

**RAC1 Antibody (S71) Blocking Peptide**  
**Synthetic peptide**  
**Catalog # BP7578a****Specification**

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**RAC1 Antibody (S71) Blocking Peptide - Product Information**Primary Accession [P63000](#)**RAC1 Antibody (S71) Blocking Peptide - 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**

The synthetic peptide sequence used to generate the antibody [AP7578a](/products/AP7578a) was selected from the S71 region of human RAC1. A 10 to 100 fold molar excess to antibody is recommended. Precise conditions should be optimized for a particular assay.

**Format**

Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

**Storage**

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

**Precautions**

This product is for research use only. Not for use in diagnostic or therapeutic procedures.

**RAC1 Antibody (S71) Blocking Peptide - 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](http://www.uniprot.org/citations/1643658), PubMed: [28886345](http://www.uniprot.org/citations/28886345), PubMed: [23512198](http://www.uniprot.org/citations/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:<a href="http://www.uniprot.org/citations/9121475" target="\_blank">9121475</a>). In concert with RAB7A, plays a role in regulating the formation of RBs (ruffled borders) in osteoclasts (PubMed:<a href="http://www.uniprot.org/citations/1643658" target="\_blank">1643658</a>). 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:<a href="http://www.uniprot.org/citations/12695502" target="\_blank">12695502</a>). 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) Blocking Peptide - Protocols

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

- [Blocking Peptides](#)

## RAC1 Antibody (S71) Blocking Peptide - Images

## RAC1 Antibody (S71) Blocking Peptide - 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) Blocking Peptide - 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)