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THEM4 Antibody

Catalog # ASC10927

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	Q5T1C6
Other Accession	NP_444283, 76159293
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	27130
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	THEM4 antibody can be used for detection of THEM4 by Western blot at 1 - 2 g/mL. Antibody can also be used for immunohistochemistry starting at 2.5 g/mL. For immunofluorescence start at 20 g/mL.

Additional Information

Gene ID	117145
Other Names	Acyl-coenzyme A thioesterase THEM4, Acyl-CoA thioesterase THEM4, 3.1.2.2, Carboxyl-terminal modulator protein, Thioesterase superfamily member 4, THEM4, CTMP
Target/Specificity	THEM4; The additional higher molecular weight bands seen in the immunoblot may represent post-translationally modified TMEM4.
Reconstitution & Storage	THEM4 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	THEM4 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	THEM4
Synonyms	CTMP
Function	Has acyl-CoA thioesterase activity towards medium and long- chain (C14 to C18) fatty acyl-CoA substrates, and probably plays a role in mitochondrial fatty acid metabolism. Plays a role in the apoptotic process, possibly via its regulation of AKT1 activity. According to PubMed:11598301, inhibits AKT1 phosphorylation and activity. According to PubMed:17615157, enhances AKT1

	activity by favoring its phosphorylation and translocation to plasma membrane.
Cellular Location	Cell membrane. Cell projection, ruffle membrane. Cytoplasm. Mitochondrion. Mitochondrion inner membrane; Peripheral membrane protein. Mitochondrion intermembrane space. Note=Released from the mitochondria into the cytosol in response to apoptotic stimuli
Tissue Location	Expressed predominantly in skeletal muscle, testis, uterus, brain and kidney. Down-regulated in glioblastoma or glioma compared to non-neoplastic brain due to promoter hypermethylation

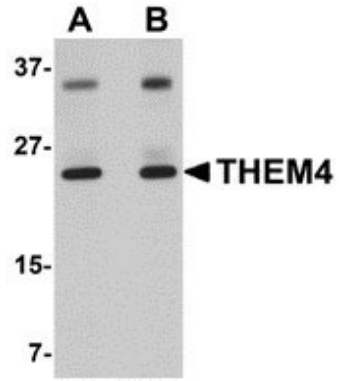
Background

THEM4 Antibody: THEM4, also known as CTMP, binds specifically to the carboxy-terminal regulatory domain of PKB/Akt at the plasma membrane and acts as a negative regulator, reversing the phenotype of v-Akt-transformed cells. Hypermethylation of the THEM4 promoter and transcriptional downregulation of the gene has been reported in multiple glioblastomas, suggesting that epigenetic regulation of THEM4 may play a role in the progression of this cancer. Bioinformatic analysis, confirmed by in vitro testing, indicates that THEM4 is a broad-range, high activity acyl-CoA thioesterase. Recent reports have also indicated that TMEM4 is a mitochondrial protein whose overexpression is associated with an increase in mitochondrial membrane depolarization and caspase-3 and PARP cleavage, suggesting that THEM4 is involved in the apoptotic program.

References

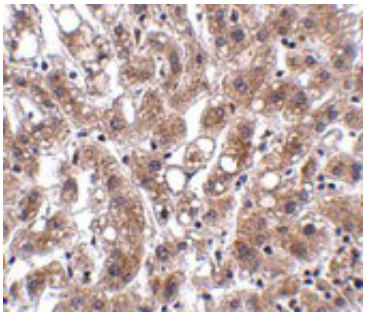
Maira SM, Galetic I, Brazil DP, et al. Carboxyl-terminal modulator protein (CTMP), a negative regulator of PKB/Akt and v-Akt at the plasma membrane. Science2001; 294:374-80.
Knobbe CB, Reifberger J, Blaschke B, et al. Hypermethylation and transcriptional downregulation of the carboxyl-terminal modulator protein gene in glioblastomas. J. Natl. Cancer Inst.2004; 96:483-6.
Zhao H, Martin BM, Bisoffi M, et al. The Akt C-terminal modulator protein is an acyl-CoA thioesterase of the hotdog-fold family. Biochemistry2009; 48:5507-9.
Parcellier A, Tintignac LA, Zhuravleva E, et al. Carboxy-terminal modulator protein (CTMP) is a mitochondrial protein that sensitizes cells to apoptosis. Cell Signal.2009; 21:639-50.

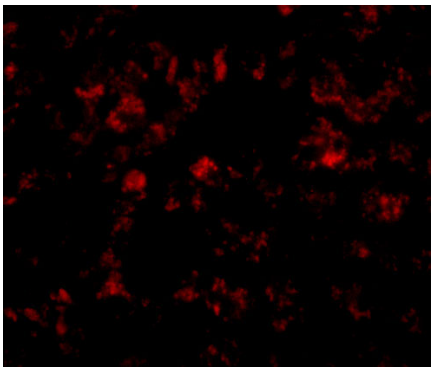
Images



Western blot analysis of THEM4 in human liver tissue lysate with THEM4 antibody at (A) 1 and (B) 2 µg/mL.

Immunohistochemistry of THEM4 in human liver tissue with THEM4 antibody at 2.5 µg/mL.





Immunofluorescence of THEM4 in human liver tissue with THEM4 antibody at 20 µg/mL.

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