

ZNRF3 siRNA (m): sc-155815

BACKGROUND

Zinc-finger proteins contain DNA-binding domains and have a wide variety of functions, most of which encompass some form of transcriptional activation or repression. The RING-type zinc finger motif is present in a number of viral and eukaryotic proteins and is made of a conserved cysteine-rich domain that is able to bind two zinc atoms. Proteins that contain this conserved domain are generally involved in the ubiquitination pathway of protein degradation. The three classes of enzymes involved in ubiquitination are the ubiquitin-activating enzymes (E1s), the ubiquitin-conjugating enzymes (E2s) and the ubiquitin-protein ligases (E3s). ZNRF3 (zinc/RING finger protein 3), also known as RNF203 (RING finger protein 203), is a 936 amino acid single pass transmembrane protein that contains one RING-type zinc finger. Related zinc/RING finger proteins, such as ZNRF1 and ZNRF2, are E3 ubiquitin-protein ligases that are thought to be involved in the establishment and maintenance of neuronal transmission and plasticity, therefore it is likely that ZNRF3 may function in a similar manner.

REFERENCES

1. Hochstrasser, M. 1995. Ubiquitin, proteasomes, and the regulation of intracellular protein degradation. *Curr. Opin. Cell Biol.* 7: 215-223.
2. Hochstrasser, M. 1996. Ubiquitin-dependent protein degradation. *Annu. Rev. Genet.* 30: 405-439.
3. Borden, K.L. and Freemont, P.S. 1996. The RING finger domain: a recent example of a sequence-structure family. *Curr. Opin. Struct. Biol.* 6: 395-401.
4. Haas, A.L. and Siepmann, T.J. 1997. Pathways of ubiquitin conjugation. *FASEB J.* 11: 1257-1268.
5. Sun, Y., Tan, M., Duan, H. and Swaroop, M. 2001. SAG/ROC/Rbx/Hrt, a zinc RING finger gene family: molecular cloning, biochemical properties, and biological functions. *Antioxid. Redox Signal.* 3: 635-650.
6. Araki, T., Nagarajan, R. and Milbrandt, J. 2001. Identification of genes induced in peripheral nerve after injury. Expression profiling and novel gene discovery. *J. Biol. Chem.* 276: 34131-34141.
7. Araki, T. and Milbrandt, J. 2003. ZNRF proteins constitute a family of presynaptic E3 ubiquitin ligases. *J. Neurosci.* 23: 9385-9394.

CHROMOSOMAL LOCATION

Genetic locus: Znf3 (mouse) mapping to 11 A1.

PRODUCT

ZNRF3 siRNA (m) is a target-specific 19-25 nt siRNA designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ZNRF3 shRNA Plasmid (m): sc-155815-SH and ZNRF3 shRNA (m) Lentiviral Particles: sc-155815-V as alternate gene silencing products.

PROTOCOLS

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

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

ZNRF3 siRNA (m) is recommended for the inhibition of ZNRF3 expression in mouse 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 μ M in 66 μ l. 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 ZNRF3 gene expression knockdown using RT-PCR Primer: ZNRF3 (m)-PR: sc-155815-PR (20 μ l). 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.