Store at -20°C

SignalSilence® FEZ1 siRNA I

#72660

Cell Signaling TECHNOLOGY®

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Entrez-Gene ID #9638
UniProt ID #Q99689

For Research Use Only. Not For Use In Diagnostic Procedures.

Species Cross-Reactivity: H, (M, R)

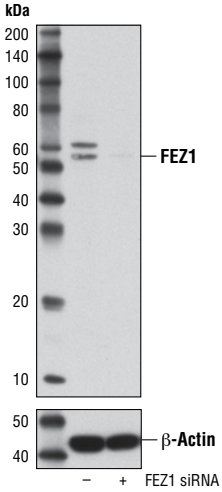
Description: SignalSilence® FEZ1 siRNA I from Cell Signaling Technology (CST) allows the researcher to specifically inhibit FEZ1 expression using RNA interference, a method whereby gene expression can be selectively silenced through the delivery of double stranded RNA molecules into the cell. All SignalSilence® siRNA products from CST are rigorously tested in-house and have been shown to reduce target protein expression by western analysis.

Background: The coiled-coil containing protein fasciculation and elongation protein zeta-1 (FEZ1) is expressed predominately in the brain and is the mammalian ortholog of the *C. elegans* protein UNC-76. It was identified independently in several interaction screens using distinct baits and was shown to play a role in neuronal differentiation and outgrowth, viral defense, centrosome organization, cytoskeletal signaling, and autophagy (reviewed in 1). It was originally identified as a binding partner and substrate for PKCζ and was found to induce the neuronal differentiation of PC-12 cells when co-expressed with active PKCζ (2). FEZ1 was also found to be an interacting partner with the schizophrenia-associated protein DISC1, which may suggest a role for FEZ1 in schizophrenia as well as other mental disorders (3,4). FEZ1 has also been shown to bind to several cytoskeletal proteins, including kinesins, tubulins, JIP1, NEK1, and CLASP2, which supports its role in neurite outgrowth, cargo transport along microtubules, and centrosomal organization (5-7). Additional research studies have shown that FEZ1 interacts with a viral agnoprotein and plays a role in viral defense, including during HIV-1 infection (8-10). Another screen identified FEZ1 as a binding partner for the ubiquitin ligase E4B and showed that FEZ1 can be regulated through polyubiquitination (11). Moreover, degradation of FEZ1 by the ubiquitination-proteasomal pathway through cdc20 provides a mechanism for FEZ1 in dendritic outgrowth (12). FEZ1 was also found to regulate autophagy through association with ULK1 and Beclin-1 complexes (13).

Directions for Use: CST recommends transfection with 100 nM SignalSilence® FEZ1 siRNA I 48 to 72 hours prior to cell lysis. For transfection procedure, follow protocol provided by the transfection reagent manufacturer. Please feel free to contact CST with any questions on use.

Each vial contains the equivalent of 100 transfections, which corresponds to a final siRNA concentration of 100 nM per transfection in a 24-well plate with a total volume of 300 µl per well.

Quality Control: Oligonucleotide synthesis is monitored base by base through trityl analysis to ensure appropriate coupling efficiency. The oligo is subsequently purified by affinity-solid phase extraction. The annealed RNA duplex is further analyzed by mass spectrometry to verify the exact composition of the duplex. Each lot is compared to the previous lot by mass spectrometry to ensure maximum lot-to-lot consistency.



Western blot analysis of extracts from Malme-3M cells, transfected with 100 nM SignalSilence® Control siRNA (Unconjugated) #6568 (-) or SignalSilence® FEZ1 siRNA I (+), using FEZ1 (D9R8Q) Rabbit mAb #42480 (upper) or β-Actin (D6A8) Rabbit mAb #8457 (lower). The FEZ1 (D9R8Q) Rabbit mAb confirms silencing of FEZ1 expression, while the β-Actin (D6A8) Rabbit mAb is used as a loading control.

Storage: FEZ1 siRNA is supplied in RNAse-free water. Aliquot and store at -20ºC.

For product specific protocols and a complete listing of recommended companion products please see the product web page at www.cellsignal.com

Background References:

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(2) Kuroda, S. et al. (1999) *J Cell Biol* 144, 403-11.

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(4) Kang, E. et al. (2011) *Neuron* 72, 559-71.

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(12) Watanabe, Y. et al. (2014) *Cell Rep* 7, 552-64.

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Applications: W—Western **IP**—Immunoprecipitation **IHC**—Immunohistochemistry **ChIP**—Chromatin Immunoprecipitation **IF**—Immunofluorescence **F**—Flow cytometry **E-P**—ELISA-Peptide **Species Cross-Reactivity: H**—human **M**—mouse **R**—rat **Hm**—hamster **Mk**—monkey **Mi**—mink **C**—chicken **Dm**—D. melanogaster **X**—Xenopus **Z**—zebrafish **B**—bovine **Dg**—dog **Pg**—pig **Sc**—S. cerevisiae **Ce**—C. elegans **Hr**—Horse **All**—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.