ALPHA DIAGNOSTIC INTERNATIONAL

LIFE TECH Life Technologies™ Your Molecular & Cell Technology Partner

Product Specification Sheet

Uncoupling Protein 2 (UCP2) Antibodies

Cat. UCP23-S	Rabbit Anti-Human UCP2 Antiserum # 3	**SIZE**: 100 ul
Cat. UCP23-A	Rabbit Anti-Human UCP2 IgG #3 (affinity pure)	**SIZE**: 100 ug
Cat. UCP23-P	Human UCP2 Control/blocking peptide # 3	**SIZE**: 100 ug

White and brown adipose tissues (BAT and WAT, respectively) play a central role in body weight and energy expenditure. WAT is the major site for energy storage via triglyceride synthesis and mobilization via lipolysis. **Uncoupling proteins (UCP1-5)** are a family of mitochondria transport proteins that play a critical role in thermoregulatory heat production and maintenance of basal metabolic rate. BAT is able to dissipate energy as heat via uncoupled mitochondrial respiration by a mitochondrial anion carrier, uncoupling protein 1 (UCP1). UCP1 is predicted to contain 6 trans-membrane (TM) domains, a putative purine nucleotide-binding domain (PNBD) and three-mitochondrial energy transfer protein domains (ETPDs). Both amino and C-termini are predicted to be cytoplasmic.

Mouse/rat **UCP2** is A 309 AA (human 309 aa chromosome 7; ~95% homology) mitochondrial uncoupling protein (1). It is only 59% homologous with UCP1 found in brown adipose tissues. UCP2 has wide tissue distribution in mouse tissues (brain, kidney, liver, brown adipose tissue, heart, and muscle). UCP2 may play a critical role in energy balance, body weight, and thermoregulation.

Function: UCP are mitochondrial transporter proteins that create proton leaks across the inner mitochondrial membrane, thus uncoupling oxidative phosphorylation from ATP synthesis. As a result, energy is dissipated in the form of heat.
Subcellular Location: Mitochondrion inner membrane; Multi-pass membrane protein.
Similarity: Belongs to the mitochondrial carrier family.
Protein name Mitochondrial uncoupling protein 2
Synonyms UCP 2, UCPH
Gene name Name: UCP2; Synonyms: SLC25A8

Source of Antigen and Antibodies

Antigen	13-aa peptide from **human UCP2** (1);(protein accession #P55851 , refs 1) **Designation (UCP23-P, control peptide /blocking peptide**) conjugated to KLH; Epitope location ~ between the 3rd and 4th TM Domain
Ab Host/type	Rabbit, Polyclonal Aff pure IgG, (Cat # **UCP23**-A) purified over the antigen column
2-Ab	Cat # 20320, **goat anti-rabbit IgG-HRP** (AP, biotin, FITC conjugates also available).
-ve control	# 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as –ve control

Form & Storage of Antibodies/Peptide Control

Antiserum (unpurified)
100ul solution lyophilized powder
Supplied in Buffer: 0.05% azide

Reconstitute powder in 100 ul PBS

Affinity pure IgG
100 ug/100ul solution lyophilized powder
Supplied in **Buffer**: PBS+0.1% BSA
Reconstitute powder in PBS at 1mg/ml

Control/blocking peptide
100 ug/100 ul solution lyophilized powder
Supplied in Buffer: PBS pH 7.5,
Reconstitute powder in PBS at 1 mg/ml.

Storage
Short-term: unopened, undiluted liquid vials at 20°C and powder at 4°C or -20°C..

Long-term: at –20°C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at –20°C or below.
Shipping: 4°C for solutions and room temp for powder

Recommended Usage

Western Blotting (1:1K-5K for neat serum and 1-10 ug/ml for affinity pure using ECL. (see published refs using this antibody 2).

ELISA (1:10K-1:100K; using 50-100 ng control peptide/well).

Histochemistry & Immunofluorescence: we recommend the use of affinity purified antibody at 2-20 ug/ml in formaldehyde fixed tissue**. (see published refs using this antibody in 2).**

Specificity & Cross-reactivity

The human UCP23-P peptide sequences is 100% conserved in rat and mouse, and 92% in canine, bovine, and pig UCP2. UCP23-P has no significant homology with UCP1, UCP3-5. Antibody cross-reactivity in various species has not been studied. Control peptide, because of its low mol. Wt (<3 kDa), is not suitable for Western. It should be used for ELISA or antibody blocking experiments (use 5-10 ug control peptide per 1 ug of aff pure IgG or 1 ul antiserum) to confirm antibody specificity

General References: (1) Fleury C et al 91997) Nature Genetics 15, 269-272; Flier JF and Lowell BB (1997) Nature Genetics 15, 223-224; **(2)** Boss O et al (1997) FEBS Lett. 408, 39-42

*This product is for in vitro research use only.

UCP23-S-A-P 71001J

India Contact:
Life Technologies (India) Pvt. Ltd.
306, Aggarwal City Mall, Opposite M2K Pitampura, Delhi – 110034 (INDIA). Ph: +91-11-42208000, 42208111, 42208222, Mobile: +91-9810521400, Fax: +91-11-42208444
Email: customerservice@lifetechindia.com Website: www.lifetechindia.com