10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

# CDC42 Antibody

Catalog # ASC10874

## Product Information

| | |
|---|---|
| **Application** | WB, E |
| **Primary Accession** | P60953 |
| **Other Accession** | NP_001782, 4757952 |
| **Reactivity** | Human, Mouse, Rat |
| **Host** | Chicken |
| **Clonality** | Polyclonal |
| **Isotype** | IgY |
| **Calculated MW** | 21259 |
| **Concentration (mg/ml)** | 1 mg/mL |
| **Conjugate** | Unconjugated |
| **Application Notes** | CDC42 antibody can be used for detection of CDC42 by Western blot at 0.5 - 1 g/mL. |

## Additional Information

| | |
|---|---|
| **Gene ID** | 998 |
| **Other Names** | Cell division control protein 42 homolog, G25K GTP-binding protein, CDC42 |
| **Target/Specificity** | CDC42; |
| **Reconstitution & Storage** | CDC42 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures. |
| **Precautions** | CDC42 Antibody is for research use only and not for use in diagnostic or therapeutic procedures. |

## Protein Information

| | |
|---|---|
| **Name** | CDC42 ( HGNC:1736) |
| **Function** | Plasma membrane-associated small GTPase which cycles between an active GTP-bound and an inactive GDP-bound state. In active state binds to a variety of effector proteins to regulate cellular responses. Involved in epithelial cell polarization processes. Regulates the bipolar attachment of spindle microtubules to kinetochores before chromosome congression in metaphase (PubMed:15642749). Regulates cell migration (PubMed:17038317, PubMed:22843693). In neurons, plays a role in the extension and maintenance of the formation of filopodia, thin and actin-rich surface projections (PubMed:14978216). Required for DOCK10-mediated spine formation in Purkinje cells and hippocampal neurons. In podocytes, facilitates filopodia and podosomes formation upon DOCK11-activation |

| | |
|---|---|
| | (PubMed:33523862). Upon activation by CaMKII, modulates dendritic spine structural plasticity by relaying CaMKII transient activation to synapse-specific, long-term signaling (By similarity). Also plays a role in phagocytosis through organization of the F-actin cytoskeleton associated with forming phagocytic cups (PubMed:26465210). Upon activation by PLEKHG4B, involved in actin cytoskeletal remodeling during epithelial cell-cell junction formation (PubMed:33310911). Negatively regulates polymerization of SEPTIN12, as a result may be involved in spermatogenesis (PubMed:30189608). |
| **Cellular Location** | Cell membrane; Lipid-anchor; Cytoplasmic side. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome. Cytoplasm, cytoskeleton, spindle. Midbody Cell projection, dendrite {ECO:0000250\|UniProtKB:P60766}. Cytoplasmic vesicle, secretory vesicle, acrosome {ECO:0000250\|UniProtKB:P60766} Note=Localizes to spindle during prometaphase cells. Moves to the central spindle as cells progressed through anaphase to telophase (PubMed:15642749). Localizes at the end of cytokinesis in the intercellular bridge formed between two daughter cells (PubMed:15642749). Its localization is regulated by the activities of guanine nucleotide exchange factor ECT2 and GTPase activating protein RACGAP1 (PubMed:15642749). Colocalizes with NEK6 in the centrosome (PubMed:20873783). In its active GTP-bound form localizes to the leading edge membrane of migrating dendritic cells (By similarity) During sperm head formation in elongating spermatids, expressed at the acrosome, perinuclear mantle of the manchette structure and the sperm neck (By similarity). Expressed at the neck and mitochondrial materials in elongated spermatids (By similarity). Expressed at the midpiece in mature spermatozoa (By similarity). {ECO:0000250\|UniProtKB:P60766, ECO:0000269\|PubMed:15642749, ECO:0000269\|PubMed:20873783} |

## Background

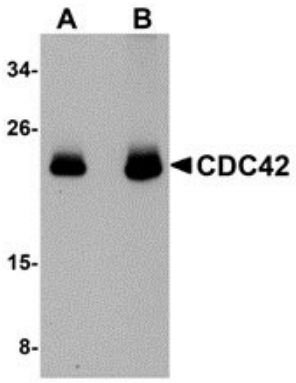
CDC42 Antibody: CDC42 is a small GTPase of the Rho-subfamily, which regulates signaling pathways that control diverse cellular functions including cell morphology, migration, endocytosis and cell cycle progression. This protein is highly similar to S. cerevisiae CDC42, and is able to complement the yeast cdc42-1 mutant. The product of oncogene Dbl was reported to specifically catalyze the dissociation of GDP from this protein. CDC42 is thought to regulate actin polymerization through its direct binding to Neural Wiskott-Aldrich syndrome protein (N-WASP), which subsequently activates Arp2/3 complex. At least two isoforms of CDC42 are known to exist.

## References

Erickson JW and Cerione RA. Multiple roles for Cdc42 in cell regulation. Curr. Opin. Cell Biol.2001; 13:153-7.
Chen W, Lim HH, and Lim L. The CDC42 homologue from Caenorhabditis elegans. Complementation of yeast mutation. J. Biol. Chem.1993; 268:13280-5.
Hart MJ, Eva A, Evans T, et al. Catalysis of guanine nucleotide exchange on the CDC42Hs protein by the dbl oncogene product. Nature1991; 354:311-4.
Rohatgi R, Ma L, Miki H, et al. The interaction between N-WASP and the Arp2/3 complex links Cdc42-dependent signals to actin assembly. Cell1999; 97:221-31.

## Images

Western blot analysis of CDC42 in human brain tissue lysate with CDC42 antibody at (A) 0.5 and (B) 1 µg/mL.




Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.