SANTA CRUZ BIOTECHNOLOGY, INC.

Pinch-1 siRNA (m): sc-61356

BACKGROUND

Pinch, also designated particularly interesting new Cys-His protein or NY-REN-48, is a focal adhesion protein that is a component of the ILK-PINCH complex. This complex is a major part of the growth factor and integrin signaling pathway. Pinch is involved in cell differentiation, proliferation and survival by acting as an effector of integrin and growth factor signaling. It is a cytoplasmic protein expressed in most tissues and consists of five LIM domains, a nuclear localization signal and a nuclear export signal. The Pinch-1/ILK complex is regulated by a Pinch-1 related protein Pinch-2, which also forms a complex with ILK.

REFERENCES

1. Zhang, Y., et al. 2002. Characterization of Pinch-2, a new focal adhesion Pinch-1-ILK interaction, cell spreading, and migration. J. Biol. Chem. 277: 38328-38338.
2. Fukuda, T., et al. 2003. Pinch-1 is an obligate partner of integrin-linked kinase (ILK) functioning in cell shape modulation, motility, and survival. J. Biol. Chem. 278: 51324-51333.
3. Wu, C. 2005. Pinch, N(i)ck and the ILK: network wiring at cell-matrix adhesions. Trends Cell Biol. 15: 460-466.
4. Vaynberg, J., et al. 2005. Structure of an ultraweak protein-protein complex and its crucial role in regulation of cell morphology and motility. Mol. Cell 17: 513-523.
5. Yang, Y., et al. 2005. Formation and phosphorylation of the Pinch-1-integrin linked kinase-α-parvin complex are important for regulation of renal glomerular podocyte adhesion, architecture, and survival. J. Am. Soc. Nephrol. 16: 1966-1976.
6. Xu, Z., et al. 2005. Molecular dissection of Pinch-1 reveals a mechanism of coupling and uncoupling of cell shape modulation and survival. J. Biol. Chem. 280: 27631-27637.
7. Martinsen, B.J., et al. 2006. Pinch-1 expression during early avian embryogenesis: implications for neural crest and heart development. Dev. Dyn. 235: 152-162.
8. Jung, K.Y., et al. 2007. TGF-β1 regulates the Pinch-1-integrin-linked kinase-α-parvin complex in glomerular cells. J. Am. Soc. Nephrol. 18: 66-73.

CHROMOSOMAL LOCATION

Genetic locus: Lims1 (mouse) mapping to 10 B4.

PRODUCT

Pinch-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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Pinch-1 shRNA Plasmid (m): sc-61356-SH and Pinch-1 shRNA (m) Lentiviral Particles: sc-61356-V as alternate gene silencing products.

For independent verification of Pinch-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-61356A, sc-61356B and sc-61356C.

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

Pinch-1 siRNA (m) is recommended for the inhibition of Pinch-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 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

Pinch-1 (A-1): sc-393133 is recommended as a control antibody for monitoring of Pinch-1 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 Pinch-1 gene expression knockdown using RT-PCR Primer: Pinch-1 (m)-PR: sc-61356-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. Zha, D., et al. 2013. Nephrin phosphorylation regulates podocyte adhesion through the Pinch-1-ILK-α-parvin complex. BMB Rep. 46: 230-235.

RESEARCH USE

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