SANTA CRUZ BIOTECHNOLOGY, INC.

PLEK2 siRNA (h): sc-92127

BACKGROUND

PLEK2 (pleckstrin 2) is a 353 amino acid peripheral membrane protein that contains both an N- and a C-terminal PH domain, as well as an intervening DEP domain. Although highly homologous to Pleckstrin, which contains three phosphorylation sites and is an efficient substrate of PKC, PLEK2 contains a single phosphorylation site and is an inefficient PKC substrate. Localizing to cytoskeleton, PLEK2 is ubiquitously expressed, with highest expression in thymus, prostate, testis, ovary, small bowel and large bowel. When bound to the cell membrane, PLEK2 contributes to lamellipodia formation, with overexpression potentially leading to large lamellipodia and peripheral ruffle formation. PLEK2 targets ligands in cell membranes and induces actin rearrangement. PLEK2 likely redistributes actin within cells and may play a role in orchestrating cytoskeletal arrangement. The gene that encodes PLEK2 maps to human chromosome 14q23.3.

REFERENCES

1. Inazu, T., Yamada, K. and Miyamoto, K. 1999. Cloning and expression of pleckstrin 2, a novel member of the pleckstrin family. Biochem. Biophys. Res. Commun. 265: 87-93.
2. Hu, M.H., Bauman, E.M., Roll, R.L., Yeilding, N. and Abrams, C.S. 1999. Pleckstrin 2, a widely expressed paralog of pleckstrin involved in actin rearrangement. J. Biol. Chem. 274: 21515-21518.
3. Lemmon, M.A., Ferguson, K.M. and Abrams, C.S. 2002. Pleckstrin homology domains and the cytoskeleton. FEBS Lett. 513: 71-76.
4. Inazu, T., Kuroiwa, A., Matsuda, Y. and Miyamoto, K. 2005. Cloning, expression and chromosomal assignment of human pleckstrin 2. Mol. Biol. Rep. 32: 35-40.
5. Hamaguchi, N., Ihara, S., Ohdaira, T., Nagano, H., Iwamatsu, A., Tachikawa, H. and Fukui, Y. 2007. Pleckstrin-2 selectively interacts with phosphatidylinositol 3-kinase lipid products and regulates actin organization and cell spreading. Biochem. Biophys. Res. Commun. 361: 270-275.
6. Bach, T.L., Kerr, W.T., Wang, Y., Bauman, E.M., Kine, P., Whiteman, E.L., Morgan, R.S., Williamson, E.K., Ostap, E.M., Burkhardt, J.K., Koretzky, G.A., Birnbaum, M.J. and Abrams, C.S. 2007. PI3K regulates pleckstrin-2 in T-cell cytoskeletal reorganization. Blood 109: 1147-1155.

CHROMOSOMAL LOCATION

Genetic locus: PLEK2 (human) mapping to 14q23.3.

PRODUCT

PLEK2 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 PLEK2 shRNA Plasmid (h): sc-92127-SH and PLEK2 shRNA (h) Lentiviral Particles: sc-92127-V as alternate gene silencing products.

For independent verification of PLEK2 (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-92127A, sc-92127B and sc-92127C.

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

PLEK2 siRNA (h) is recommended for the inhibition of PLEK2 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.

GENE EXPRESSION MONITORING

PLEK2 (E-11): sc-393831 is recommended as a control antibody for monitoring of PLEK2 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 PLEK2 gene expression knockdown using RT-PCR Primer: PLEK2 (h)-PR: sc-92127-PR (20 µl). 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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.