

zygin 1 siRNA (m): sc-37411

BACKGROUND

Zygin 1, also known as FEZ1 (fasciculation and elongation protein ζ 1), is a 392 amino acid cytoplasmic protein that is translocated from the plasma membrane to the cytoplasm by activation of PKC ζ . PKC ζ also enhances zygin 1 interaction with UFD2 and polyubiquitination. Expressed mainly in brain, zygin 1 is a mammalian ortholog of *Caenorhabditis elegans* UNC-76 and is able to restore partial locomotion and axonal fasciculation to *C. elegans* UNC-76 mutants, which suggest a functional role in axonal outgrowth. As component of the network of molecules that regulate cellular morphology and axon guidance machinery, zygin 1 may also be involved in microtubule associated transport and transcriptional regulation. Mutations in the gene encoding zygin 1 may be linked to the pathogenesis of schizophrenia. Zygin 1 exists as two alternatively spliced isoforms that are designated isoform long and isoform short.

REFERENCES

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2. Ikuta, J., et al. 2007. Fasciculation and elongation protein ζ -1 (FEZ1) participates in the polarization of hippocampal neuron by controlling the mitochondrial motility. *Biochem. Biophys. Res. Commun.* 353: 127-132.
3. Fujita, T., et al. 2007. Axonal guidance protein FEZ1 associates with Tubulin and kinesin motor protein to transport mitochondria in neurites of NGF-stimulated PC12 cells. *Biochem. Biophys. Res. Commun.* 361: 605-610.
4. Lanza, D.C., et al. 2008. Over-expression of GFP-FEZ1 causes generation of multi-lobulated nuclei mediated by microtubules in HEK293 cells. *Exp. Cell Res.* 314: 2028-2039.
5. Sakae, N., et al. 2008. Mice lacking the schizophrenia-associated protein FEZ1 manifest hyperactivity and enhanced responsiveness to psychostimulants. *Hum. Mol. Genet.* 17: 3191-3203.
6. Haedicke, J., et al. 2009. The brain-specific factor FEZ1 is a determinant of neuronal susceptibility to HIV-1 infection. *Proc. Natl. Acad. Sci. USA* 106: 14040-14045.
7. He, J., et al. 2009. Expression of fasciculation and elongation protein ζ -1 (FEZ1) in cultured rat neonatal astrocytes. *Mol. Cell. Biochem.* 325: 159-167.
8. Lanza, D.C., et al. 2009. Human FEZ1 has characteristics of a natively unfolded protein and dimerizes in solution. *Proteins* 74: 104-121.

CHROMOSOMAL LOCATION

Genetic locus: Fez1 (mouse) mapping to 9 A4.

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.

PRODUCT

zygin 1 siRNA (m) 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see zygin 1 shRNA Plasmid (m): sc-37411-SH and zygin 1 shRNA (m) Lentiviral Particles: sc-37411-V as alternate gene silencing products.

For independent verification of zygin 1 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-37411A, sc-37411B and sc-37411C.

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

zygin 1 siRNA (m) is recommended for the inhibition of zygin 1 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 zygin 1 gene expression knockdown using RT-PCR Primer: zygin 1 (m)-PR: sc-37411-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.