3050 Spruce Street
Saint Louis, Missouri 63103 USA
Telephone 800-325-5832 • (314) 771-5765
Fax (314) 286-7828
email: techserv@sial.com
sigma-aldrich.com

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ProductInformation

Anti-Rab5
produced in rabbit, affinity isolated antibody

Catalog Number **R4654**

Product Description

Anti-Rab5 is produced in rabbit using a synthetic peptide corresponding to amino acid residues 176-188 of human Rab5 with C-terminal added cysteine, conjugated to KLH, as immunogen. The corresponding sequence is identical in rat, mouse, and dog. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-Rab5 recognizes human, mouse and rat Rab5. Applications include immunoblotting (~24 kDa) and immunofluorescence. Detection of the Rab5 band by immunoblotting is specifically inhibited by the immunizing peptide.

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 (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 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 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. It 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] Anti-Rab5 may be used as an early endosome marker.

Reagent

The antibody is supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as preservative.

Antibody concentration: ~1.0 mg/mL

Precautions and Disclaimer

Due to the sodium azide content, a material safety data 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 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 2.5-5 µg/mL is recommended, using a whole extract of human A431 cells and a chemiluminescent detection reagent.

Indirect immunofluorescence: a working concentration of 5-10 µg/mL is recommended, using rat NRK and mouse NIH-3T3 cells.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining the optimal working dilutions by titration.

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. Sonnichsen, B., et al., J. Cell Biol., **149**, 901-913 (2000).
6. Woodman, P.G., Traffic, **1**, 695-701 (2000).

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