

Product Information

Anti-Rab5 antibody, Mouse monoclonal
clone Rab5, purified from hybridoma cell culture

Product Number **R7904**

Product Description

Anti-Rab5 antibody, Mouse monoclonal (mouse IgG3 isotype) is derived from the hybridoma Rab5-65 produced by the fusion of mouse myeloma cells (NS1 cells) and splenocytes from BALB/c mice immunized with a synthetic peptide corresponding to C-terminal region of human Rab5, conjugated to KLH. The isotype is determined using a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents, Product Number ISO2.

Anti-Rab5 antibody, Mouse monoclonal recognizes human, bovine, canine, rat and mouse Rab5, ~24 kDa. The product is useful in ELISA, immunoblotting, and immuno-cytochemistry.

Rab5 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 C-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 shows a characteristic subcellular distribution.⁴ Therefore, antibodies to Rab proteins may serve as useful tools for studying subcellular localization and membrane organization.

Rab5 is ubiquitously expressed in human tissues. It localizes mainly to early endosomes, but is also present on the plasma membrane. Rab5 regulates the fusion between endocytic vesicles and early endosomes, as well as the homotypic fusion between early endosomes.⁵ Among the proteins recruited by the GTP-bound active Rab5 are Rabaptin-5 and EEA1.⁶

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: ~2 mg/ml.

Precautions and Disclaimer

This product is 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

Store at -20 °C in working aliquots. 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 dilution samples should be discarded if not used within 12 hours.

Product Profile

Immunocytochemistry: a working concentration of 5-10 µg/ml is determined using HeLa cells or NIH-3T3 or NRK .

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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4. Zerial, M., and McBride, H., *Nature Rev. Mol. Cell Biol.*, **2**, 107-117 (2001).
5. Sonnichsen, B., et al., *J. Cell Biol.*, **149**, 901-913 (2000).
6. Woodman, P.G., *Traffic*, **1**, 695-701 (2000).

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