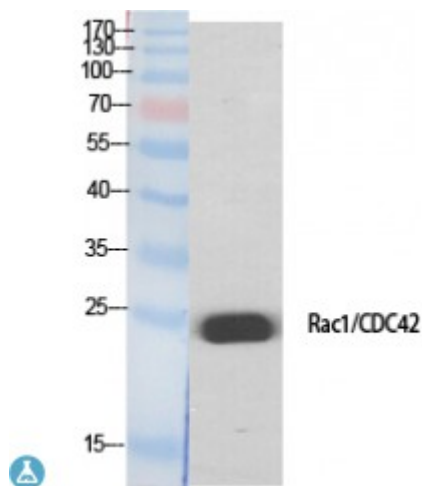


Anti-Rac1/2/3/CDC42 antibody



Description	Rabbit polyclonal to Rac1/2/3/CDC42.
Model	STJ95319
Host	Rabbit
Reactivity	Human, Mouse, Rat
Applications	ELISA, IHC, WB
Immunogen	Synthesized peptide derived from human Rac1/2/3/CDC42 around the non-phosphorylation site of S71.
Immunogen Region	10-90 aa
Gene ID	5879
Gene Symbol	RAC1
Dilution range	WB 1:500-1:2000IHC 1:100-1:300ELISA 1:20000
Specificity	Rac1/2/3/CDC42 Polyclonal Antibody detects endogenous levels of Rac1/2/3/CDC42 protein.
Tissue Specificity	Isoform B is predominantly identified in skin and epithelial tissues from the intestinal tract. Its expression is elevated in colorectal tumors at various stages of neoplastic progression, as compared to their respective adjacent tissues.
Purification	The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen.
Note	For Research Use Only (RUO).
Protein Name	Ras-related C3 botulinum toxin substrate 1 Cell migration-inducing gene 5 protein Ras-like protein TC25 p21-Rac1

Molecular Weight	26 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:9801OMIM:602048
Alternative Names	Ras-related C3 botulinum toxin substrate 1 Cell migration-inducing gene 5 protein Ras-like protein TC25 p21-Rac1
Function	Plasma membrane-associated small GTPase which cycles between active GTP-bound and inactive GDP-bound states. In its active state, binds to a variety of effector proteins to regulate cellular responses such as secretory processes, phagocytosis of apoptotic cells, epithelial cell polarization and growth-factor induced formation of membrane ruffles. Rac1 p21/rho GDI heterodimer is the active component of the cytosolic factor sigma 1, which is involved in stimulation of the NADPH oxidase activity in macrophages. Essential for the SPATA13-mediated regulation of cell migration and adhesion assembly and disassembly. Stimulates PKN2 kinase activity. In concert with RAB7A, plays a role in regulating the formation of RBs (ruffled borders) in osteoclasts. In glioma cells, promotes cell migration and invasion. In podocytes, promotes nuclear shuttling of NR3C2; this modulation is required for a proper kidney functioning. Required for atypical chemokine receptor ACKR2-induced LIMK1-PAK1-dependent phosphorylation of cofilin (CFL1) and for up-regulation of ACKR2 from endosomal compartment to cell membrane, increasing its efficiency in chemokine uptake and degradation. In synapses, seems to mediate the regulation of F-actin cluster formation performed by SHANK3.; Isoform B has an accelerated GEF-independent GDP/GTP exchange and an impaired GTP hydrolysis, which is restored partially by GTPase-activating proteins. It is able to bind to the GTPase-binding domain of PAK but not full-length PAK in a GTP-dependent manner, suggesting that the insertion does not completely abolish effector interaction.
Sequence and Domain Family	The effector region mediates interaction with DEF6.
Cellular Localization	Cell membrane Melanosome Cytoplasm. Inner surface of plasma membrane possibly with attachment requiring prenylation of the C-terminal cysteine . Identified by mass spectrometry in melanosome fractions from stage I to stage IV. Found in the ruffled border (a late endosomal-like compartment in the plasma membrane) of bone-resorbing osteoclasts .
Post-translational Modifications	(Microbial infection) AMPylation at Tyr-32 and Thr-35 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. GTP-bound active form is ubiquitinated by HACE1, leading to its degradation by the proteasome. (Microbial infection) Glycosylated at Tyr-32 by *Photobacterium* toxin PAU_02230. Mono-O-GlcNAcylation by PAU_02230 inhibits downstream signaling by an impaired interaction with diverse regulator and effector proteins of Rac and leads to actin disassembly.

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