

Product Information

Monoclonal Anti-RhoE

Clone 4

Purified Mouse Immunoglobulin

Product Number **R 6153**

Product Description

Monoclonal Anti-RhoE (mouse IgG₁ isotype) is derived from the hybridoma clone 4 produced by the fusion of mouse myeloma cells (SP2/0 cells) and splenocytes from BALB/c mice immunized with purified recombinant full length RhoE.¹ The isotype is determined using Sigma ImmunoType™ Kit (Sigma Product No. ISO-1) and by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents (Sigma Product No. ISO-2).

The antibody recognizes human and mouse RhoE (approx. 29 kDa).¹ The product is useful in immunoblotting¹ and immunocytochemistry.¹ The product cross reacts weakly with Rnd1.

The Rho family of proteins mediates cytoskeleton organization and cell motility responses. This family of proteins contains twenty different members divided into five groups, the Rho-like, Rac-like, Cdc42-like, Rnd and RhoBTB subfamilies. Rho proteins have GTPase activity and bind GTP in their active form and GDP in their inactive form. In their active form they interact with downstream proteins. However, the Rnd subfamily of proteins containing the Rnd1, Rnd2 and RhoE(Rnd3), binds GTP but not GDP and has no GTPase activity.¹⁻⁴ While Rho proteins are required for stress fiber formation in cultured fibroblasts, epithelial and endothelial cells, overexpression of RhoE(Rnd3) or Rnd1 in the same cells may cause an opposite effect (i.e. decrease in stress fiber). Thus, the RhoE(Rnd3) protein may act as an antagonist for the Rho proteins either by directly binding to Rho or to other downstream proteins. For example, RhoE(Rnd3) interacts with ROCK I thus inhibiting stress fiber formation and phosphorylation of the ROCK I downstream target MLCP (myosin light chain phosphatase). Rnd1 and Rnd2 are highly expressed in the brain while RhoE(Rnd3) is expressed at low levels and is up regulated by Ras-Raf signaling.¹⁻⁴

Monoclonal antibodies specific for RhoE(Rnd3) are an important tool for studying cell motility and cytoskeleton organization.

Reagent

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

Antibody Concentration: Approx. 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 is not recommended. 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 4-8 µg/mL is determined by immunoblotting, using HMVEC total cell extract.

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working dilution by titration test.

References

1. Riento, K., et al., Mol. Cell. Biol., **23**, 4219-4229 (2003).
2. Ridely, A.J., et al., Science, **302**, 1704-1709 (2003).

3. Ridely, A.J., Breast Cancer Res. Treat., **84**, 9-13 (2004).

4. Burrige, K., et al., Cell, **116**, 167-179 (2004)

EK/AH/PHC 08/04

Sigma brand products are sold through Sigma-Aldrich, Inc.

Sigma-Aldrich, Inc. warrants that its products conform to the information contained in this and other Sigma-Aldrich publications. Purchaser must determine the suitability of the product(s) for their particular use. Additional terms and conditions may apply. Please see reverse side of the invoice or packing slip.