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FHIT Antibody

Catalog # ASC11691

Product Information

Application	WB, IF, E
Primary Accession	P49789
Other Accession	NP_002003, 4503719
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	16858
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	FHIT antibody can be used for detection of FHIT by Western blot at 1 - 2 g/ml.

Additional Information

Gene ID	2272
Other Names	Bis(5'-adenosyl)-triphosphatase, 3.6.1.29, AP3A hydrolase, AP3Aase, Diadenosine 5', 5'''-P1, P3-triphosphate hydrolase, Dinucleosidetriphosphatase, Fragile histidine triad protein, FHIT
Target/Specificity	FHIT; FHIT antibody is human and mouse reactive.
Reconstitution & Storage	FHIT antibody can be stored at 4℃ for three months and -20℃, stable for up to one year.
Precautions	FHIT Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	FHIT
Function	Possesses dinucleoside triphosphate hydrolase activity (PubMed: 12574506, PubMed:15182206, PubMed:8794732, PubMed:9323207, PubMed:9543008, PubMed:9576908). Cleaves P(1)-P(3)-bis(5'-adenosyl) triphosphate (Ap3A) to yield AMP and ADP (PubMed:12574506, PubMed:15182206, PubMed:8794732, PubMed:9323207, PubMed:9543008, PubMed:9576908). Can also hydrolyze P(1)-P(4)-bis(5'-adenosyl) tetraphosphate (Ap4A), but has extremely low activity with ATP (PubMed:8794732). Exhibits adenylylsulfatase activity, hydrolyzing adenosine 5'-phosphosulfate to yield AMP and sulfate (PubMed:18694747). Exhibits adenosine 5'-monophosphoramidase activity, hydrolyzing purine nucleotide phosphoramidates with a single phosphate group such as adenosine 5'monophosphoramidate (AMP-NH2) to yield AMP

	and NH2 (PubMed:18694747). Exhibits adenylylsulfate-ammonia adenylyltransferase, catalyzing the ammonolysis of adenosine 5'-phosphosulfate resulting in the formation of adenosine 5'- phosphoramidate (PubMed:26181368). Also catalyzes the ammonolysis of adenosine 5-phosphorofluoridate and diadenosine triphosphate (PubMed:26181368). Modulates transcriptional activation by CTNNB1 and thereby contributes to regulate the expression of genes essential for cell proliferation and survival, such as CCND1 and BIRC5 (PubMed:18077326). Plays a role in the induction of apoptosis via SRC and AKT1 signaling pathways (PubMed:16407838). Inhibits MDM2-mediated proteasomal degradation of p53/TP53 and thereby plays a role in p53/TP53-mediated apoptosis (PubMed:15313915). Induction of apoptosis depends on the ability of FHIT to bind P(1)-P(3)-bis(5'-adenosyl) triphosphate or related compounds, but does not require its catalytic activity, it may in part come from the mitochondrial form, which sensitizes the low-affinity Ca(2+) transporters, enhancing mitochondrial calcium uptake (PubMed:12574506, PubMed:19622739). Functions as a tumor suppressor (By similarity).
Cellular Location	Cytoplasm. Mitochondrion. Nucleus
Tissue Location	Low levels expressed in all tissues tested. Phospho-FHIT observed in liver and kidney, but not in brain and lung Phospho-FHIT undetected in all tested human tumor cell lines

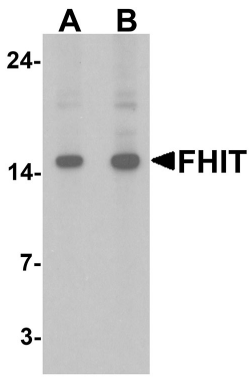
Background

FHIT is member of the histidine triad gene family and is a diadenosine involved in purine metabolism (1). FHIT is also thought to be a tumor suppressor gene and is involved in multiple apoptotic pathways (1,2). The FHIT gene encompasses the common fragile site FRA3B on chromosome 3, where carcinogen-induced damage can lead to translocations and aberrant transcripts of this gene (3). Aberrant transcripts from this gene have been found in multiple carcinomas (4).

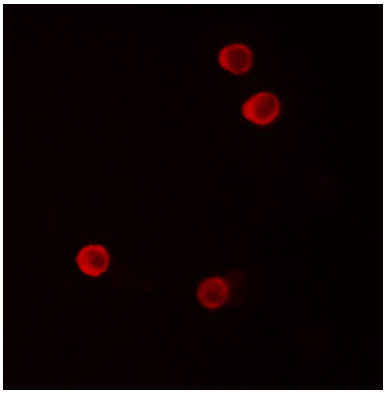
References

Barnes LD, Garrison PN, Siprashvili Z, et al. Fhit, a putative tumor suppressor in humans, is a dinucleotide 5',5'''-P1,P3-triphosphate hydrolase. Biochemistry 1996; 35:11529-35.
Wali A. FHIT: doubts are clear now. ScientificWorldJournal 2010; 10:1142-51.
Ohta M, Inoue H, Cotticelli MG, et al. The FHIT gene, spanning the chromosome 3p14.2 fragile site and renal carcinoma-associated t(3;8) breakpoint, is abnormal in digestive tract cancers. Cell 1996; 84:587-97.
Drusco A, Pekarsky Y, Costinean S, et al. Common fragile site tumor suppressor genes and corresponding mouse models of cancer. J. Biomed. Biotechnol.2011; Epub 2010 Dec 29.

Images



Western blot analysis of FHIT in HeLa cell lysate with FHIT antibody at (A) 1 and (B) 2 µg/ml.



Immunofluorescence of FHIT in HeLa cells with FHIT antibody at 5 µg/mL.