3050 Spruce Street, St. Louis, MO 63103 USA
Tel: (800) 521-8956 (314) 771-5765 Fax: (800) 325-5052 (314) 771-5757
email: techservice@sial.com sigma-aldrich.com

Product Information

Anti-Rab18 (C-terminal)
produced in rabbit, affinity isolated antibody

Product Number **SAB4200174**

Product Description

Anti-Rab18 (C-terminal) is produced in rabbit using as the immunogen a synthetic peptide corresponding to a sequence at the C-terminal of human Rab18 (GeneID: 22931), conjugated to KLH. The corresponding sequence is identical in mouse and monkey and differs by one amino acid in rat, bovine, and canine Rab18. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-Rab18 (C-terminal) recognizes human, mouse, and rat Rab18. The antibody may be used in several immunochemical techniques including immunoblotting (~23 kDa), immunoprecipitation and immuno-fluorescence. Detection of the Rab18 band by immunoblotting is specifically inhibited by the immunizing peptide. Additional bands of higher MW may appear in some extract preparations.

Rab18 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 different subcellular compartments of eukaryotic cells. 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. 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. Each Rab protein shows a characteristic subcellular distribution. Therefore, antibodies to Rab proteins may serve as useful tools for studying subcellular localization and membrane organization.[3-4]

Rab18 is involved in retrograde Golgi-ER trafficking. It localizes to lipid droplets and induces the association of the lipid droplets with ER membranes. Anti-Rab18 may thus be used as a marker to follow dynamics of lipid droplets in living cells.[5-8]

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

Store at –20 °C. 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. Discard working dilutions if not used within 12 hours.

Product Profile

Immunoblotting: a working antibody concentration of 2.5-5.0 μg/mL is recommended using whole extracts of mouse MM3MG cells.

Immunoprecipitation: a working antibody amount of 2.5-5.0 μg is recommended using lysates of human PC3 cells.

Immunofluorescence: a working antibody concentration of 2.5-5.0 μg/mL is recommended using rat NRK cells.

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

References

1. Stenmark, H., and Olkkonen, V.M., *Genome Biol.*, **2**, 3007.1-3007.7 (2001).
2. Takai, Y., et al., *Physiol. Rev*., **81**, 153-208 (2001).
3. Ali, B.R., et al., *J. Cell Sci*., **117**, 6401-6412 (2004).
4. Zerial, M., and McBride, H., *Nature Rev. Mol. Cell Biol.*, **2**, 107-117 (2001).
5. Lutcke, A., et al., *J. Cell Sci*., **107**, 3437-3448 (1994).
6. Dejgaard, S.Y., et al., *J. Cell Sci*., **121**, 2768-2781 (2008).
7. Ozeki, S., et al., *J. Cell Sci*., **118**, 2601-2611 (2005).
8. Martin, S., and Parton, R.G., *Methods Enzymol*., **438**, 109-129 (2008).

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