

Product Information

Anti-Rit2

Developed in Rabbit, Fractionated Antibody

Product Number **R 1777**

Product Description

Anti-Rit2 (Ras-like protein in neurons, previously designated as Rin) was developed in rabbit using as immunogen a recombinant His-tagged human Rit2 protein. The serum is purified by ammonium sulfate precipitation and then dialyzed to prevent exposure to extreme pH changes. Anti-Rit2 recognizes human recombinant and native Rit2 protein (approximately 25 kDa).¹ It is used in immunoblotting applications. The antibody cross-reacts slightly with other Ras proteins.

The Ras super-family comprises a group of structurally related low molecular weight (20-30 kDa) proteins, which bind GTP or GDP and exhibit a low intrinsic GTPase activity. They are involved in signal transduction and the regulation of a variety of cellular processes, including cell growth, transformation, differentiation and morphogenesis, nucleocytoplasmic transport, and apoptosis. Ras proteins promote cancer by disrupting the normal controls of cell proliferation and differentiation. All Ras subgroups (Ras, Rho, Rab, Ran, and ADP-ribosylation factor) contain five highly conserved domains (G1-G5) and act as molecular switches by alternating between an active GTP-bound form and an inactive GDP-bound form.

Rit2 (Ras-like protein in neurons) and Rit1 (Ras-like protein in tissues) share 50% homology to Ras. Both contain the five highly conserved domains (G1-G5), bind GTP *in vitro*, and are membrane-associated. However, both lack a CAAX box and their mechanism of membrane association is distinct from the typical Ras protein. Rit is a non-lipid-modified Ras-related protein, which lacks any known recognition signal for C-terminal lipidation. Rit1 and Rit2 share a unique effector domain (DPTIEDAYK) that is 100% conserved between murine and human proteins. Rit1 is expressed ubiquitously, but Rit2 is expressed only in subsets of neurons and may be involved in calcium-mediated signaling within neurons. Rit uses novel effector pathways to regulate proliferation and transformation. It has been suggested that Rit1 and Rit2 play important role in the regulation of signaling pathways, distinct from those controlled by Ras. Ras and associated pathways have also been

implicated in the development and maintenance of the mammalian retina.¹⁻³

Reagent

Polyclonal Anti-Rit2 is supplied as purified rabbit immunoglobulin at approx. 100 µg in 100 µl sterile-filtered phosphate buffered saline, pH 7.3, with 0.08% sodium azide.

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

Store at -20 °C. For extended storage, freeze in working aliquots. Avoid repeated freezing and thawing to prevent denaturing of the antibody. Do not store in a frost-free freezer. The antibody is stable for at least 12 months when stored appropriately.

Product Profile

A recommended working concentration of 5 to 10 µg/ml is determined by immunoblotting using HEK293 cells transfected with His-tagged recombinant Rit2 protein.

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

References

1. Lee, C.H., et al., Rin, a neuron-specific and calmodulin-binding small G-protein, and Rit define a novel subfamily of ras proteins. *J. Neurosci.*, **16**, 6784-6794 (1996).
2. Shao, H., et al., Biochemical characterization of the Ras-related GTPases Rit and Rin. *Arch. Biochem. Biophys.*, **371**, 207-219, (1999).
3. Rusyn, E.V., et al., Rit, a non-lipid-modified Ras-related protein, transforms NIH3T3 cells. *Oncogene*, **41**, 4685-4694 (2000).

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.