SANTA CRUZ BIOTECHNOLOGY, INC.

VGF siRNA (h): sc-42328

BACKGROUND

Nerve growth factor (NGF) is a peptide that plays a key role in the differentiation and survival of neurons in the peripheral nervous system (PNS) and the central nervous system (CNS). VGF is a peptide synthesized and secreted by neurons and is upregulated by NGF in the PC12 cell line. VGF is widely expressed in both the PNS and CNS, but is especially abundant in the adult hypothalamus. VGF plays an essential role in how the brain regulates energy expenditure and body weight. Its expression is rapidly induced by injury, the circadian clock, and neuronal activity.

REFERENCES

1. Possenti, R., et al. 1989. A protein induced by NGF in PC12 cells is stored in secretory vesicles and released through the regulated pathway. EMBO J. 8: 2217-2223.
2. Salton, S.R., et al. 1991. Structure of the gene encoding VGF, a nervous system-specific mRNA that is rapidly and selectively induced by nerve growth factor in PC12 cells. Mol. Cell. Biol. 11: 2335-2349.
3. Mahata, M., et al. 1993. Messenger RNA levels of chromogranin B, secretogranin II, and VGF in rat brain after AF64A-induced septohippocampal cholinergic lesions. J. Neurochem. 61: 1648-1656.
4. van den Pol, A.N., et al. 1994. VGF expression in the brain. J. Comp. Neurol. 347: 455-469.
5. Lombardo, A., et al. 1995. A developmentally regulated nerve growth factor-induced gene, VGF, is expressed in geniculocortical afferents during synaptogenesis. Neuroscience 65: 997-1008.
6. Wisor, J.P., et al. 1997. Regulation of the vgf gene in the golden hamster suprachiasmatic nucleus by light and by the circadian clock. J. Comp. Neurol. 378: 229-238.
7. Snyder, S.E., et al. 1998. Expression of VGF mRNA in the adult rat central nervous system. J. Comp. Neurol. 394: 91-105.
8. Hahm, S., et al. 1999. Targeted deletion of the VGF gene indicates that the encoded secretory peptide precursor plays a novel role in the regulation of energy balance. Neuron 23: 537-548.

CHROMOSOMAL LOCATION

Genetic locus: VGF (human) mapping to 7q22.1.

PRODUCT

VGF siRNA (h) is a pool of 2 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 VGF shRNA Plasmid (h): sc-42328-SH and VGF shRNA (h) Lentiviral Particles: sc-42328-V as alternate gene silencing products.

For independent verification of VGF (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-42328A and sc-42328B.

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

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

VGF (B-8): sc-365397 is recommended as a control antibody for monitoring of VGF 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 VGF gene expression knockdown using RT-PCR Primer: VGF (h)-PR: sc-42328-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.