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Antibodies to Ras homolog enriched in striatum (Rhes)

Ras homolog enriched in striatum (Rhes) antibodies. Catalog # Rhes-101AP, FITC-Rhes, P-Rhes, PC-Rhes.

Accession # AAH36988 and Alternate Nomenclature: GTP-binding protein Rhes, RASD family, member 2, Rasd2, TEM2, AU045414.

Rhes, Ras homolog enriched in striatum, belongs to the RASD subfamily of the Ras-related GTP-binding protein superfamily. By responding to extracellular signals, these proteins regulate intracellular signaling pathways, thereby controlling essential cellular functions such as cell growth, gene transcription, and cytoskeleton organization and also pathways involved in synaptic plasticity, learning and memory (1). Rhes, located on mouse chromosome 8, is a product of thyroid hormone-regulated gene during brain development and it regulates signal transduction from G protein-coupled receptors (2). It is implicated in cAMP/PKA signaling pathway- Rhes has been shown to inhibit the cAMP/PKA pathway by thyroid-stimulating hormone (3). Furthermore, Rhes modulates dopamine signaling in the striatum- It is essential for correct dopamine-mediated GTP binding (4).

Studies investigating the role of Rhes have shown that mice that are deficient in this protein were smaller than the wild type mice (1). These mice also showed behavioral abnormalities such as gender-dependent increase in anxiety levels and lack of clear motor coordination. Such studies also showed that absence of Rhes modulated cAMP/PKA signaling in projection neurons by increasing golf protein levels (2). Rhes is expressed in brain areas that receive dopaminergic input, such as striatum. Therefore, its mRNA expression is controlled by dopamine and its expression is reduced under conditions of dopamine supersensitivity (5). Rhes has also been shown to bind huntingtin and mutant huntingtin protein (6). Expansion of huntingtin is usually seen in patients with Huntington's disease. Rhes is approximately a 70kDa protein (6), higher than the predicted MW of 38kDa (317 amino acids).

The Rhes antibodies were generated using peptide corresponding to mouse Rhes protein. Rhes antibodies are affinity purified over immobilized antigen based affinity chromatography, and the purified immunoglobulins are stabilized in antibody stabilization buffer. FabGennix Int. Inc. will provide limited quantities of antigenic blocking protein for competition assays involving Rhes antibody. Antibodies to Rhes (Rhes-101AP) will label ~70kDa protein in Western blot positive control for Rhes and several other tissues. FabGennix Inc. will conjugate this and other antibodies from its catalog to either secondary enzymes (alk-Pase or HRP) or fluorescent probes at a nominal cost upon request. FabGennix also provides custom antibody production services for researchers that are looking for high affinity mono and polyclonal antibodies in various species. We specialize in making application specific antibodies that are useful in IHC, confocal and other applications where native antigen is detected. For a complete listing of all FabGennix antibodies please visit www.fabgennix.com.

Catalog #	Host Species	Nature	Cross reactivity	Quantity	Volume
Rhes-101 AP	Rabbit	Affinity purified Rhes antibodies	M, r, monk, h, others	100 ug	200ul
FITC- Rhes	Rabbit	FITC-conjugated Rhes antibodies	M, r, monk, h, others	100ug	200ul
P-Rhes	n/a	Antigenic blocking peptide for Rhes -101AP	n/a	250 ug	100ul
PC- Rhes	n/a	Western blotting positive control for Rhes	n/a	For 5 appl	Inquire

R = rat; M = mouse; H = human; C = chicken; monk = monkey ; * not all variants are labeled equally

Immunogen:

Synthetic peptides corresponding to unique epitope on Rhes. The peptide sequence was selected from C-terminal, amino acids 270-317. The Rhes peptide was covalently modified post-synthetically to achieve desired antigenicity.

Concentration:

Rhes -101AP: IgG concentration 0.64-0.72 mg/ml in antibody stabilization buffer.

Applications:

Antibody Rhes -101AP is ideal for WB and ELISA applications, other applications have not been tested. The species cross reactivity for these antibodies have not been examined fully. The dilutions for this antibody is for reference only, investigators are expected to determine the optimal conditions for specific assay. WB: > 1:500; IMM & i.p pull-down assays: n.d; IHC n.d. ELISA <1:10,000. Application of this antibody in protocols not listed here does not necessarily exclude its use in such procedures.

Reactivity:

This antibody detects a single band of approximately 70kDa in PC-Rhes samples.

Protocols:

Standard protocol for various applications (WB; IMM and IHC) of this antibody is provided with the product specification sheet, however, FabGennix Inc. strongly recommends investigators to optimize conditions for use of this antibody in their laboratories.

Form/Storage:

The antiserum is supplied in antibody stabilization buffer. The affinity-purified antibodies are isolated on immobilized antigen-affinity column and supplied as stabilized product. Store at -20°C for long-term storage. FabGennix Inc. does not recommend storage of very dilute antibody solutions unless they are prepared in specially formulated multi use antibody dilution buffer (Cat # DiluOBuffer). Working solutions of antibodies in DiluOBuffer should be filtered through 0.45um filter after every use for long-term storage.

Notes: Briefly centrifuge to collect liquid, heat or boil PC-Rhes tube for 1-2 minutes to dissolve any precipitate before use. This product is "ready-to-use" for electrophoresis. After thawing store at room temperature, Repeated freezing and thawing may result in appearance of higher MW immunoreactive bands.

New Reagents: Now you can recycle your western blots (nitrocellulose, supported membranes and PVDF membranes) by using our StripOBuffer (Cat FGI-1989). Each stripping is guaranteed to give better signal (up to 8 stripping). No strong pungent smell of reducing agents or heating required. Block in 5X diluOBuffer and you are ready for blotting with a new antibody

References:

1. Wasyluk B, Hangman J, Gutierrez-Hartmann A. Ets transcription factors: nuclear effectors of the Ras-MAP-Kinase signaling pathway. Trends Biochem Sci. 1998; 23:213-216.
2. Vargiu P, et al. The small GTP-binding protein, Rhes, regulates signal transduction from G protein-coupled receptors. Oncogene. 15 January 2004; 23(2):559-568.
3. Bambilla R, et al. A role for the Ras signaling pathway in synaptic transmission and long-term memory. Nature. 1999; 390:281-286.
4. Errico F, et al. The GTP-binding protein Rhes modulates dopamine signaling in striatal medium spiny neurons. Mol Cell Neurosci. February 2008; 37(2):335-345.
5. Harrison LM, LaHoste GJ. Rhes, the Ras homolog enriched in striatum, is reduced under conditions of dopamine supersensitivity. Neuroscience. 2006; 137(2):483-492.
6. Subramaniam S, et al. Rhes, a striatal specific protein, mediates mutant-huntingtin cytotoxicity. Science. 5 June 2009; 324:1327-1330.

Western Blot of Rhes. The Rhes antibody (Cat # Rhes-101AP) at 1:500 in diluOBuffer was probed with PC-Rhes sample. MW of Rhes is approximately 70kDa.

* For users who may require large amounts of Rhes-101AP, please enquire about bulk material discounts.
This Product is for Research Use Only and is NOT intended for use in humans or clinical diagnosis.

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