Technical Data Sheet

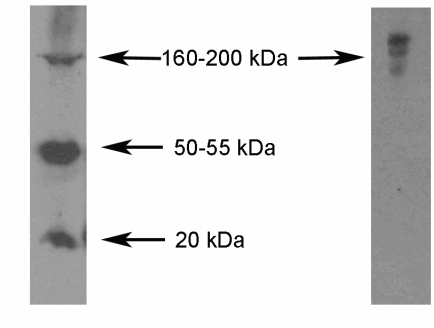
Purified Mouse Anti-ROCK-I

Product Information

Material Number:	**611136**
Alternate Name:	ROKβ
Size:	50 µg
Concentration:	250 µg/ml
Clone:	46/ROCK-I
Immunogen:	Mouse ROCK-I aa. 906-1012
Isotype:	Mouse IgG1
Reactivity:	QC Testing: Mouse Tested in Development: Human, Rat
Target MW:	160 kDa
Storage Buffer:	Aqueous buffered solution containing BSA, glycerol, and ≤0.09% sodium azide.

Description

ROCK-I is a Rho-associated serine/threonine kinase isozyme that mediates RhoA-induced assembly of focal adhesions and actin stress fibers. It contains an N-terminal kinase domain, a central 600 amino acid long coiled-coil region, a C-terminal pleckstrin homology region (PH) and a Cys-rich zinc finger motif. The ROCK-I kinase domain is approximately 90% identical to that of ROCK-II. ROCK-I binds GTP-bound Rho through a Rho-binding domain (RBD). As a result, the kinase activity of ROCK-I is moderately stimulated. The ROCK isozymes regulate cell contractility through phosphorylation of the myosin light chain. This effect results from either the inhibition of the myosin phosphatase or by direct phosphorylation of the myosin light chain, thus bypassing the myosin light chain kinase. In addition, ROCK-I activates the ubiquitously expressed Na-H exchanger (NHE1) via a number of mechanisms including RhoA. NHE1 may mediate ROCK-I-induced changes in the actin cytoskeleton. Therefore, ROCK-I plays an important role in the regulation of focal adhesion and stress fiber formation.



Western blot analysis for ROCK-I. *A mouse kidney lysate (left) or mouse cerebrum lysate (right) was used with the Mouse Anti-ROCK-I antibody at a 1:500 dilution. ROCK-I is expected to be observed migrating at ~ 160 kDa.*

Preparation and Storage

Store undiluted at -20°C.

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.

Application Notes

Application

Western blot	Routinely Tested
Immunofluorescence	Not Recommended

Recommended Assay Procedure:

Western blot: Please refer to http://www.bdbiosciences.com/pharmingen/protocols/Western_Blotting.shtml

Suggested Companion Products

Catalog Number	Name	Size	Clone
611457	Mouse Kidney Lysate	500 µg	(none)
554002	HRP Goat Anti-Mouse Ig	1.0 ml	(none)
611455	Mouse Cerebrum Lysate	500 µg	(none)

Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.

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2. Source of all serum proteins is from USDA inspected abattoirs located in the United States.
3. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.
4. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.

References

Ishizaki T, Maekawa M, Fujisawa K, et al. The small GTP-binding protein Rho binds to and activates a 160 kDa Ser/Thr protein kinase homologous to myotonic dystrophy kinase. *EMBO J.* 1996; 15(8):1885-1893. (Biology)

Nakagawa O, Fujisawa K, Ishizaki T, Saito Y, Nakao K, Narumiya S. ROCK-I and ROCK-II, two isoforms of Rho-associated coiled-coil forming protein serine/threonine kinase in mice. *FEBS Lett.* 1996; 392(2):189-193. (Biology)

Pawlak G, Helfman DM. Post-transcriptional down-regulation of ROCKI/Rho-kinase through an MEK-dependent pathway leads to cytoskeleton disruption in Ras-transformed fibroblasts. *Mol Biol Cell.* 2002; 13(1):336-347. (Biology: Western blot)

Sahai E, Olson MF, Marshall CJ. Cross-talk between Ras and Rho signalling pathways in transformation favours proliferation and increased motility. *EMBO J.* 2001; 20(4):755-766. (Biology: Western blot)

Wang H, Eto M, Steers WD, Somlyo AP, Somlyo AV. RhoA-mediated Ca2+ sensitization in erectile function. *J Biol Chem.* 2002; 277(37):30614-30621. (Biology: Western blot)

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