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PLEKHF1 siRNA (m): sc-152309

BACKGROUND

PLEKHF1 (pleckstrin homology domain containing, family F (with FYVE domain member 1), also known as APPD, PHAFIN1 or ZFYVE15, is a 279 amino acid nuclear and cytoplasmic protein that translocates to lysosome during apoptosis. Highly expressed in heart and skeletal muscle, and weakly expressed in brain, thymus, spleen, kidney, liver, small intestine, placenta and lung, PLEKHF1 is thought to induce apoptosis through the lysosomal-mitochondrial pathway. PLEKHF1 initiates permeabilization of the lysosomal membrane (LMP), which results in the release of cathepsin D and cathepsin L to the cytoplasm. PLEKHF1 is also suggested to alter mitochondrial membrane permeabilization (MMP), thereby triggering caspase-independent apoptosis and release of AIF (apoptosis-inducing factor) from the mitochondria. PLEKHF1 contains one FYVE-type zinc finger and one PH domain, which are both required for lysosomal translocation.

REFERENCES

1. Haslam, R.J., et al. 1993. Pleckstrin domain homology. *Nature* 363: 309-310.
2. Ingley, E. and Hemmings, B.A. 1994. Pleckstrin homology (PH) domains in signal transduction. *J. Cell. Biochem.* 56: 436-443.
3. Lorenzo, H.K., et al. 1999. Apoptosis inducing factor (AIF): a phylogenetically old, caspase-independent effector of cell death. *Cell Death Differ.* 6: 516-524.
4. Sankaran, V.G., et al. 2001. High-affinity binding of a FYVE domain to phosphatidylinositol 3-phosphate requires intact phospholipid but not FYVE domain oligomerization. *Biochemistry* 40: 8581-8587.
5. Cande, C., et al. 2002. Apoptosis-inducing factor (AIF): a novel caspase-independent death effector released from mitochondria. *Biochimie* 84: 215-222.
6. Park, J.S., et al. 2006. Molecular evidence for two-stage learning and partial laterality in eyeblink conditioning of mice. *Proc. Natl. Acad. Sci. USA* 103: 5549-5554.

CHROMOSOMAL LOCATION

Genetic locus: *Plekhf1* (mouse) mapping to 7 B2.

PRODUCT

PLEKHF1 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 PLEKHF1 shRNA Plasmid (m): sc-152309-SH and PLEKHF1 shRNA (m) Lentiviral Particles: sc-152309-V as alternate gene silencing products.

For independent verification of PLEKHF1 (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-152309A, sc-152309B and sc-152309C.

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

PLEKHF1 siRNA (m) is recommended for the inhibition of PLEKHF1 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 PLEKHF1 gene expression knockdown using RT-PCR Primer: PLEKHF1 (m)-PR: sc-152309-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.