SANTA CRUZ BIOTECHNOLOGY, INC.

α-parvin siRNA (h): sc-60107

BACKGROUND

The parvin family, including α-parvin, β-parvin and γ-parvin, link integrins and associated proteins with intracellular pathways, which regulate Actin cytoskeletal dynamics and cell survival. All three family members localize to focal adhesions and function in cell adhesion, spreading, motility and survival through interactions with partners, such as integrin-linked kinase (ILK), paxillin, α-actinin and testicular kinase 1. α-parvin is widely expressed, with highest levels detected in the skeletal muscle, heart, liver and kidney. A complex made up of α-parvin, ILK and the LIM protein Pinch-1 is critical for cell survival in a variety of cells, including certain cancer cells, kidney podocytes and cardiac myocytes. β-parvin links initial integrin signals to rapid Actin reorganization, thereby playing a critical role in fibroblast migration. The ILK-γ-parvin complex is essential for the establishment of cell polarity required for leukocyte migration.

REFERENCES

1. Tu, Y., et al. 2001. A new focal adhesion protein that interacts with integrin-linked kinase and regulates cell adhesion and spreading. J. Cell Biol. 153: 585-598.
2. Olski, T.M., et al. 2001. Parvin, a 42 kDa focal adhesion protein, related to the α-actinin superfamily. J. Cell Sci. 114: 525-538.
3. Korenbaum, E., et al. 2001. Genomic organization and expression profile of the parvin family of focal adhesion proteins in mice and humans. Gene 279: 69-79.
4. Aboulaich, N., et al. 2004. Vectorial proteomics reveal targeting, phosphorylation and specific fragmentation of polymerase I and transcript release factor (PTRF) at the surface of caveolae in human adipocytes. Biochem. J. 383: 237-248.
5. Yamaji, S., et al. 2004. Affixin interacts with α-actinin and mediates integrin signaling for reorganization of F-Actin induced by initial cell-substrate interaction. J. Cell Biol. 165: 539-551.
6. Zhang, Y., et al. 2004. Distinct roles of two structurally closely related focal adhesion proteins, α-parvins and β-parvins, in regulation of cell morphology and survival. J. Biol. Chem. 279: 41695-41705.

CHROMOSOMAL LOCATION

Genetic locus: PARVA (human) mapping to 11p15.3.

PRODUCT

α-parvin siRNA (h) 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 α-parvin shRNA Plasmid (h): sc-60107-SH and α-parvin shRNA (h) Lentiviral Particles: sc-60107-V as alternate gene silencing products.

For independent verification of α-parvin (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-60107A, sc-60107B and sc-60107C.

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

α-parvin siRNA (h) is recommended for the inhibition of α-parvin expression in human 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor α-parvin gene expression knockdown using RT-PCR Primer: α-parvin (h)-PR: sc-60107-PR (20 µl, 398 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Huang, Y. and Gunst, S.J. 2020. Phenotype transitions induced by mechanical stimuli in airway smooth muscle are regulated by differential interactions of parvin isoforms with paxillin and Akt. Am. J. Physiol. Lung Cell. Mol. Physiol. 318: L1036-L1055.

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.