SANTA CRUZ BIOTECHNOLOGY, INC.

girdin siRNA (m): sc-145407

BACKGROUND

Girdin, also known as CCDC88A (coiled-coil domain-containing protein 88A), APE, GRDN, GIV or HkRP1, is a 1,871 amino acid protein that, via interactions with phosphoinositides, localizes to the cell membrane and to the cytosol. Expressed ubiquitously, girdin functions to enhance the activity of PI 3-kinase-dependent phosphorylation of proteins, such as Akt1, thereby inducing the phosphorylation of downstream protein targets and, ultimately, regulating DNA replication and cellular proliferation. Additionally, girdin is crucial for cell migration and is responsible for both maintaining the structural integrity of the Actin cytoskeleton and for regulating the formation of Actin stress fibers. Girdin exists as a homodimer that can itself be phosphorylated—an event that delocalizes girdin from the cell membrane, thus allowing it to participate in cell migration events. Two isoforms of girdin exist due to alternative splicing events.

REFERENCES

1. Enomoto, A., et al. 2005. Akt/PKB regulates Actin organization and cell motility via girdin/APE. Dev. Cell 9: 389-402.
2. Anai, M., et al. 2005. A novel protein kinase B (PKB)/Akt-binding protein enhances PKB kinase activity and regulates DNA synthesis. J. Biol. Chem. 280: 18525-18535.
3. Le-Niculescu, H., et al. 2005. Identification and characterization of GIV, a novel $G_{\alpha\ i/s}$-interacting protein found on COPI, endoplasmic reticulum-Golgi transport vesicles. J. Biol. Chem. 280: 22012-22020.
4. Simpson, F., et al. 2005. A novel hook-related protein family and the characterization of hook-related protein 1. Traffic 6: 442-458.
5. Enomoto, A., et al. 2006. Girdin, a novel Actin-binding protein, and its family of proteins possess versatile functions in the Akt and Wnt signaling pathways. Ann. N.Y. Acad. Sci. 1086: 169-184.
6. Jiang, P., et al. 2008. An Actin-binding protein girdin regulates the motility of breast cancer cells. Cancer Res. 68: 1310-1318.
7. Kitamura, T., et al. 2008. Regulation of VEGF-mediated angiogenesis by the Akt/PKB substrate girdin. Nat. Cell Biol. 10: 329-337.

CHROMOSOMAL LOCATION

Genetic locus: Ccdc88a (mouse) mapping to 11 A3.3.

PRODUCT

girdin 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see girdin shRNA Plasmid (m): sc-145407-SH and girdin shRNA (m) Lentiviral Particles: sc-145407-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 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

girdin siRNA (m) is recommended for the inhibition of girdin 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 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.

GENE EXPRESSION MONITORING

girdin (H-6): sc-393757 is recommended as a control antibody for monitoring of girdin gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor girdin gene expression knockdown using RT-PCR Primer: girdin (m)-PR: sc-145407-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. Wu, D., et al. 2016. F-Actin rearrangement is regulated by mTORC2/Akt/girdin in mouse fertilized eggs. Cell Prolif. 49: 740-750.

RESEARCH USE

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