

Cortactin

Cat.No. 313 111; Monoclonal mouse antibody, 100 µg purified IgG (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µg purified IgG, lyophilized. Albumin and azide were added for stabilization. For reconstitution add 100 µl H ₂ O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C to -80°C until use. Antibodies should be stored at +4°C when still lyophilized. Do not freeze! For detailed information, see back of the data sheet.
Applications	WB: not recommended IP: not tested yet ICC: 1 : 500 (see remarks) IHC: not tested yet IHC-P: not tested yet
Clone	289H10
Subtype	IgG1 (κ light chain)
Immunogen	Recombinant protein corresponding to AA 1 to 513 from human Cortactin (UniProt Id: Q14247)
Epitop	AA 147 to 509 from human Cortactin (UniProt Id: Q14247)
Reactivity	Reacts with: mouse (Q60598), rat (Q66HL2). Other species not tested yet. Predicted to cross-react with human (Q14247) due to high sequence homology.
Remarks	ICC: The following fixatives are possible: methanol, 4% formaldehyde/PFA. Methanol fixation produces less background.

TO BE USED IN VITRO / FOR RESEARCH ONLY
NOT TOXIC, NOT HAZARDOUS, NOT INFECTIOUS, NOT CONTAGIOUS

Background

Cortactin is a cortical actin binding protein and the major substrate for the tyrosine kinase v-Src. The interaction of its N-terminal acidic domain (NTA) with the actin nucleation factor Arp 2/3 links cytoskeletal organization with signal transduction. The carboxy terminus comprises a proline rich region and an SH3 domain that can interact with several scaffolding proteins like CortBP1 and Shank 3. In neurons cortactin is concentrated in dendritic spines and involved in spine targeting.

Selected References for 313 111

Cortactin promotes migration and platelet-derived growth factor-induced actin reorganization by signaling to Rho-GTPases. Lai FP, Szczodrak M, Oelkers JM, Ladwein M, Acconcia F, Benesch S, Auinger S, Faix J, Small JV, Polo S, Stradal TE, et al. Molecular biology of the cell (2009) 2014: 3209-23. . **ICC**

Selected General References

Activity-dependent redistribution and essential role of cortactin in dendritic spine morphogenesis. Hering H et al. J. Neurosci. (2003) PubMed:14684878

Src phosphorylation of cortactin enhances actin assembly. Tehrani S et al. Proc. Natl. Acad. Sci. U.S.A. (2007) PubMed:17606906

Src, cortactin and Arp2/3 complex are required for E-cadherin-mediated internalization of Listeria into cells. Sousa S et al. Cell. Microbiol. (2007) PubMed:17627624

Cortactin: the gray eminence of the cytoskeleton. Cosen-Binker LI et al. Physiology (Bethesda) (2006) PubMed:16990456

Effect of Fgd1 on cortactin in Arp2/3 complex-mediated actin assembly. Kim K et al. Biochemistry (2004) PubMed:14992579

Cortactin is necessary for E-cadherin-mediated contact formation and actin reorganization. Helwani FM et al. J. Cell Biol. (2004) PubMed:15024035

The cortactin-binding postsynaptic density protein proSAP1 in non-neuronal cells. Redecker P et al. J. Histochem. Cytochem. (2001) PubMed:11304802

Abp1p and cortactin, new "hand-holds" for actin. Olazabal IM et al. J. Cell Biol. (2001) PubMed:11514584

Cortactin-Src kinase signaling pathway is involved in N-syndecan-dependent neurite outgrowth. Kinnunen T et al. J. Biol. Chem. (1998) PubMed:9553134

Association of cortactin with developing neuromuscular specializations. Peng HB et al. J. Neurocytol. (1997) PubMed:9368878

p80/85 cortactin associates with the Src SH2 domain and colocalizes with v-Src in transformed cells. Okamura H et al. J. Biol. Chem. (1995) PubMed:7592885

Intercellular adhesion molecule 1 activation induces tyrosine phosphorylation of the cytoskeleton-associated protein cortactin in brain microvessel endothelial cells.

