ARG54719
anti-RAC1 antibody

Package: 100 µl
Store at: -20°C

Summary

Product Description	Mouse Monoclonal antibody recognizes RAC1
Tested Reactivity	Hu, Ms, Rat
Tested Application	FACS, IHC-P, WB
Specificity	This antibody might also react to RAC2 and RAC3 duo to the sequence analysis results.
Host	Mouse
Clonality	Monoclonal
Clone	1301CT276.121.104
Isotype	IgG2b
Target Name	RAC1
Species	Human
Immunogen	KLH-conjugated synthetic peptide from Human RAC1 protein (NP_008839.2).
Conjugation	Un-conjugated
Alternate Names	Ras-like protein TC25; p21-Rac1; MIG5; Rac-1; TC-25; Ras-related C3 botulinum toxin substrate 1; Cell migration-inducing gene 5 protein

Application Instructions

Application table

Application	Dilution
FACS	1:100
IHC-P	1:25
WB	1:1000

Application Note	* The dilutions indicate recommended starting dilutions and the optimal dilutions or concentrations should be determined by the scientist.
Positive Control	A431

Properties

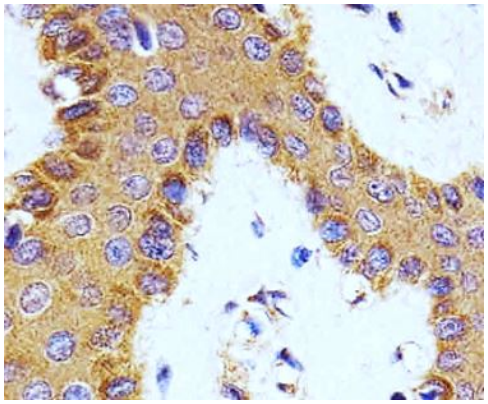
Purification	Protein G purified
Buffer	PBS and 0.09% (W/V) Sodium azide
Preservative	0.09% (W/V) Sodium azide
Storage instruction	For continuous use, store undiluted antibody at 2-8°C for up to a week. For long-term storage, aliquot and store at -20°C or below. Storage in frost free freezers is not recommended. Avoid repeated freeze/thaw cycles. Suggest spin the vial prior to opening. The antibody solution should be gently mixed before use.

Note	For laboratory research only, not for drug, diagnostic or other use.

Bioinformation

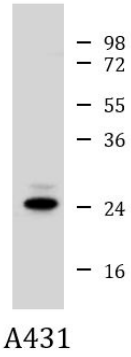
Gene Symbol	RAC1
Gene Full Name	ras-related C3 botulinum toxin substrate 1 (rho family, small GTP binding protein Rac1)
Background	The protein encoded by this gene is a GTPase which belongs to the RAS superfamily of small GTP-binding proteins. Members of this superfamily appear to regulate a diverse array of cellular events, including the control of cell growth, cytoskeletal reorganization, and the activation of protein kinases. Two transcript variants encoding different isoforms have been found for this gene. [provided by RefSeq, Mar 2009]
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. [From Uniprot]
Research Area	Cancer antibody; Cell Biology and Cellular Response antibody; Gene Regulation antibody; Immune System antibody; Signaling Transduction antibody
Calculated Mw	21 kDa
PTM	(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 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 Rac and leads to actin disassembly.
Cellular Localization	Cell membrane; Lipid-anchor; Cytoplasmic side. Melanosome. Cytoplasm. Note=Inner surface of plasma membrane possibly with attachment requiring prenylation of the C-terminal cysteine (By similarity). 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 (By similarity).

Images



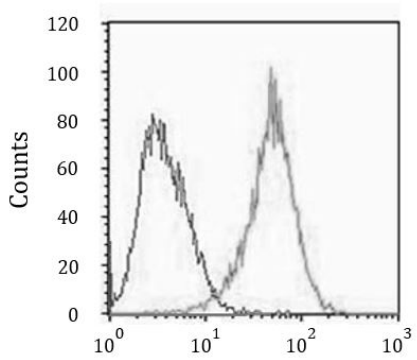
ARG54719 anti-RAC1 antibody IHC-P image

Immunohistochemistry: Paraffin-embedded Human skin section stained with ARG54719 anti-RAC1 antibody at 1:25 dilution.



ARG54719 anti-RAC1 antibody WB image

Western blot: 35 µg of A431 cell lysate stained with ARG54719 anti-RAC1 antibody at 1:1000 dilution.



ARG54719 anti-RAC1 antibody FACS image

Flow Cytometry: U-87 MG cells stained with ARG54719 anti-RAC1 antibody (right histogram) at 1:100 dilution or isotype control antibody (left histogram), followed by incubation with Alexa Fluor® 488 labelled secondary antibody.