10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

Anti-UCP2 Picoband Antibody

Catalog # ABO12981

Product Information

Application	WB
Primary Accession	P55851
Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Format	Lyophilized
Description	Rabbit IgG polyclonal antibody for Mitochondrial uncoupling protein 2(UCP2) detection. Tested with WB in Human;Mouse;Rat.
Reconstitution	Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Additional Information

Gene ID	7351
Other Names	Mitochondrial uncoupling protein 2, UCP 2, Solute carrier family 25 member 8, UCPH, UCP2, SLC25A8
Calculated MW	33229
Application Details	Western blot, 0.1-0.5 □g/ml, Human, Mouse, Rat
Subcellular Localization	Mitochondrion inner membrane; Multi-pass membrane protein.
Tissue Specificity	Widely expressed in adult human tissues, including tissues rich in macrophages. Most expressed in white adipose tissue and skeletal muscle.
Source	Eukaryota
Contents	Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg NaN3.
Immunogen	A synthetic peptide corresponding to a sequence in the middle region of human UCP2 (134-170aa AQPTDVVKVRFQAQARAGGGRRYQSTVNAYKTIAREE), different from the related mouse and rat sequences by one amino acid.
Purification	Immunogen affinity purified.
Cross Reactivity	No cross reactivity with other proteins.
Storage	At -20˚C for one year. After r˚Constitution, at 4˚C for one month. It˚Can also be aliquotted and stored frozen at -20˚C for a longer time. Avoid repeated freezing and thawing.

Protein Information

Name	UCP2
Synonyms	SLC25A8 {ECO:0000303|PubMed:33798544}
Function	Antiporter that exports dicarboxylate intermediates of the Krebs cycle in exchange for phosphate plus a proton across the inner membrane of mitochondria, a process driven by mitochondrial motive force with an overall impact on glycolysis, glutaminolysis and glutathione-dependent redox balance. Continuous export of oxaloacetate and related four-carbon dicarboxylates from mitochondrial matrix into the cytosol negatively regulates the oxidation of acetyl-CoA substrates via the Krebs cycle, lowering the ATP/ADP ratio and reactive oxygen species (ROS) production (PubMed:24395786). May mediate inducible proton entry into the mitochondrial matrix affecting ATP turnover as a protection mechanism against oxidative stress. The proton currents are most likely associated with fatty acid flipping across the inner membrane of mitochondria in a metabolic process regulated by free fatty acids and purine nucleotides (By similarity) (PubMed:11171965, PubMed:11278935, PubMed:22524567, PubMed:26182433, PubMed:33373220). Regulates the use of glucose as a source of energy. Required for glucose-induced DRP1-dependent mitochondrial fission and neuron activation in the ventromedial nucleus of the hypothalamus (VMH). This mitochondrial adaptation mechanism modulates the VMH pool of glucose- excited neurons with an impact on systemic glucose homeostasis (By similarity). Regulates ROS levels and metabolic reprogramming of macrophages during the resolution phase of inflammation. Attenuates ROS production in response to IL33 to preserve the integrity of the Krebs cycle required for persistent production of itaconate and subsequent GATA3-dependent differentiation of inflammation-resolving alternatively activated macrophages (By similarity). Can unidirectionally transport anions including L-malate, L-aspartate, phosphate and chloride ions (PubMed:22524567, PubMed:24395786, PubMed:26182433). Does not mediate adaptive thermogenesis (By similarity).
Cellular Location	Mitochondrion inner membrane {ECO:0000250|UniProtKB:P70406}; Multi-pass membrane protein
Tissue Location	Widely expressed in adult human tissues, including tissues rich in macrophages. Most expressed in white adipose tissue and skeletal muscle.

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. Tissue specificity occurs for the different UCPs and the exact methods of how UCPs transfer H+/OH- are not known. UCPs contain the three homologous protein domains of MACPs. This gene is expressed in many tissues, with the greatest expression in skeletal muscle. It is thought to play a role in nonshivering thermogenesis, obesity and diabetes. Chromosomal order is 5'-UCP3-UCP2-3'.

Images

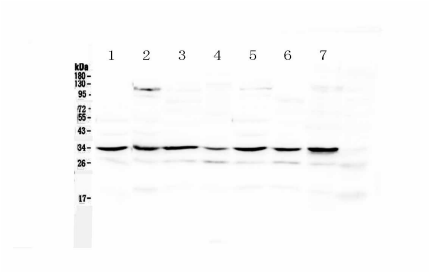


Figure 1. Western blot analysis of UCP2 using anti-UCP2 antibody (ABO12981).

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