10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

RAC1 Antibody (S71)

Affinity Purified Rabbit Polyclonal Antibody (Pab)

Catalog # AP7578a

Specification

RAC1 Antibody (S71) - Product Information

Application	**WB,E**
Primary Accession	P63000
Other Accession	P60764, P60763, Q05144, P15153, P48554, Q9TU25, Q6RUV5, P63001, P40792, Q03206, P62998, Q8CFN2, Q007T2, P60766, Q4R4R6, P60953, P40793, Q90694, Q05062, Q2KJ93
Reactivity	**Human, Rat**
Predicted	**Bovine, C.Elegans, Chicken, Drosophila, Monkey, Mouse, Pig**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**Rabbit IgG**
Calculated MW	**21450**
Antigen Region	**49-78**

RAC1 Antibody (S71) - Additional Information

Gene ID 5879

Other Names
Ras-related C3 botulinum toxin substrate 1, Cell migration-inducing gene 5 protein, Ras-like protein TC25, p21-Rac1, RAC1, TC25

Target/Specificity
This RAC1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 49-78 amino acids from human RAC1.

Dilution
WB~~1:2000

Format
Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.

Storage
Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions
RAC1 Antibody (S71) is for research use only and not for use in diagnostic or therapeutic procedures.

RAC1 Antibody (S71) - Protein Information

Name RAC1 (HGNC:9801)

Synonyms TC25

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, neurons adhesion, migration and differentiation, and growth-factor induced formation of membrane ruffles (PubMed:1643658, PubMed:28886345, PubMed:23512198). 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 (PubMed:9121475). In concert with RAB7A, plays a role in regulating the formation of RBs (ruffled borders) in osteoclasts (PubMed:1643658). 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 neurons, is involved in dendritic spine formation and synaptic plasticity (By similarity). In hippocampal neurons, involved in spine morphogenesis and synapse formation, through local activation at synapses by guanine nucleotide exchange factors (GEFs), such as ARHGEF6/ARHGEF7/PIX (PubMed:12695502). In synapses, seems to mediate the regulation of F-actin cluster formation performed by SHANK3. In neurons, plays a crucial role in regulating GABA(A) receptor synaptic stability and hence GABAergic inhibitory synaptic transmission through its role in PAK1 activation and eventually F-actin stabilization (By similarity).

Cellular Location
Cell membrane; Lipid-anchor; Cytoplasmic side. Melanosome. Cytoplasm. Cell projection, lamellipodium {ECO:0000250|UniProtKB:P63001}. Cell projection, dendrite {ECO:0000250|UniProtKB:P63001}. Synapse {ECO:0000250|UniProtKB:Q6RUV5} Nucleus. Note=Inner surface of plasma membrane possibly with attachment requiring prenylation of the C-terminal cysteine (PubMed:1903399). Identified by mass spectrometry in melanosome fractions from stage I to stage IV (PubMed:17081065). Found in the ruffled border (a late endosomal-like compartment in the plasma membrane) of bone-resorbing osteoclasts. Localizes to the lamellipodium in a SH3RF1-dependent manner (By similarity). In macrophages, cytoplasmic location increases upon CSF1 stimulation (By similarity) Activation by GTP-binding promotes nuclear localization (PubMed:12551911). {ECO:0000250|UniProtKB:P63001, ECO:0000250|UniProtKB:Q6RUV5, ECO:0000269|PubMed:12551911, ECO:0000269|PubMed:17081065, ECO:0000269|PubMed:1903399}

Tissue Location
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

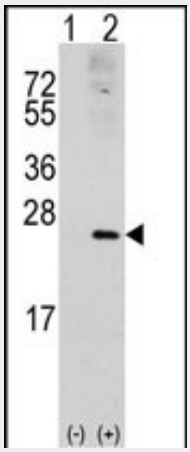
RAC1 Antibody (S71) - Protocols

Provided below are standard protocols that you may find useful for product applications.

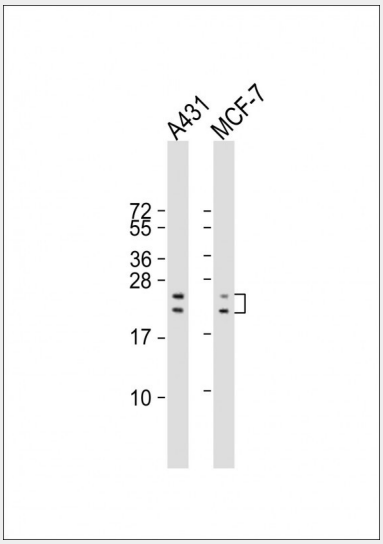
- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence

- Immunoprecipitation
- Flow Cytomety
- Cell Culture

RAC1 Antibody (S71) - Images

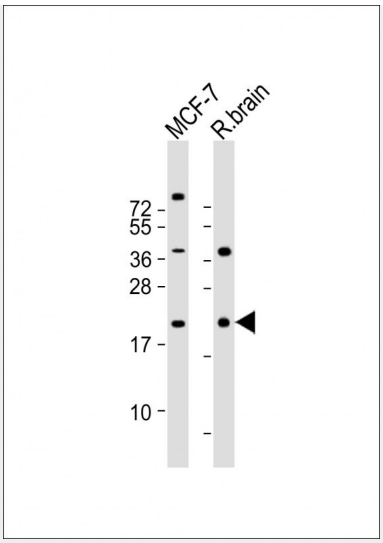


Western blot analysis of RAC1 (arrow) using rabbit polyclonal RAC1 Antibody (S71) (Cat.#AP7578a).293 cell lysates (2 ug/lane) either nontransfected (Lane 1) or transiently transfected with the RAC1 gene (Lane 2) (Origene Technologies).



All lanes : Anti-RAC1 Antibody (S71) at 1:2000 dilution Lane 1: A431 whole cell lysate Lane 2: MCF-7 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 21 kDa Blocking/Dilution buffer: 5% NFDM/TBST.

10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999



All lanes : Anti-RAC1 Antibody (S71) at 1:2000 dilution Lane 1: MCF-7 whole cell lysate Lane 2: rat brain lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 21 kDa Blocking/Dilution buffer: 5% NFDM/TBST.

RAC1 Antibody (S71) - Background

RAC1 is a GTPase belonging to the RAS superfamily of small GTP-binding proteins. It is a pleiotropic regulator of many cellular processes, including the cell cycle, cell-cell adhesion, motility (through the actin network), and of epithelial differentiation (proposed to be necessary for maintaining epidermal stem cells).

RAC1 Antibody (S71) - References

Wang,T.,Neurosci. Lett. 437 (2), 71-75 (2008)
Gorshkova,I., J. Biol. Chem. 283 (17), 11794-11806 (2008)
Simeone-Penney,M.C.,Am. J. Physiol. Lung Cell Mol. Physiol. 294 (4), L698-L704 (2008)