SANTA CRUZ BIOTECHNOLOGY, INC.

Cortactin siRNA (h): sc-35093

BACKGROUND

Cortactin (also designated Ems-1) is a filamentous Actin (F-Actin) binding protein that has been shown to be a substrate for Src p60. Cortactin contains tandem 37 amino acid repeats at the amino-terminus and an SH3 domain at the carboxy-terminus. The tandem repeats appear to be necessary for F-Actin binding. Tyrosine phosphorylation of Cortactin by Src p60 results in diminished F-Actin binding to Cortactin and reduced F-Actin cross-linking activity. Cortactin has also been shown to be phosphorylated in response to FGF-1. Cortactin exhibits abundant expression in megakaryocytes and platelets, and it may play a role in the maturation of megakaryocytes.

CHROMOSOMAL LOCATION

Genetic locus: CTTN (human) mapping to 11q13.3.

PRODUCT

Cortactin 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 Cortactin shRNA Plasmid (h): sc-35093-SH and Cortactin shRNA (h) Lentiviral Particles: sc-35093-V as alternate gene silencing products.

For independent verification of Cortactin (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-35093A, sc-35093B and sc-35093C.

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

Cortactin siRNA (h) is recommended for the inhibition of Cortactin 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

Cortactin (H-5): sc-55579 is recommended as a control antibody for monitoring of Cortactin 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Cortactin gene expression knockdown using RT-PCR Primer: Cortactin (h)-PR: sc-35093-PR (20 µl, 466 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Luo, C., et al. 2006. CXCL12 Induces tyrosine phosphorylation of Cortactin, which plays a role in CXC chemokine receptor 4-mediated extracellular signal-regulated kinase activation and chemotaxis. J. Biol. Chem. 281: 30081-30093.
2. Ma, T., et al. 2010. Regulation of sealing ring formation by L-plastin and Cortactin in osteoclasts. J. Biol. Chem. 285: 29911-29924.
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4. Belleudi, F., et al. 2011. Polarized endocytosis of the keratinocyte growth factor receptor in migrating cells: role of Src-signaling and Cortactin. PLoS ONE 6: e29159.
5. Slanina, H., et al. 2012. Effective plasmid DNA and small interfering RNA delivery to diseased human brain microvascular endothelial cells. J. Mol. Microbiol. Biotechnol. 22: 245-257.
6. Slanina, H., et al. 2012. Cell invasion by *Neisseria meningitidis* requires a functional interplay between the focal adhesion kinase, Src and Cortactin. PLoS ONE 7: e39613.
7. Cheng, Y., et al. 2018. Vascular endothelial growth factor C promotes cervical cancer cell invasiveness via regulation of microRNA-326/Cortactin expression. Gynecol. Endocrinol. 34: 853-858.
8. Tegtmeyer, N., et al. 2021. *Helicobacter pylori* CagA induces cortactin Y-470 phosphorylation-dependent gastric epithelial cell scattering via Abl, Vav2 and Rac1 activation. Cancers 13: 4241.
9. Castro-Guijarro, A.C., et al. 2023. Potential biomarkers associated with prognosis and trastuzumab response in HER2+ breast cancer. Cancers 15: 4374.
10. Yun, S.I., et al. 2023. Binding of USP4 to Cortactin enhances cell migration in HCT116 human colon cancer cells. FASEB J. 37: e22900.

RESEARCH USE

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