Durieu-Trautmann O et al. J. Biol. Chem. (1994) PubMed:7909803

Cortactin, an 80/85-kilodalton pp60src substrate, is a filamentous actin-binding protein enriched in the cell cortex. Wu H et al. J. Cell Biol. (1993) PubMed:7680654

Access the online factsheet including applicable protocols at <https://sysy.com/product/313111> or scan the QR-code.



FAQ - How should I store my antibody?

Shipping Conditions

- All our antibodies and control proteins / peptides are shipped lyophilized (vacuum freeze-dried) and are stable in this form without loss of quality at ambient temperatures for several weeks.

Storage of Sealed Vials after Delivery

- **Unlabeled** and **biotin-labeled antibodies** and **control proteins** should be stored at 4°C before reconstitution. **They must not be stored in the freezer when still lyophilized!** Temperatures below zero may cause loss of performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long term storage (several months) may lead to aggregation.
- **Control peptides** should be kept at -20°C before reconstitution.

Long Term Storage after Reconstitution (General Considerations)

- The storage freezer must not be of the frost-free variety ("no-frost freezer"). This cycle between freezing and thawing (to reduce frost-build-up), which is exactly what should be avoided. For the same reason, antibody vials should be placed in an area of the freezer that has minimal temperature fluctuations, for instance towards the back rather than on a door shelf.
- Aliquot the antibody and store frozen (-20°C to -80°C). Avoid very small aliquots (below 20 µl) and use the smallest storage vial or tube possible. The smaller the aliquot, the more the stock concentration is affected by evaporation and adsorption of the antibody to the surface of the storage vial or tube. Adsorption of the antibody to the surface leads to a substantial loss of activity.
- The addition of glycerol to a final concentration of 50% lowers the freezing point of your stock and keeps your antibody at -20°C in liquid state. This efficiently avoids freeze and thaw cycles.

Product Specific Hints for Storage

Control proteins / peptides

- Store at -20°C to -80°C.

Monoclonal Antibodies

- **Ascites** and **hybridoma supernatant** should be stored at -20°C up to -80°C. **Prolonged storage at 4°C is not recommended!** Unlike serum, ascites may contain proteases that will degrade the antibodies.
- **Purified IgG** should be stored at -20°C up to -80°C. Adding a carrier protein like BSA will increase long term stability. Many of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

Polyclonal Antibodies

- **Crude antisera:** With anti-microbials added, they may be stored at 4°C. However, frozen storage (-20°C up to -80°C) is preferable.
- **Affinity purified antibodies:** Less robust than antisera. Storage at -20°C up to -80°C is recommended. Adding a carrier protein like BSA will increase long term stability. Most of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

Fluorescence-labeled Antibodies

- Store as a liquid with 1 : 1 (v/v) glycerol at -20°C. Protect these antibodies from light exposure.

Avoid repeated freeze-thaw cycles for all antibodies!

FAQ - How should I reconstitute my antibody?

Reconstitution

- All our purified antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the amount of deionized water given in the respective datasheet. If higher volumes are preferred, add water as mentioned above and then the desired amount of PBS and a stabilizing carrier protein (e.g. BSA) to a final concentration of 2%. Some of our antibodies already contain albumin. Take this into account when adding more carrier protein. For complete reconstitution, carefully remove the lid. After adding water, briefly vortex the solution. You can spin down the liquid by placing the vial into a 50 ml centrifugation tube filled with paper.
- If desired, add small amounts of azide or thimerosal to prevent microbial growth. This is especially recommended if you want to keep an aliquot at 4°C.
- After reconstitution of fluorescence-labeled antibodies, add 1 : 1 (v/v) glycerol to a final concentration of 50%. This lowers the freezing point of your stock and keeps your antibody in liquid state at -20°C.
- Glycerol may also be added to unlabeled primary antibodies. It is a suitable way to avoid freeze-thaw cycles.
- Please refer to our **tips and hints for subsequent storage** of reconstituted antibodies and control peptides and proteins.