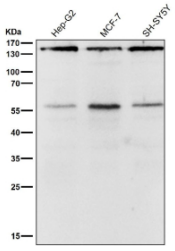
ROCK1 Antibody / Rho associated coiled coil containing protein kinase 1 [clone 32R84] (FY13332)

Catalog No.	Formulation	Size
FY13332	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA	100 ul

Recombinant RABBIT MONOCLONAL

Bulk quote request

Availability	2-3 weeks
Species Reactivity	Human, Mouse, Rat
Format	Liquid
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	32R84
Purity	Affinity chromatography
Buffer	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA.
UniProt	Q13464
Applications	Western blot: 1:500-1:2000 Immunohistochemistry: 1:50-1:200 Immunoprecipitation: 1:50 Flow Cytometry: 1:50
Limitations	This ROCK1 antibody is available for research use only.



Western blot testing of human samples using the ROCK1 antibody at 1:2000 dilution for 1 hour at room temperature. A predominant band is detected at an approximately 158 kDa in all samples, consistent with full length ROCK1. An additional weaker band is observed just above the 55 kDa marker, which likely represents a proteolytic fragment of ROCK1 generated during cell stress or sample preparation rather than a distinct isoform.

Description

ROCK1 antibody detects Rho associated coiled coil containing protein kinase 1, encoded by the ROCK1 gene. Rho associated coiled coil containing protein kinase 1 is a serine-threonine kinase that mediates actin cytoskeleton organization, cell adhesion, and motility downstream of Rho GTPases. ROCK1 antibody provides researchers with an important reagent to study signal transduction, cytoskeletal remodeling, and disease processes.

Rho associated coiled coil containing protein kinase 1 is activated by binding to the small GTPase RhoA. Research using ROCK1 antibody has shown that upon activation, the kinase phosphorylates substrates such as LIM kinase, myosin light chain phosphatase, and ERM proteins. These phosphorylation events regulate actin filament assembly, stress fiber formation, and focal adhesion dynamics. Through these activities, ROCK1 coordinates changes in cell shape and migration in response to extracellular signals.

Studies with ROCK1 antibody have revealed that the kinase is essential for smooth muscle contraction, axon guidance, and angiogenesis. ROCK1 participates in vascular tone regulation by modulating smooth muscle contractility, while in the nervous system, it influences growth cone dynamics during axonal pathfinding. In endothelial cells, ROCK1 activity supports sprouting angiogenesis and vessel stability. These diverse roles emphasize its broad physiological importance.

Dysregulation of Rho associated coiled coil containing protein kinase 1 contributes to disease. Research using ROCK1 antibody has demonstrated that aberrant activation promotes cancer cell invasion and metastasis by remodeling the actin cytoskeleton. In cardiovascular disease, excessive ROCK1 activity contributes to vascular stiffness and hypertension. In neurological disorders, altered ROCK1 function affects axonal regeneration and contributes to neurodegeneration. These findings highlight ROCK1 as a therapeutic target in multiple pathological contexts.

Pharmacological inhibition of ROCK1 has been explored for therapeutic benefit. Studies with ROCK1 antibody have supported the development of selective inhibitors such as fasudil and ripasudil, which show efficacy in treating pulmonary hypertension, glaucoma, and other conditions involving abnormal ROCK signaling. This underscores the clinical relevance of monitoring ROCK1 expression and activity.

ROCK1 antibody is widely used in western blotting, immunohistochemistry, and immunofluorescence. Western blotting detects kinase expression and post-translational modifications, immunohistochemistry demonstrates tissue distribution, and immunofluorescence shows cytoplasmic localization associated with actin fibers. These applications make ROCK1 antibody versatile in cell biology and disease research.

By providing validated ROCK1 antibody reagents, NSJ Bioreagents supports research into cytoskeletal regulation, signaling, and therapeutic development. Detection of Rho associated coiled coil containing protein kinase 1 provides insight into how Rho GTPase pathways govern cellular architecture and disease mechanisms.

Application Notes

Optimal dilution of the ROCK1 antibody should be determined by the researcher.

Immunogen

A synthesized peptide derived from human ROCK1 was used as the immunogen for the ROCK1 antibody.

Storage

Store the ROCK1 antibody at -20oC.

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