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UCP1 Antibody

Catalog # ASC11762

Product Information

Application	WB, E, IHC-P
Primary Accession	P25874
Other Accession	NP_068605, 11225256
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	33005
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	UCP1 antibody can be used for detection of UCP1 by Western blot at 1 - 2 g/ml. Antibody can also be used for Immunohistochemistry starting at 2.5 g/mL.

Additional Information

Gene ID	7350
Other Names	Mitochondrial brown fat uncoupling protein 1, UCP 1, Solute carrier family 25 member 7, Thermogenin, UCP1, SLC25A7, UCP
Target/Specificity	UCP1; UCP1 antibody is human, mouse and rat reactive.
Reconstitution & Storage	UCP1 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year.
Precautions	UCP1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	UCP1 (HGNC:12517)
Function	Mitochondrial protein responsible for thermogenic respiration, a specialized capacity of brown adipose tissue and beige fat that participates in non-shivering adaptive thermogenesis to temperature and diet variations and more generally to the regulation of energy balance (By similarity). Functions as a long-chain fatty acid/LCFA and proton symporter, simultaneously transporting one LCFA and one proton through the inner mitochondrial membrane (PubMed:24196960, PubMed:28781081). However, LCFAs remaining associated with the transporter via their hydrophobic tails, it results in an apparent transport of protons activated by LCFAs. Thereby, dissipates the mitochondrial proton gradient and converts the energy of substrate oxydation into heat instead of ATP. Regulates the production of

	reactive oxygen species/ROS by mitochondria (By similarity).
Cellular Location	Mitochondrion inner membrane {ECO:0000250|UniProtKB:P12242}; Multi-pass membrane protein
Tissue Location	Brown adipose tissue..

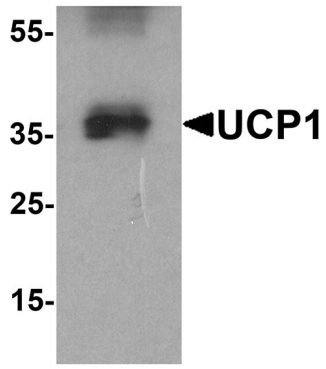
Background

The mitochondrial brown fat uncoupling protein 1 (UCP1) is a member of the family of mitochondrial anion carrier proteins (MACP) (1). 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 (1). UCP1 is expressed only in brown adipose tissue, a specialized tissue which functions to produce heat (1).

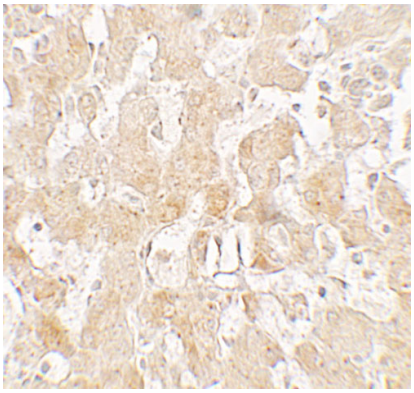
References

1. Rial E, Gonzalez-Barroso MM, Fleury C, et al. The structure and function of the brown fat uncoupling protein UCP1: current status. Biofactors 1998; 8:209-19.

Images



Western blot analysis of UCP1 in HeLa cell lysate with UCP1 antibody at 1 µg/ml.



Immunohistochemistry of UCP1 in human liver tissue with UCP1 antibody at 2.5 µg/mL.