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RHOT1 Antibody

Catalog # ASC11870

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	Q8IXI2
Other Accession	NP_001028740, 75750480
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	70784
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	RHOT1 antibody can be used for detection of RHOT1 by Western blot at 1 - 2 g/ml. Antibody can also be used for immunohistochemistry starting at 5 g/mL. For immunofluorescence start at 20 g/mL.

Additional Information

Gene ID	55288
Other Names	Mitochondrial Rho GTPase 1, MIRO-1, hMiro-1, 3.6.5.-, Rac-GTP-binding protein-like protein, Ras homolog gene family member T1, RHOT1, ARHT1
Target/Specificity	RHOT1; RHOT1 antibody is human, mouse and rat reactive. At least three isoforms of RHOT1 are known to exist; this antibody will detect all three isoforms.
Reconstitution & Storage	RHOT1 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year.
Precautions	RHOT1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	RHOT1
Synonyms	ARHT1
Function	Atypical mitochondrial nucleoside-triphosphatase (NTPase) involved in mitochondrial trafficking (PubMed:12482879, PubMed:16630562, PubMed:22396657, PubMed:30513825). Probably involved in control of anterograde transport of mitochondria and their subcellular distribution (PubMed:12482879, PubMed:16630562, PubMed:22396657). Promotes mitochondrial fission during high calcium conditions (PubMed:27716788). Can hydrolyze GTP, ATP and UTP (PubMed:30513825).

Cellular Location	Mitochondrion outer membrane; Single-pass type IV membrane protein. Note=Colocalizes with MGARP and RHOT2 at the mitochondria
Tissue Location	Ubiquitously expressed. Expressed at high level in heart and skeletal muscle.

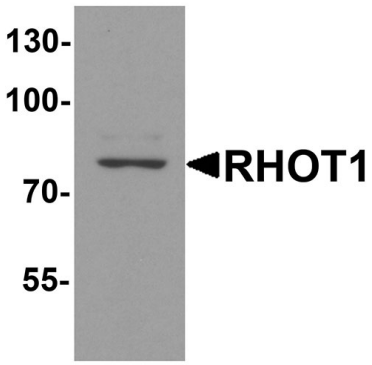
Background

The Ras homolog family member T1 (RHOT) is an atypical Rho Ca2+-binding GTPase that localizes to the mitochondria (1). RHOT1, the related protein RHOT2, the adaptor protein Milton, and the PTEN induced putative kinase 1 (PINK1), form a complex that is involved in axonal transport of mitochondria (2,3). Both PINK1 and Parkin target RHOT1 for phosphorylation and degradation, causing the arrest of mitochondrial motility (4).

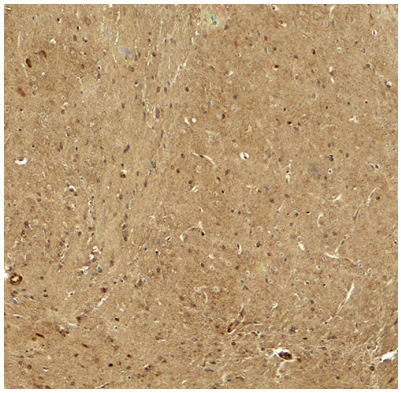
References

Fransson A, Ruusala A, and Aspenstrom P. Atypical Rho GTPases have roles in mitochondrial homeostasis and apoptosis. J. Biol. Chem. 2003; 278:6495-502.
Macaskill AF, Brickley K, Stephenson FA, et al. GTPase dependent recruitment of Grif-1 by Miro1 regulates mitochondrial trafficking in hippocampal neurons. Mol. Cell. Neurosci. 2009;40:301–12.
Weihofen A, Thomas KJ, Ostaszewski B, et al. Pink1 forms a multi-protein complex with Miro and Milton, linking Pink1 function to mitochondrial trafficking. Biochemistry 2009; 48:2045-54.
Wang X, Winter D, Ashrafi G, et al. PINK1 and Parkin target Miro for phosphorylation and degradation to arrest mitochondrial motility. Cell 2011; 147:893-906.

Images

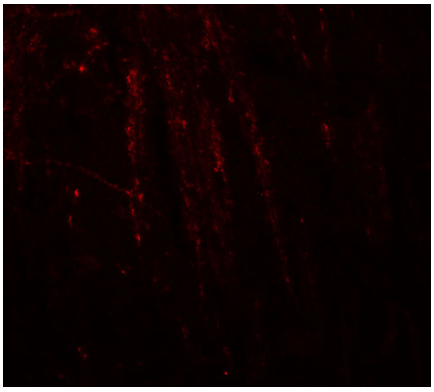


Western blot analysis of RHOT1 in rat brain tissue lysate with RHOT1 antibody at 1 µg/ml.



Immunohistochemistry of RHOT in mouse brain tissue with RHOT antibody at 5 µg/ml.

Immunofluorescence of RHOT in mouse brain tissue with RHOT antibody at 20 µg/ml.



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