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Product Information

Anti-Rab10
produced in rabbit, affinity isolated antibody

Product Number **R8906**

Product Description

Anti-Rab10 is produced in rabbit using as immunogen a synthetic peptide corresponding to a fragment of human Rab10 (GeneID: 10890), conjugated to KLH. The corresponding sequence differs by one amino acid in mouse, rat, bovine, and dog Rab10. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-Rab10 recognizes human, rat, mouse, and dog Rab10 (not tested in other species). The antibody can be used in several immunochemical techniques including immunoblotting (~23 kDa) and immunofluorescence. Detection of the Rab10 band by immunoblotting is specifically inhibited by the immunizing peptide.

Rab10 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 (GEFs), 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.

Rab10 is an evolutionarily conserved, ubiquitously expressed protein, first isolated from Madin-Darby Canine Kidney (MDCK) epithelial cells. It belongs to a subfamily of Rab proteins that includes Rab8 and Rab13. Rab10 is involved in basolateral transport in MDCK cells.[5,6]

Rab10 localizes to the late Golgi in non-polarized cells.[7] During early cell polarization, Rab10 localizes primarily to the Golgi of MDCK cells.[6] However, in fully polarized MDCK cells, Rab10 is associated with common endosomes, accessible to both apical and basolateral recycling pathways.[5]

Anti-Rab10 may be used as a marker of common endosomes.

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody concentration: ~1.0 mg/mL

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards 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 at –20 °C. Repeated freezing and thawing, or storage in “frost-free” freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working antibody concentration of 2-4 μg/mL is recommended using a whole extract of human A431 cells.

Immunoblotting: A working antibody concentration of 1-2 μg/mL is recommended using a whole extract of dog MDCK cells.

Immunoblotting: A working antibody concentration of 5-10 μg/mL is recommended using whole extracts of mouse brain.

Immunofluorescence: a working antibody concentration of 2-5 μg/mL is recommended using rat NRK cells fixed and permeabilized with 4% paraformaldehyde followed by 0.4% saponin.

Note: In order to obtain best results in various techniques and preparations, it is recommended to determine optimal working dilutions by titration.

References

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5. Babbey, C.M. et al., *Mol. Biol. Cell*, **17**, 3156-3175 (2006).
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