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# UCP3 Antibody (Center)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP18132c

## Product Information

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

## Additional Information

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|---|---|
| **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

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|---|---|
| **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

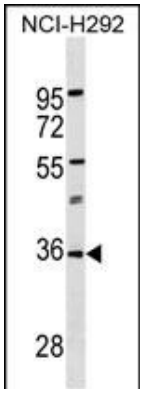
## Background

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.