

RAC1 + RAC2 Rabbit pAb

Catalog # AP100251

Product Information

Application	IHC-P, IHC-F, IF
Primary Accession	P15153
Other Accession	P15153
Reactivity	Rat
Predicted	Human, Mouse, Rabbit, Chicken, Horse, Sheep
Host	Rabbit
Clonality	Polyclonal
Calculated MW	21429
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human RAC2
Epitope Specificity	89-180/192
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SIMILARITY	Belongs to the small GTPase superfamily. Rho family.
SUBUNIT	nteracts (GTP-bound form preferentially) with PKN2 (via the REM repeats); the interaction stimulates autophosphorylation and phosphorylation of PKN2. Interacts with the GEF proteins PREX1, RASGRF2, DOCK1, DOCK2 and DOCK7, which promote the exchange between GDP and GTP, and therefore activate it. Interacts with PARD6A, PARD6B and PARD6G in a GTP-dependent manner. Part of a quaternary complex containing PARD3, some PARD6 protein (PARD6A, PARD6B or PARD6G) and some atypical PKC protein (PRKCI or PRKCZ), which plays a central role in epithelial cell polarization. Found in a trimeric complex composed of DOCK1 and ELMO1, which plays a central role in phagocytosis of apoptotic cells. Interacts with RALBP1 via its effector domain. Interacts with PLXNB1. Probably found in a ternary complex composed of DSCAM, PAK1 and RAC1. Interacts with DSCAM; the interaction requires PAK1. Part of a complex with MAP2K3, MAP3K3, CCM2 and DEF6. Interacts with BAIAP2, BAIAP2L1, CYFIP1/SRA-1 and DEF6. Interacts with Y.pseudotuberculosis YPKA and PLCB2. Interacts with NOXA1. Interacts with ARHGEF2. Interacts with NISCH (By similarity). Interacts with TBC1D2. Interacts with UNKL. Interacts with USP6. Interacts with SPATA13. Interacts with ARHGEF16; mediates activation of RAC1 by EPHA2. Interacts with ITGB4. Interacts with PIP5K1A (By similarity).
Post-translational modifications	AMPPylation at Tyr-32 and Thr-35 are mediated by bacterial enzymes in case of infection by H.somnus and V.parahaemolyticus, respectively. AMPPylation 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 AMPPylation; 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.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	This gene encodes a member of the Ras superfamily of small guanosine

triphosphate (GTP)-metabolizing proteins. The encoded protein localizes to the plasma membrane, where it regulates diverse processes, such as secretion, phagocytosis, and cell polarization. Activity of this protein is also involved in the generation of reactive oxygen species. Mutations in this gene are associated with neutrophil immunodeficiency syndrome. There is a pseudogene for this gene on chromosome 6. [provided by RefSeq, Jul 2013].

Additional Information

Gene ID	5880
Other Names	MIG5; MRD48; Rac-1; TC-25; p21-Rac1; EN-7; Gx; HSPC022; IMD73A; IMD73B; IMD73C; p21-Rac2; D5ErtD559e; RAC2_HUMAN; RAC2; Small G protein; 3.6.5.2; RAC1_HUMAN; RAC1; Cell migration-inducing gene 5 protein; Ras-like protein TC25; TC25; RAC1_MOUSE; RAC2_MOUSE; Protein EN-7; RAC1_RAT; Rac; Rac family small GTPase 2; ras-related C3 botulinum toxin substrate 2 (rho family, small GTP binding protein Rac2)
Dilution	IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name	RAC2 (HGNC:9802)
Function	Plasma membrane-associated small GTPase which cycles between an active GTP-bound and inactive GDP-bound state (PubMed: 30723080). In its active state, binds to a variety of effector proteins to regulate cellular responses, such as secretory processes, phagocytosis of apoptotic cells and epithelial cell polarization. Regulatory subunit of the phagocyte NADPH oxidase complex that mediates the transfer of electrons from cytosolic NADPH to O ₂ to produce the superoxide anion (O ₂ ⁻) (PubMed: 1660188). Activates PLCG2 (PubMed: 19394299).
Cellular Location	Cytoplasm. Note=Membrane-associated when activated
Tissue Location	Hematopoietic specific.

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