Rabbit Rab4 Polyclonal Antibody | anti-RAB5A antibody

Rab4 Antibody: ATTO 488

CATALOG #	HOST	REACTIVITY	APPLICATIONS
AAA103526	**Rabbit**	**Human, Mouse, Rat**	**Immunohistochemistry, Immunocytochemistry, Immunofluorescence, Western Blot**

PRODUCT SYNONYMS

Rab4; Polyclonal Antibody; Rab4 Antibody: ATTO 488; Oncogene Rab4; Rab4A; Ras related protein; anti-RAB5A antibody

PRODUCT SPECIFICATIONS

Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Purity/Purification	Rabbit antiserum.
Sequence Length	201
Applicable Applications for anti-RAB5A antibody	IHC (Immunohistochemistry), ICC (Immunocytochemistry), IF (Immunofluorescence), WB (Western Blot)
Conjugate	ATTO 488
Immunogen	C-terminal peptide from human Rab4
Gene ID	5867
Acession Number	NP_004569.2
Swiss Prot	P02338
Storage Buffer	Rabbit Antiserum
Certificate of Analysis	0.5ug/ml was sufficient for detection of Rab4 in 10ug of heat shocked HeLa cell lysate by colorimetric immunoblot analysis using Goat anti-rabbit IgG: HRP as the secondary antibody.
Reasearch Area(s)	Cell signaling| Oraganelle Markers| Neuroscience| Cell Structure|Pre-Synaptic Markers.
Cellular Localization	Membrane|Cytoplasm
Preparation and Storage	-20 degree C

IMAGES

ICC (Immunocytochemistry)
Immunocytochemistry/Immunofluorescence analysis using Rabbit Anti-Rab4 Polyclonal Antibody (SPC-141). Tissue: HaCaT cells. Species: Human. Fixation: Cold 100% methanol at -20C for 10 minutes. Primary Antibody: Rabbit Anti-Rab4 Polyclonal Antibody (SPC-141) at 1:100 for 12 hours at 4 degree C. Secondary Antibody: FITC Goat Anti-Rabbit at 1:50 for 1-2 hours at RT in dark. Localization: String nuclear and cytoplasmic staining.

IHC (Immunohiostchemistry)
Immunohistochemistry analysis using Rabbit Anti-Rab4 Polyclonal Antibody (SPC-141). Tissue: backskin. Species: Mouse. Fixation: Bouin's Fixative Solution. Primary Antibody: Rabbit Anti-Rab4 Polyclonal Antibody (SPC-141) at 1:100 for 1 hour at RT. Secondary Antibody: FITC Goat Anti-Rabbit (green) at 1:50 for 1 hour at RT. Localization: Epidermis (cell-cell border and cytoplasmic), hair follicles and muscle.

WB (Western Blot)
Western blot analysis of Human Cervical cancer cell line (HeLa) lysate showing detection of Rab4 protein using Rabbit Anti-Rab4 Polyclonal Antibody (SPC-141). Load: 15 ugprotein. Block: 1.5% BSA for 30 minutes at RT. Primary Antibody: Rabbit Anti-Rab4 Polyclonal Antibody (SPC-141) at 1:1000 for 2 hours at RT. Secondary Antibody: Donkey Anti-Rabbit IgG: HRP for 1 hour at RT.

ADDITIONAL INFORMATION

Related Product Information for anti-RAB5A antibody	**Background Info:** Detects ~26kDa. **Scientific Background:** Rab4 is a 25kDa member of the Rab family of small guanosine triphosphatases (GTPases), Ras superfamily. Rab GTPases are central regulators of membrane trafficking in the eukaryotic cell. Their regulatory capacity depends on their ability to cycle between the GDP -bound inactive and GTP-bound active states. This conversion is regulated by GDP/GTP exchange factors (GEPs), GDP dissociation inhibitors (GDIs) and GTPase-activating proteins (GAPs) (1, 2). Activation of a Rab protein is coupled to its association with intracellular membranes, allowing it to recruit downstream effector proteins to the cytoplasmic surface of a sub-cellular compartment (3). Through these proteins, Rab GTPases regulate vesicle formation, actin- and tubulin-dependent vesicle movement, and membrane fusion(1). Rab proteins contain conserved regions involved in guanine-nucleotide binding, and hyper-variable COHO-terminal domains with a cysteine motif implicated in sub-cellular targeting. Post-translational modification of the cysteine motif with one or two geranylgeranyl groups is essential for the membrane association and correct intracellular localization of Rab proteins (3). Each Rab shows a characteristic sub-cellular distribution (4). In particular, over-expression of Rab4 causes a redistribution of receptors on plasma membrane versus endocytic compartments. The presence of excessive Rab4 leads to the accumulation of tranferrin receptors in non-acidic, post-endosomal recycling vesicles considered an intermediate compartment between endosomes and plasma membranes. Rab4 also plays a role in the translocation of glucose transporter (Glu4) in adipocytes in response to insulin (5). Mediating the association of Rab4 with transferring receptor-containing early endosomes takes place through the geranylgeranyl groups at its carboxyl-terminus. Membrane association is also cell cycle dependent, as phosphorylation at its c-terminal cdc2 kinase consensus sequence in mitotic cells leads to dissociation of Rab4 into the cytosol (6).
Product Categories/Family for anti-RAB5A antibody	Cell Signaling; Neuroscience; Organelle Markers
References	1. Stenmark H., and Olkkonen V.M. (2001) Genome Biol. 2: 3007.1-3007.7. 2. Takai Y., et al. (2001) Physiol. Rev. 8:, 153-208. 3. Ali B.R., et al. (2004) J. Cell Sci. 117: 6401-6412. 4. Zerial M., and McBride H. (2001) Nat. Rev. Mol. Cell Biol. 2: 107-117. 5. Cormont M., et al. (1996) Mol Cell Biology. 16: 6879-6886. 6. Ayad N., Hull M., and Mellman I. (1997) EMBO 16: 4497-4507. 7. Van der Sluijs, P. et l. (1992) The EMBO Journal 11(12), 4379-4389. 1. Ballmer-Hofer, K., Andersson, A.E., Ratcliffe, L.E. and Berger, P. (2011). Neuropilin-1 promotes VEGFR-2 trafficking through Rab11 vesicles thereby specifying signal output. Blood. 118 (3), 816-826. doi: 10.1182/blood-2011-01-328773.

NCBI AND UNIPROT INFORMATION

NCBI GeneID	5868
UniProt Accession #	P20339; Q6FI44; B4DJA5
Molecular Weight	22,178 Da
NCBI Official Synonym Full Names	RAB5A, member RAS oncogene family
NCBI Official Symbol	RAB5A
NCBI Official Synonym Symbols	RAB5
NCBI Protein Information	ras-related protein Rab-5A
UniProt Protein Name	Ras-related protein Rab-5A

UniProt Gene Name	**RAB5A**
UniProt Synonym Gene Names	RAB5
UniProt Entry Name	RAB5A_HUMAN

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

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