

ROCK Activity Assay Kit

96-Well ROCK Activity Assay Kit

CATALOG #
AAA44543

PRODUCT SYNONYMS

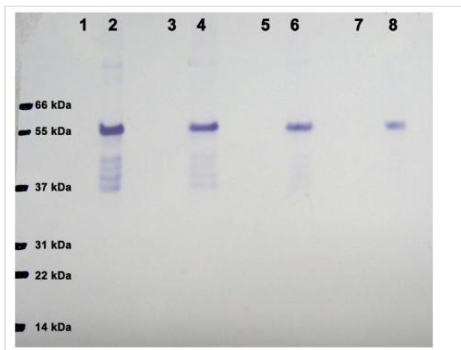
ROCK Activity; 96-Well ROCK Activity Assay Kit; ROCK Activity assay kit

PRODUCT SPECIFICATIONS

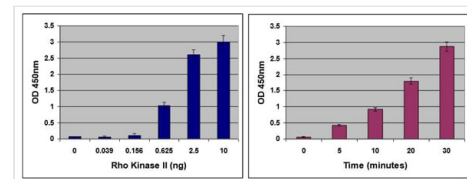
Preparation and Storage

Store active ROCK-II at -80 degree C, ATP Solution at -20 degree C and all other kit components at 4 degree C until their expiration dates. Avoid multiple freeze/thaw cycles.

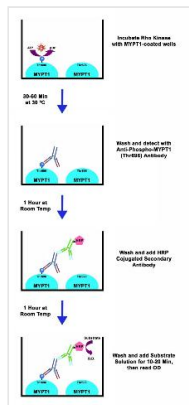
IMAGES



Application Data



Application Data



Application Data

ADDITIONAL INFORMATION

Related Product Information for ROCK Activity assay kit	Background: Members of the Rho family are essential regulatory components of the signaling pathway that direct cell motility, adhesion, and cytokinesis through reorganization of actin cytoskeleton. Rho is activated by extracellular signals such as lysophosphatidic acid (LPA). The actions of Rho are mediated by downstream Rho effectors. One of these effectors is Rho-associated kinase (ROCK). Two ROCK isoforms have been identified: ROCK-I (also known as ROKbeta) and ROCK-II (also known as Rho Kinase and ROKalpha). ROCK mediates Rho signaling and reorganizes actin cytoskeleton through phosphorylation of several substrates that contribute to the assembly of actin filaments and contractility. For example, ROCK inactivates myosin phosphatase through the specific phosphorylation of myosin phosphatase target subunit 1 (MYPT1) at Thr696, which results in an increase in the phosphorylated content of the 20-kDa myosin light chain (MLC20). 96-well ROCK Activity Assay Kit is an enzyme immunoassay developed for detection of the specific phosphorylation of MYPT1 at Thr696 by ROCK. A strip well microtiter plate is precoated with a recombinant MYPT1. After incubating the substrate wells with ROCK samples (such as purified kinase, cell or tissue lysate) the phosphorylated MYPT1 is detected by an anti-phospho-MYPT1 (Thr696) antibody (Figure 1). 96-well ROCK Activity Assay Kit provides a non-isotopic, sensitive and specific method to monitor ROCK activity using its physiological substrate; it can also be used in screening ROCK inhibitors. The kit has detection sensitivity limit of 200 pg of active ROCK-II. A recombinant active ROCK-II is also provided as a positive control. Each kit provides sufficient quantities to perform up to 96 assays.
Product Categories/Family for ROCK Activity assay kit	Cell Signaling and Protein Biology; Kinase Assays; Rho Kinase (ROCK) Assays
References	- Etienne-Manneville, S., and Hall, A. (2002) Nature 420, 629-635. - Riento, K., and Ridley, A. J. (2003) Nat. Rev. Mol. Cell. Biol. 4, 446-456. - Leung, T., Manser, E., Tan, L., and Lim, L. (1995) J. Biol. Chem. 270, 29051-29054. - Matsui, T., Amano, M., Yamamoto, T., Chihara, K., Nakafuku, M., Ito, M., Nakano, T., Okawa, K., Iwamatsu, A., and Kaibuchi, K. (1996) EMBO J. 15, 2208-2216. - Totsukawa, G, et al., J. Cell Biol. (1999) 144, 735-744. - Weber, M et al. (2014). MiRNA-155 targets myosin light chain kinase and modulates actin cytoskeleton organization in endothelial cells. Am. J. Physiol. Heart Circ. Physiol. 306:H1192-H1203. - Narimatsu, T. et al. (2013). Disruption of Cell-Cell Junctions and Induction of Pathological Cytokines in the Retinal Pigment Epithelium of Light-Exposed Mice. Invest. Ophthalmol. Vis. Sci. 54:4555-4562. - Singh, J. et al. (2013). Role of PKC and RhoA/ROCK Pathways in the Spontaneous Phasic Activity in the Rectal Smooth Muscle. Am J Physiol Gastrointest Liver Physiol. 304:G723-G731. - Barcia, C. et al. (2012). ROCK/Cdc42-Mediated Microglial Motility and Gliapase Formation Lead to Phagocytosis of Degenerating Dopaminergic Neurons in vivo. Sci Rep. 2:809. - Zhang, W. et al. (2012). The Small GTPase RhoA Regulates the Contraction of Smooth Muscle Tissues by Catalyzing the Assembly of Cytoskeletal Signaling Complexes at Membrane Adhesion Sites. J. Biol. Chem. 287: 33966-34008. - Burger, D. et al. (2012). Microparticles Induce Cell Cycle Arrest Through Redox-Sensitive Processes in Endothelial Cells: Implications in Vascular Senescence. JAHA. 1: e001842. - DiPaolo, B.C. et al. (2012). Rho Kinase Signaling Pathways During Stretch in Primary Alveolar Epithelia. Am J Lung Cell Mol Physiol. 302: L992-L1002. - Burger, D. et al. (2011). Endothelial Microparticle Formation by Angiotensin II is Mediated via Ang II Receptor Type I/NADPH Oxidase/Rho Kinase Pathways Targeted to Lipid Rafts. Arterioscler Thromb Vasc Biol. 31:1898-1907. - Yotova, I.Y. et al. (2011). Abnormal Activation of Ras/Raf/MAPK and RhoA/ROCKII Signaling Pathways in Eutopic Endometrial Stromal cells of Patients with Endometriosis. Hum. Reprod. 10.1093/humrep/der010. - Haas, B. et al. (2009). Protein Kinase G Controls Brown Fat Cell Differentiation and Mitochondrial Biogenesis. Sci. Signal. 2:ra78.

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

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Online datasheet: <https://stage.aaabiotech.com/assay-kits/rock-activity/44543>