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Rap2A Rabbit pAb

Catalog # AP98632

Product Information

Application	IHC-P, IHC-F, IF
Primary Accession	P10114
Other Accession	P10114
Reactivity	Rat
Predicted	Human, Mouse, Rabbit, Chicken, Dog, Horse, Sheep
Host	Rabbit
Clonality	Polyclonal
Calculated MW	20615
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human Rap2A
Epitope Specificity	121-183/183
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. Ras family.
SUBUNIT	Interacts (GTP-bound form) with RUNDC3A. Interacts with RGS14; the interaction is GTP-dependent (By similarity). Interacts with PLCE1. Interacts with ARHGAP29, SGSM1, SGSM2 and SGSM3. Interacts (GTP-bound form preferentially) with TNIK (via the CNH domain); the interaction is direct and recruits RAP2A to the E3 ubiquitin ligase NEDD4. Interacts with MINK1. Interacts (GTP-bound form preferentially) with MAP4K4. Interacts with cytoskeletal actin.
Post-translational modifications	Ubiquitinated; undergoes 'Lys-63' monoubiquitination and diubiquitination by NEDD4. Multiple lysine residues are probably modified. Ubiquitination requires TNIK, prevents interaction with effectors and inactivates RAP2A. Palmitoylated. Palmitoylation is required for association with recycling endosome membranes and activation of TNIK (By similarity).
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	Ras oncogenes encode GTP-binding proteins that are capable of transforming immortalized cells in culture. Two Ras-related human genes, designated RAP1A and RAP1B, encode 95% homologous proteins (namely Rap 1A and Rap 1B) that share a similar C-terminal Cys-Ali-Ali-Xaa sequence with Ras proteins and are ubiquitously expressed in mammalian tissues. The putative “effector” domain of Ras proteins, whose integrity is required for cell transformation as well as interaction with the putative effector protein GAP, is conserved in both Rap 1 proteins. Rap 1A is thought to interfere with Ras effector function by binding to Ras GAP in a GTP-dependent manner without affecting Rap 1A GTPase activity. Rap 2, another Ras-related protein, shares 60% identity with Rap 1A and exhibits a carboxy terminal CAAX motif and two upstream cysteines similar to those of the H-Ras, K-Ras and N-Ras proteins. In contrast with Rap 1A and Rap 1B, overexpression of Rap 2 does not interfere with the Ras signaling pathway.

Additional Information

Gene ID	5911
Other Names	K-REV; KREV; RAP2; RbBP-30; RAP2A_HUMAN; RAP2A; 3.6.5.2; RAP2A, member of RAS oncogene family
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	RAP2A (HGNC:9861)
Function	Small GTP-binding protein which cycles between a GDP-bound inactive and a GTP-bound active form (PubMed:14966141, PubMed:15342639, PubMed:16246175, PubMed:16540189, PubMed:18930710, PubMed:20159449, PubMed:35293963). In its active form interacts with and regulates several effectors including MAP4K4, MINK1 and TNIK (PubMed:14966141, PubMed:15342639, PubMed:18930710, PubMed:20159449). Part of a signaling complex composed of NEDD4, RAP2A and TNIK which regulates neuronal dendrite extension and arborization during development (PubMed:20159449). More generally, it is part of several signaling cascades and regulates cytoskeletal rearrangements, cell migration, cell adhesion and cell spreading (PubMed:14966141, PubMed:15342639, PubMed:16246175, PubMed:16540189, PubMed:18930710, PubMed:20159449, PubMed:35293963).
Cellular Location	Midbody. Cell projection, lamellipodium membrane. Golgi apparatus. Recycling endosome membrane; Lipid-anchor; Cytoplasmic side. Lysosome. Note=Localized to the Golgi (PubMed:35293963, PubMed:7962206). May also localize to the gelatinase- containing granules of neutrophils (PubMed:8391995). Colocalized with RASGEF1B to midbody at telophase (PubMed:23894443). Localized predominantly to the plasma membrane, where it is enriched at lamellipodia ruffles (PubMed:35293963). Cycles between the lamellipodia plasma membrane and endosomes when ubiquitinated by the ECS(RAB40B) complex (PubMed:35293963). Without the ubiquitin signal, sorted to lysosomes for degradation (PubMed:35293963)

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