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Product Information

Monoclonal Anti-Rab25
clone Rab25-5, produced in mouse
affinity isolated antibody

Product Number **SAB4200220**

Product Description

Monoclonal Anti-Rab25 (mouse IgG1 isotype) is derived from the hybridoma Rab25-5 produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice immunized with a synthetic peptide corresponding to a fragment of human Rab25 (GeneID: 57111), conjugated to KLH. The corresponding sequence differs by a single amino acid in rat and pig, and by 2 amino acids in mouse, dog, and bovine Rab25. The isotype is determined by ELISA using Mouse Monoclonal Antibody Isotyping Reagents, Product Number ISO2. The antibody is affinity-purified from culture supernatant of hybridoma cells grown in a bioreactor, using the immunizing peptide immobilized on agarose.

Monoclonal Anti-Rab25 recognizes human Rab25. The antibody may be used in various immunochemical techniques including immunoblotting (~25 kDa). Detection of the Rab25 band by immunoblotting is specifically inhibited by the immunizing peptide.

Rab25 is a member of the Rab family of small guanosine triphosphatases (GTPases) restricted to an epithelial distribution.[1] 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).[2,3]

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.[5] Through their effector proteins, Rab GTPases regulate vesicle formation, actin- and tubulin-dependent vesicle movement, and membrane fusion.[2]

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.[4] Each Rab protein shows a characteristic subcellular distribution.[5] Therefore, antibodies to Rab proteins may serve as useful tools for studying subcellular localization and membrane organization.

Rab25 is associated with the apical recycling system of epithelial cells.[6] Rab25 has been implicated in the progression and aggressiveness of ovarian and breast cancers.[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: ~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 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

Immunoblotting: a working concentration of 2-4 μg/mL is recommended using whole extracts of HEK-293T cells overexpressing human Rab25.

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

References

1. Goldenring, J.R., et al., *J. Biol. Chem.*, **268**, 18419-18422 (1993).
2. Stenmark, H., and Olkkonen, V.M., *Genome Biol.*, **2**, 3007.1-3007.7 (2001).
3. Takai, Y., et al., *Physiol. Rev*., **81**, 153-208 (2001).
4. Ali, B.R., et al., *J. Cell Sci*., **117**, 6401-6412 (2004).
5. Zerial, M., and McBride, H., *Nature Rev. Mol. Cell Biol.*, **2**, 107-117 (2001).
6. Wang, X., et al., *J. Biol. Chem.*, **275**, 29138-29146 (2000).
7. Caswell, P.T., et al., *Develop. Cell*, **13**, 496-510 (2007).

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