Datasheet

Anti-Rab7 Antibody, Mouse Monoclonal

Clone Rab7-117, purified from hybridoma cell culture

R8779

Product Description

Monoclonal Anti-Rab7 (mouse IgG2b isotype) is derived from the hybridoma Rab7-117 produced by the fusion of mouse myeloma cells (NS1 cells) and splenocytes from BALB/c mice immunized with a synthetic peptide corresponding to a fragment of human Rab7. The isotype is determined using a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents (Cat. No. ISO2).

Monoclonal Anti-Rab7 recognizes human, monkey, bovine, rat, mouse, and chicken Rab7. The antibody may be used in ELISA, immunoblotting (~ 24 kDa), immunoprecipitation, and immunocytochemistry.

Rab7 is a member of the Rab family of small guanosine triphosphatases (GTPases). This family belongs to the Ras superfamily of small GTPases. Rab GTPases are central regulators of membrane trafficking between different subcellular compartments in eukaryotic cells. The regulatory capacity of Rab GTPases 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 Rab proteins is coupled to their association with intracellular membranes, allowing them 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]

Reagent

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

Antibody Concentration: ~2 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. Repeated freezing and thawing is not recommended. Storage in "frost-free" freezers is also 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

Immunoblotting: a working antibody concentration of 0.5-1 µg/mL is recommended using HeLa total cell extract.

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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