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ProductInformation

Anti- Rab7
produced in rabbit, affinity Isolated antibody

Catalog Number **R4779**

Product Description

Anti- Rab7 is developed in rabbit using a synthetic peptide corresponding to amino acid residues 163-177 of human Rab7 with C-terminal added cysteine, conjugated to KLH, as immunogen. The corresponding sequence is identical in rat, mouse and dog. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti- Rab7 recognizes human, mouse and rat Rab7. Applications include immunoblotting (~23 kDa) and immunofluorescence. Detection of the Rab7 band by immunoblotting is specifically inhibited by the immunizing peptide.

Rab7 is a member of the Rab family of small guanosine triphosphatases (GTPases). The Rab family belongs to the Ras superfamily of small GTPases. Rab GTPases are central regulators of membrane trafficking between the different subcellular compartments of the eukaryotic cell. Their regulatory capacity depends on their ability to cycle between the GDP-bound inactive and GTP-bound active states. Conversion from one state to the other 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 subcellular compartment.[3] Through their effector 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 hypervariable COOH-terminal domains with a cysteine motif, implicated in subcellular 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 protein shows a characteristic subcellular distribution.[4] Therefore, antibodies to Rab proteins may serve as useful tools for studying subcellular localization and membrane organization.

Rab7 regulates vesicle traffic from early to late endosomes, and from late endosomes to lysosomes. Rab7 is also involved in the maturation of late autophagic vacuoles.[5] Among Rab7 effectors are RILP (Rab-interacting lysosome protein) that controls late endosomal and lysosomal transport by mediating the recruitment of dynein/dynactin motors, Rabring7 (Rab7-interacting ring finger protein), and the hVPS34/p150 complex.[6-9] Anti-Rab7 may be used as a marker for late endosomes.

Reagent

The product is provided as a solution in 0.01 M phosphate buffered saline pH 7.4 containing 15 mM sodium azide as preservative.

Antibody concentration: ~1.0 mg/ml

Precautions and Disclaimer

Due to the sodium azide content a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazardous and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage freeze in working aliquots. Repeated freezing and thawing is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

A working concentration of 2.5-5.0 µg/ml is determined by immunoblotting, using a whole extract of human A431 cells, applying a chemiluminescent detection reagent.

A working concentration of 5-10 µg/ml is determined by indirect immunofluorescence staining of rat NRK and mouse NIH-3T3 cells fixed and permeabilized with 3% paraformaldehyde followed by 0.4% saponin.

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working concentration by titration test.

References

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