

**ROCK1 Antibody (Clone 12M03)**  
**Mouse Monoclonal Antibody**  
**Catalog # ABV10401****Specification**

---

**ROCK1 Antibody (Clone 12M03) - Product Information**

Application	WB
Primary Accession	<a href="#">Q13464</a>
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Isotype	Mouse IgG
Calculated MW	158175

**ROCK1 Antibody (Clone 12M03) - Additional Information****Gene ID** 6093**Application & Usage**

**Western blotting (1-4 µg/ml).** However, the optimal conditions should be determined individually. Jurkat cell lysate treated with camptothecin (2 µM for 6-8 hours) can be used as a positive control. The antibody has been selected for its ability to recognize the cleaved ROCK-1 in Western blotting. It does not recognize the full length protein.

**Other Names**

ROCK1 , P160ROCK , MGC131603 , MGC43611 , p160ROCK , EC 2.7.11.1

**Target/Specificity**

ROCK-1 (cleaved)

**Antibody Form**

Liquid

**Appearance**

Colorless liquid

**Formulation**

100 µg (0.5 mg/ml) Protein G purified mouse anti-human ROCK1 monoclonal antibody in phosphate buffered saline (PBS), pH 7.2, containing 50% glycerol, 1% BSA, 0.02% thimerosal.

**Handling**

The antibody solution should be gently mixed before use.

**Reconstitution & Storage**

-20 °C

## Background Descriptions

### Precautions

ROCK1 Antibody (Clone 12M03) is for research use only and not for use in diagnostic or therapeutic procedures.

## ROCK1 Antibody (Clone 12M03) - Protein Information

### Name ROCK1

### Function

Protein kinase which is a key regulator of the actin cytoskeleton and cell polarity (PubMed:<a href="http://www.uniprot.org/citations/10436159" target="\_blank">10436159</a>, PubMed:<a href="http://www.uniprot.org/citations/10652353" target="\_blank">10652353</a>, PubMed:<a href="http://www.uniprot.org/citations/11018042" target="\_blank">11018042</a>, PubMed:<a href="http://www.uniprot.org/citations/11283607" target="\_blank">11283607</a>, PubMed:<a href="http://www.uniprot.org/citations/17158456" target="\_blank">17158456</a>, PubMed:<a href="http://www.uniprot.org/citations/18573880" target="\_blank">18573880</a>, PubMed:<a href="http://www.uniprot.org/citations/19131646" target="\_blank">19131646</a>, PubMed:<a href="http://www.uniprot.org/citations/8617235" target="\_blank">8617235</a>, PubMed:<a href="http://www.uniprot.org/citations/9722579" target="\_blank">9722579</a>). Involved in regulation of smooth muscle contraction, actin cytoskeleton organization, stress fiber and focal adhesion formation, neurite retraction, cell adhesion and motility via phosphorylation of DAPK3, GFAP, LIMK1, LIMK2, MYL9/MLC2, TPPP, PFN1 and PPP1R12A (PubMed:<a href="http://www.uniprot.org/citations/10436159" target="\_blank">10436159</a>, PubMed:<a href="http://www.uniprot.org/citations/10652353" target="\_blank">10652353</a>, PubMed:<a href="http://www.uniprot.org/citations/11018042" target="\_blank">11018042</a>, PubMed:<a href="http://www.uniprot.org/citations/11283607" target="\_blank">11283607</a>, PubMed:<a href="http://www.uniprot.org/citations/17158456" target="\_blank">17158456</a>, PubMed:<a href="http://www.uniprot.org/citations/18573880" target="\_blank">18573880</a>, PubMed:<a href="http://www.uniprot.org/citations/19131646" target="\_blank">19131646</a>, PubMed:<a href="http://www.uniprot.org/citations/8617235" target="\_blank">8617235</a>, PubMed:<a href="http://www.uniprot.org/citations/9722579" target="\_blank">9722579</a>, PubMed:<a href="http://www.uniprot.org/citations/23093407" target="\_blank">23093407</a>, PubMed:<a href="http://www.uniprot.org/citations/23355470" target="\_blank">23355470</a>). Phosphorylates FHOD1 and acts synergistically with it to promote SRC-dependent non-apoptotic plasma membrane blebbing (PubMed:<a href="http://www.uniprot.org/citations/18694941" target="\_blank">18694941</a>). Phosphorylates JIP3 and regulates the recruitment of JNK to JIP3 upon UVB-induced stress (PubMed:<a href="http://www.uniprot.org/citations/19036714" target="\_blank">19036714</a>). Acts as a suppressor of inflammatory cell migration by regulating PTEN phosphorylation and stability (By similarity). Acts as a negative regulator of VEGF-induced angiogenic endothelial cell activation (PubMed:<a href="http://www.uniprot.org/citations/19181962" target="\_blank">19181962</a>). Required for centrosome positioning and centrosome-dependent exit from mitosis (By similarity). Plays a role in terminal erythroid differentiation (PubMed:<a href="http://www.uniprot.org/citations/21072057" target="\_blank">21072057</a>). Inhibits podocyte motility via regulation of actin cytoskeletal dynamics and phosphorylation of CFL1 (By similarity). Promotes keratinocyte terminal differentiation (PubMed:<a href="http://www.uniprot.org/citations/19997641" target="\_blank">19997641</a>). Involved in osteoblast compaction through the fibronectin fibrillogenesis cell-mediated matrix assembly process, essential for osteoblast mineralization (By similarity). May regulate closure of the eyelids and ventral body wall by inducing the assembly of actomyosin bundles (By similarity).

### Cellular Location

Cytoplasm. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome, centriole {ECO:0000250|UniProtKB:P70335}. Golgi apparatus membrane; Peripheral membrane protein. Cell projection, bleb. Cytoplasm, cytoskeleton {ECO:0000250|UniProtKB:P70335}. Cell membrane {ECO:0000250|UniProtKB:P70335}. Cell projection, lamellipodium {ECO:0000250|UniProtKB:P70335}. Cell projection, ruffle {ECO:0000250|UniProtKB:P70335}. Note=A small proportion is associated with Golgi membranes (PubMed:12773565). Associated with the mother centriole and an intercentriolar linker (By similarity). Colocalizes with ITGB1BP1 and ITGB1 at the cell membrane predominantly in lamellipodia and membrane ruffles, but also in retraction fibers (By similarity). Localizes at the cell membrane in an ITGB1BP1-dependent manner (By similarity). {ECO:0000250|UniProtKB:P70335, ECO:0000269|PubMed:12773565}

**Tissue Location**

Detected in blood platelets.

**ROCK1 Antibody (Clone 12M03) - Protocols**

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

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

**ROCK1 Antibody (Clone 12M03) - Images****ROCK1 Antibody (Clone 12M03) - Background**

ROCK-1 (Rho-associated coiled coil-containing protein kinase 1) has been found to be a new caspase-3 substrate. ROCK-1 consists of an amino-terminal kinase domain and an inhibitory cysteine/histidine-rich C-terminal domain. During apoptosis, ROCK-1 is cleaved by caspase-3 at the conserved DETD1113/G sequence and its C-terminal inhibitory domain is removed, resulting in deregulated and constitutive kinase activity. The caspase-3 mediated cleavage and activation of ROCK-1 induces phosphorylation of MLC and membrane blebbing, the early events in the execution phase of apoptosis.