ALPHA DIAGNOSTIC INTERNATIONAL

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Product Specification Sheet

Uncoupling Protein 5 (UCP5/BMCP1) Antibodies

Cat. UCP52-S	Rabbit Anti-Human UCP5 Antiserum # 1	**SIZE**: 100 ul
Cat. UCP52-A	Rabbit Anti-Human UCP5 IgG # 1 (aff pure)	**SIZE**: 100 ug
Cat. UCP52-P	Human UCP5 Control/blocking peptide #1	**SIZE**: 100 ug

The regulation of body weight depends upon the calorie intake and expenditure. It is a very complex and highly regulated process. It involves multiples neural circuits with specific neuropeptides, neurotransmitter transporters and receptors and influenced by peripheral signals. The product of obese gene (Leptin) may influence many of these processes. 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.

UCP5 or Brain Mitochondrial Carrier Protein 1 or **BMCP1** (human 322 aa, chromosome Xq24, ~35% identity with UCP1-3) is mainly expressed in the brain and testis.

Source of Antigen and Antibodies

Antigen	16-aa peptide from **Human UCP5** (1); **Designation (UCP52-P, control peptide**) conjugated to KLH; epitope location ~ Cytoplasmic, ~N-terminus
Ab Host/type	Rabbit, Polyclonal Unpurified antiserum (cat # UCP52-S) and aff pure IgG (cat # UCP52-A)
2-ab	Anti-rabbit IgG-HRP cat # 20320 (AP, biotin, FITC conjugates also available)
-ve control IgG	# 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 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 -20OC and powder at 4oC or -20oC..

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

Stability: 6-12 months at –20oC or below.
Shipping: 4oC 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 technique.

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

Histochemistry & Immunofluorescence: not tested.

Specificity & Cross-reactivity

UCP5 may be alternatively spliced to produced at least 3 transcripts: UCP5L has a unique 22-aa unique N-terminal sequence; UCP5S is missing 3 aa (23-25 aa) and UCP5S has 31 aa insertion between TM II-IV. The UCP52-P sequence is conserved in all 3 isoforms in rat and mouse UCP5. It is 100% conserved in mouse, rat UCP5/BMCP1. UCP52-P has no appreciable homology with UCP1-4. Antibody crossreactivity of UCP52-S antibodies in various species is not established. 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 (see detailed protocol at the web site.

General References: (1) Yu XX et al (2000) FASEB J. 14, 1611-1618; Sanchis 2000) FASEB J. 14, 1611-1618; Sanchis D et al (1998) JBC 273, 34611-34615; Kim-han JS et al (2001) J. Neurochem. 79, 658-665.

(2) Citations of ADI's Antibodies (see web site for updated list)

Ho W-L 2005 J. Neurosci. 81, 261-268
Razmara A 2007 Brain Res. In press
Kim-Han Sook Jeong 2001 J. Neurochem. 79: 658-668
Sullivan PJ 2003 Epilepsia (Series 4), Sep2003 Supplement 9, Vol. 44, p176

*This product is for in vitro research use only

Related material available from ADI

Anti-UCP1-5, Leptin, FABP, B3AR, Orexins-A and B, and Orexin 1/2 receptors, CART and Anti-CART

Western Blot recycling kit (Use the same blot to probe with multiple antibodies UCP1-4, etc.)

UCP52-S-A-P 71208A

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