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ProductInformation

Monoclonal Anti-Rab9
Clone Rab9-29
produced in mouse, purified immunoglobulin

Catalog Number R5404

Product Description

Monoclonal Anti-Rab9 (mouse IgG1 isotype) is derived from the hybridoma Rab9-29 produced by the fusion of mouse cells (NS1 cells) and splenocytes from BALB/c mice immunized with a synthetic peptide corresponding to amino acids 187-200 of human Rab9, conjugated to KLH. The isotype is determined using a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents, Catalog Number ISO2.

Monoclonal Anti-Rab9 recognizes human, canine, rat, mouse and hamster Rab9 (approx. 23 kDa). The product is useful in ELISA, immunoblotting, immunoprecipitation and immunocytochemistry.

Rab9 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 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.

Rab9 GTPase is localized predominantly to late endosomes and is required for the transport of mannose 6-phosphate receptors (MRPs) from endosomes to the trans-Golgi network (TGN).[5] Rab9 GTPase in its GTP bound conformation binds specifically to an effector protein named p40 that stimulates the transport of mannose 6-phosphate receptors (MPRs) from endosomes to the TGN.[6] Rab9 also interacts with the vesicle cargo selection protein TIP47 (tail-interacting protein of 47 kDa). This interaction is required for Rab9 stability on late endosomes.[7]

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

Due to the sodium azide content a material safety 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, 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

A working concentration of 1-2 µg/ml is determined by immunoblotting, using total cell extract of HeLa cells.

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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3. Ali, B.R., et al., *J. Cell Sci*., **117**, 6401-6412 (2004).
4. Zerial, M., and McBride, H., *Nat. Rev. Mol. Cell Biol.*, **2**, 107-117 (2001).
5. Chen, L., et al., *J. Biol. Chem*., **279**, 40204-40208 (2004).
6. Diaz, E., et al., *J. Cell Biol*., **138**, 283-290 (1997).
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