SANTA CRUZ BIOTECHNOLOGY, INC.

Cortactin (E-4): sc-55588

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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; Cttn (mouse) mapping to 7 F5.

SOURCE

Cortactin (E-4) is a mouse monoclonal antibody raised against amino acids 309-499 of Cortactin of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

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.

APPLICATIONS

Cortactin (E-4) is recommended for detection of Cortactin of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Cortactin siRNA (h): sc-35093, Cortactin siRNA (m): sc-35094, Cortactin shRNA Plasmid (h): sc-35093-SH, Cortactin shRNA Plasmid (m): sc-35094-SH, Cortactin shRNA (h) Lentiviral Particles: sc-35093-V and Cortactin shRNA (m) Lentiviral Particles: sc-35094-V.

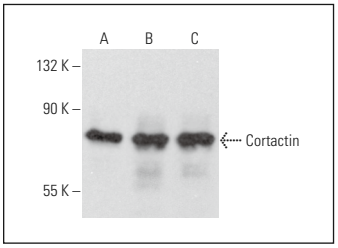
Molecular Weight of Cortactin: 80 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206, HeLa whole cell lysate: sc-2200 or A-431 whole cell lysate: sc-2201.

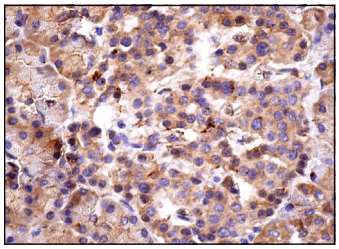
RECOMMENDED SUPPORT REAGENTS

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



Cortactin (E-4): sc-55588. Western blot analysis of Cortactin expression in HeLa (**A**), A-431 (**B**) and MCF7 (**C**) whole cell lysates.



Cortactin (E-4): sc-55588. Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic staining of Islets of Langerhans and glandular cells.

SELECT PRODUCT CITATIONS

1. Kopecki, Z., et al. 2015. Cytoskeletal protein Flightless I inhibits apoptosis, enhances tumor cell invasion and promotes cutaneous squamous cell carcinoma progression. Oncotarget 6: 36426-36440.
2. Yang, Y., et al. 2015. Endophilin A1 regulates dendritic spine morphogenesis and stability through interaction with p140Cap. Cell Res. 25: 496-516.
3. Yang, Y., et al. 2018. Endophilin A1 promotes Actin polymerization in dendritic spines required for synaptic potentiation. Front. Mol. Neurosci. 11: 177.
4. Yang, Y., et al. 2021. Endophilin A1 drives acute structural plasticity of dendritic spines in response to Ca^{2+}/calmodulin. J. Cell Biol. 220: e202007172.
5. Jones, D., et al. 2023. Repurposing FDA-approved drugs as inhibitors of therapy-induced invadopodia activity in glioblastoma cells. Mol. Cell. Biochem. 478: 1251-1267.
6. Whitehead, C.A., et al. 2023. Invadopodia associated Thrombospondin-1 contributes to a post-therapy pro-invasive response in glioblastoma cells. Exp. Cell Res. 431: 113743.

CONJUGATES

See **Cortactin (H-5): sc-55579** for Cortactin antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.