

### cdc42/Rac Antibody

Rabbit Polyclonal Antibody Catalog # ABV10059

## **Specification**

# cdc42/Rac Antibody - Product Information

Application WB
Primary Accession P60953
Other Accession NP\_426359.1
Reactivity Human, Mouse, Rat, Bovine

Host Rabbit
Clonality Polyclonal
Isotype Rabbit IgG
Calculated MW 21259

### cdc42/Rac Antibody - Additional Information

Gene ID 998

Application & Usage

Western blotting (0.5-4  $\mu$ g/ml) and in Immunohistochemistry (10-20  $\mu$ g/ml). However, the optimal conditions should be determined individually. The antibody detects cdc42 of human, mouse, rat, and bovine origins.

Other Names CDC42Hs , G25K

Target/Specificity cdc42/Rac

Antibody Form Liquid

**Appearance** Colorless liquid

# **Formulation**

 $100 \mu g$  (0.2 mg/ml) affinity purified rabbit anti-cdc42 polyclonal antibody in phosphate buffered saline (PBS), pH 7.2, containing 30% glycerol, 0.5% BSA, 0.01% thimerosal.

### Handling

The antibody solution should be gently mixed before use.

Reconstitution & Storage -20 °C



# **Background Descriptions**

#### **Precautions**

cdc42/Rac Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

### cdc42/Rac Antibody - 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: <a href="http://www.uniprot.org/citations/15642749" target=" blank">15642749</a>). Regulates cell migration (PubMed: <a href="http://www.uniprot.org/citations/17038317" target=" blank">17038317</a>). In neurons, plays a role in the extension and maintenance of the formation of filopodia, thin and actin-rich surface projections (PubMed: <a href="http://www.uniprot.org/citations/14978216" target="\_blank">14978216</a>). Required for DOCK10-mediated spine formation in Purkinje cells and hippocampal neurons. In podocytes, facilitates filopodia and podosomes formation upon DOCK11- activation (PubMed: <a href="http://www.uniprot.org/citations/33523862" target=" blank">33523862</a>). 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:<a href="http://www.uniprot.org/citations/26465210" target=" blank">26465210</a>).

# **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} 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) {ECO:0000250|UniProtKB:P60766, ECO:0000269|PubMed:15642749, ECO:0000269|PubMed:20873783}

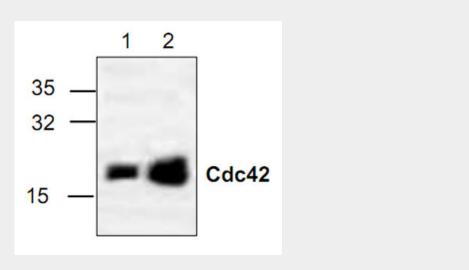
## cdc42/Rac Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture



# cdc42/Rac Antibody - Images



Western blot analysis of cdc42 in 3T3 (Lane 1) and Jurkat (Lane 2) cell lysate.

## cdc42/Rac Antibody - Background

cdc42/Rac belongs to the superfamily of small GTPases that are structurally linked to the proto-oncogene product p21ras and are important for the control of cell growth and differentiation as well as for intracellular organization. Cdc42/Rac is an important upstream regulator of the protein kinase cascade that controls the SAPK/JNK and p38 activity. Recent data also s  $\mu$ ggest that constitutive active forms of cdc42 can induce apoptosis thro  $\mu$ gh a mechanism requiring signaling thro  $\mu$ gh SAPK/JNK.