SANTA CRUZ BIOTECHNOLOGY, INC.

GRIF-1 siRNA (h): sc-60763

BACKGROUND

GRIF-1 (γ-aminobutyric acid type A ($GABA_A$) receptor interacting factor-1, also known as: OGT-interacting protein, OIP106), is a kinesin-binding, trafficking protein which is a member of a recently identified coiled-coil family of proteins. It has been proposed that GRIF-1 is a kinesin associated protein that functions as an adaptor in the anterograde trafficking of organelles to synapses. Studies have found that the KIF5C binding domain of GRIF-1, GRIF-1 (124-283), associates with the KIF5C non-motor domain of kinesin. GRIF-1a protein is also only expressed in excitable tissues (i.e. brain, heart, and skeletal muscle). In brain tissue, it was seen that anti-GRIF-1-(8-633) antibodies specifically co-immunoprecipitated two kinesin-immunoreactive species, whereas in the heart, only one kinesin-immunoreactive species was immunoprecipitated.

REFERENCES

1. Hadano, S., et al. 2001. Cloning and characterization of three novel genes, ALS2CR1, ALS2CR2, and ALS2CR3, in the juvenile amyotrophic lateral sclerosis (ALS2) critical region at chromosome 2q33-q34: candidate genes for ALS2. Genomics 71: 200-213.
2. Beck, M., et al. 2002. Identification, molecular cloning, and characterization of a novel $GABA_A$ receptor-associated protein, GRIF-1. J. Biol. Chem. 277: 30079-30090.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 608112. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Brickley, K., et al. 2005. GRIF-1 and OIP106, association *in vivo* and *in vitro* with kinesin. J. Biol. Chem. 280: 14723-14732.
5. Pozo, K. and Stephenson, F.A. 2006. GRIF-1-kinesin-1 interactions: a confocal microscopy study. Biochem. Soc. Trans. 34: 48-50.
6. Smith, M.J., et al. 2006. Mapping the GRIF-1 binding domain of the kinesin, KIF5C, substantiates a role for GRIF-1 as an adaptor protein in the anterograde trafficking of cargoes. J. Biol. Chem. 281: 27216-27228.

CHROMOSOMAL LOCATION

Genetic locus: TRAK2 (human) mapping to 2q33.1.

PRODUCT

GRIF-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 GRIF-1 shRNA Plasmid (h): sc-60763-SH and GRIF-1 shRNA (h) Lentiviral Particles: sc-60763-V as alternate gene silencing products.

For independent verification of GRIF-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-60763A, sc-60763B and sc-60763C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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

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

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor GRIF-1 gene expression knockdown using RT-PCR Primer: GRIF-1 (h)-PR: sc-60763-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Zhao, Y., et al. 2021. Metaxins are core components of mitochondrial transport adaptor complexes. Nat. Commun. 12: 83.

PROTOCOLS

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