VITO-1, a novel vestigial related protein is predominantly expressed in the skeletal muscle lineage. Gene Expr. Patterns 2: 305-310.
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. Chen, H.H., et al. 2004. Transcription cofactor Vgl-2 is required for skeletal muscle differentiation. Genesis 39: 273-279.
4. 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.
5. Günther, S., et al. 2004. VITO-1 is an essential cofactor of TEF1-dependent muscle-specific gene regulation. Nucleic Acids Res. 32: 791-802.
6. Mahoney, W.M., et al. 2005. The transcriptional co-activator TAZ interacts differentially with transcriptional enhancer factor-1 (TEF-1) family members. Biochem. J. 388: 217-225.
7. Online Mendelian Inheritance in Man, OMIM™. 2006. Johns Hopkins University, Baltimore, MD. MIM Number: 609979. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
8. Mann, C.J., et al. 2007. Vestigial-like-2b (VITO-1b) and Tead-3a (Tef-5a) expression in zebrafish skeletal muscle, brain and notochord. Gene Expr. Patterns 7: 827-836.
9. Deng, H., et al. 2009. Alternative requirements for Vestigial, Scalloped, and Dmef2 during muscle differentiation in *Drosophila melanogaster.* Mol. Biol. Cell 20: 256-269.

CHROMOSOMAL LOCATION

Genetic locus: VGLL2 (human) mapping to 6q22.1.

PROTOCOLS

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

PRODUCT

Vgl-2 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-2 shRNA Plasmid (h): sc-95052-SH and Vgl-2 shRNA (h) Lentiviral Particles: sc-95052-V as alternate gene silencing products.

For independent verification of Vgl-2 (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-95052A, sc-95052B and sc-95052C.

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-2 siRNA (h) is recommended for the inhibition of Vgl-2 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Vgl-2 gene expression knockdown using RT-PCR Primer: Vgl-2 (h)-PR: sc-95052-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.