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UCP3 Antibody (Center)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP18132c

Product Information

Application	WB, E
Primary Accession	P55916
Other Accession	P56499, O97649, P56501, O77792, NP_003347.1
Reactivity	Human
Predicted	Bovine, Mouse, Pig, Rat, Canine, Rabbit, Chicken
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB22010
Calculated MW	34216
Antigen Region	149-176

Additional Information

Gene ID	7352
Other Names	Mitochondrial uncoupling protein 3, UCP 3, Solute carrier family 25 member 9, UCP3, SLC25A9
Target/Specificity	This UCP3 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 149-176 amino acids from the Central region of human UCP3.
Dilution	WB~~1:1000 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	UCP3 Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	UCP3 {ECO:0000303|PubMed:9180264, ECO:0000312|HGNC:HGNC:12519}
Function	Putative transmembrane transporter that plays a role in mitochondrial metabolism via an as yet unclear mechanism (PubMed:21775425,

PubMed:36114012). Originally, this mitochondrial protein was thought to act as a proton transmembrane transporter from the mitochondrial intermembrane space into the matrix, causing proton leaks through the inner mitochondrial membrane, thereby uncoupling mitochondrial membrane potential generation from ATP synthesis (PubMed:11171965, PubMed:12670931, PubMed:12734183, PubMed:9305858). However, this function is controversial and uncoupling may not be the function, or at least not the main function, but rather a consequence of more conventional metabolite transporter activity (PubMed:11707458).

Cellular Location

Mitochondrion inner membrane {ECO:0000250|UniProtKB:P56501}; Multi-pass membrane protein

Tissue Location

Only in skeletal muscle and heart (PubMed:9305858). Also expressed in white and brown adipose tissues (PubMed:9305858). Is more expressed in glycolytic than in oxidative skeletal muscles

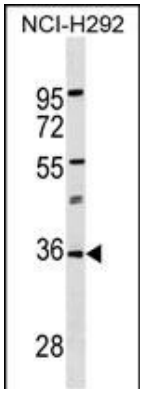
Background

Mitochondrial uncoupling proteins (UCP) are members of the larger family of mitochondrial anion carrier proteins (MACP). UCPs separate oxidative phosphorylation from ATP synthesis with energy dissipated as heat, also referred to as the mitochondrial proton leak. UCPs facilitate the transfer of anions from the inner to the outer mitochondrial membrane and the return transfer of protons from the outer to the inner mitochondrial membrane. They also reduce the mitochondrial membrane potential in mammalian cells. The different UCPs have tissue-specific expression; this gene is primarily expressed in skeletal muscle. This gene's protein product is postulated to protect mitochondria against lipid-induced oxidative stress. Expression levels of this gene increase when fatty acid supplies to mitochondria exceed their oxidation capacity and the protein enables the export of fatty acids from mitochondria. UCPs contain the three solcar protein domains typically found in MACPs. Two splice variants have been found for this gene.

References

Hu, M., et al. Pharmacogenet. Genomics 20(10):634-637(2010)
Bailey, S.D., et al. Diabetes Care 33(10):2250-2253(2010)
Hancock, A.M., et al. Mol. Biol. Evol. (2010) In press :
Aller, R., et al. Nutr Hosp 25(4):572-576(2010)
Pinheiro, A.P., et al. Am. J. Med. Genet. B Neuropsychiatr. Genet. 153B (5), 1070-1080 (2010) :

Images



UCP3 Antibody (Center) (Cat. #AP18132c) western blot analysis in NCI-H292 cell line lysates (35ug/lane).This demonstrates the UCP3 antibody detected the UCP3 protein (arrow).

Citations

- On the pivotal role of PPARα in adaptation of the heart to hypoxia and why fat in the diet increases hypoxic injury.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.