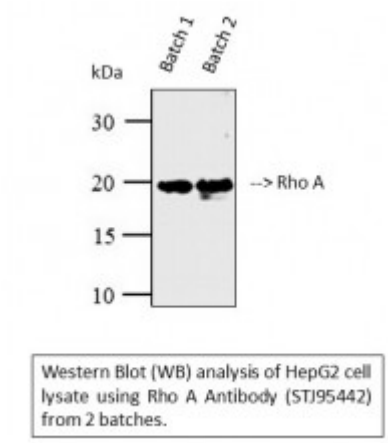
# Anti-Rho A antibody




Western Blot (WB) analysis of HepG2 cell lysate using Rho A Antibody (STJ95442) from 2 batches.

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| **Description** | Rho A is a protein encoded by the RHOA gene which is approximately 21,7 kDa. Rho A is localised to the cell membrane and cytoplasm. It is involved in p75 NTR receptor-mediated signalling, semaphorin interactions, the S1P3 pathway, blood-brain barrier and immune cell transmigration. This protein falls under the Rho family of small GTPases, which cycle between inactive GDP-bound and active GTP-bound states and function as molecular switches in signal transduction cascades. It promotes the reorganization of the actin cytoskeleton and regulate cell shape, attachment, and motility. Rho A is expressed in the nervous system, blood, eye, intestine and lung. Mutations in the RHOA gene may result in colorectal cancer and cervix carcinoma. STJ95442 was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen. This polyclonal antibody detects endogenous levels of Rho A protein. |

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| **Model** | STJ95442 |
| **Host** | Rabbit |
| **Reactivity** | Human, Mouse, Rat |
| **Applications** | ELISA, IHC, WB |
| **Immunogen** | Synthesized peptide derived from human Rho A around the non-phosphorylation site of S188. |
| **Immunogen Region** | 130-210 aa |
| **Gene ID** | 387 |
| **Gene Symbol** | RHOA |
| **Dilution range** | WB 1:500-1:2000IHC 1:100-1:300ELISA 1:5000 |

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| **Specificity** | Rho A Polyclonal Antibody detects endogenous levels of Rho A protein. |
| **Purification** | The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen. |
| **Note** | For Research Use Only (RUO). |
| **Protein Name** | Transforming protein RhoA Rho cDNA clone 12 h12 |
| **Molecular Weight** | 22 kDa |
| **Clonality** | Polyclonal |
| **Conjugation** | Unconjugated |
| **Isotype** | IgG |
| **Formulation** | Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide. |
| **Concentration** | 1 mg/ml |
| **Storage Instruction** | Store at -20°C, and avoid repeat freeze-thaw cycles. |
| **Database Links** | HGNC:667OMIM:165390 |
| **Alternative Names** | Transforming protein RhoA Rho cDNA clone 12 h12 |
| **Function** | Regulates a signal transduction pathway linking plasma membrane receptors to the assembly of focal adhesions and actin stress fibers. Involved in a microtubule-dependent signal that is required for the myosin contractile ring formation during cell cycle cytokinesis. Plays an essential role in cleavage furrow formation. Required for the apical junction formation of keratinocyte cell-cell adhesion. Stimulates PKN2 kinase activity. May be an activator of PLCE1. Activated by ARHGEF2, which promotes the exchange of GDP for GTP. Essential for the SPATA13-mediated regulation of cell migration and adhesion assembly and disassembly. The MEMO1-RHOA-DIAPH1 signaling pathway plays an important role in ERBB2-dependent stabilization of microtubules at the cell cortex. It controls the localization of APC and CLASP2 to the cell membrane, via the regulation of GSK3B activity. In turn, membrane-bound APC allows the localization of the MACF1 to the cell membrane, which is required for microtubule capture and stabilization. Regulates a signal transduction pathway linking plasma membrane receptors to the assembly of focal adhesions and actin stress fibers. Involved in a microtubule-dependent signal that is required for the myosin contractile ring formation during cell cycle cytokinesis. Plays an essential role in cleavage furrow formation. Required for the apical junction formation of keratinocyte cell-cell adhesion. May be an activator of PLCE1. Activated by ARHGEF2, which promotes the exchange of GDP for GTP. Essential for the SPATA13-mediated regulation of cell migration and adhesion assembly and disassembly. The MEMO1-RHOA-DIAPH1 signaling pathway plays an important role in ERBB2-dependent stabilization of microtubules at the cell cortex. It controls the localization of APC and CLASP2 to the cell membrane, via the regulation of GSK3B activity. In turn, membrane-bound APC allows the localization of the MACF1 to the cell membrane, which is required for microtubule capture and stabilization . Regulates KCNA2 potassium channel activity by reducing its location at the cell surface in response to CHRM1 activation; promotes KCNA2 endocytosis . (Microbial infection) Serves as a target for the yopT cysteine peptidase from Yersinia pestis, vector of the plague, and Yersinia pseudotuberculosis, which causes gastrointestinal disorders. |

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| **Sequence and Domain Family** | The basic-rich region is essential for yopT recognition and cleavage. |
| **Cellular Localization** | Cell membrane. Lipid-anchor. Cytoplasmic side. Cytoplasm, cytoskeleton. Cleavage furrow. Cytoplasm, cell cortex Midbody. Cell projection, lamellipodium. Localized to cell-cell contacts in calcium-treated keratinocytes . Translocates to the equatorial region before furrow formation in a ECT2-dependent manner. Localizes to the equatorial cell cortex (at the site of the presumptive furrow) in early anaphase in a activated form and in a myosin- and actin-independent manner. |
| **Post-translational Modifications** | (Microbial infection) Substrate for botulinum ADP-ribosyltransferase. (Microbial infection) Cleaved by yopT protease when the cell is infected by some Yersinia pathogens. This removes the lipid attachment, and leads to its displacement from plasma membrane and to subsequent cytoskeleton cleavage. (Microbial infection) AMPylation at Tyr-34 and Thr-37 are mediated by bacterial enzymes in case of infection by H.somnus and V.parahaemolyticus, respectively. AMPylation occurs in the effector region and leads to inactivation of the GTPase activity by preventing the interaction with downstream effectors, thereby inhibiting actin assembly in infected cells. It is unclear whether some human enzyme mediates AMPylation; FICD has such ability in vitro but additional experiments remain to be done to confirm results in vivo. (Microbial infection) Glycosylated at Tyr-34 by Photorhabdus asymbiotica toxin PAU_02230. Mono-O-GlcNAcylation by PAU_02230 inhibits downstream signaling by an impaired interaction with diverse regulator and effector proteins of Rho and leads to actin disassembly. Phosphorylation by PRKG1 at Ser-188 inactivates RHOA signaling . Phosphorylation by SLK at Ser-188 in response to AGTR2 activation . Ubiquitinated by the BCR(BACURD1) and BCR(BACURD2) E3 ubiquitin ligase complexes, leading to its degradation by the proteasome, thereby regulating the actin cytoskeleton and cell migration. |