ALPHA DIAGNOSTIC INTERNATIONAL

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Product Specification Sheet

Rat Uncoupling Protein 3 (UCP3) Antibodies

Cat. UCP33-S	Rabbit Anti-Rat UCP3 Antiserum # 3	**SIZE**: 100 ul
Cat. UCP33-A	Rabbit Anti-Rat UCP3 IgG #3 (aff pure)	**SIZE**: 100 ug
Cat. UCP33-P	Rat UCP3 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.

Human **UCP3** long form (UCP3L) is a 312 aa mitochondrial uncoupling protein (1, 2). It is only 57% and 73% homologous with human UCP1 and UCP2 respectively. Like other UCPs, UCP3 is predicted to contain 6 transmembrane domains. The UCP3S lacks the 6th transmembrane domain and it is only 275 aa long (2). UCP3 has preferential expression in muscle and it is unaffected by cold acclimation.

Source of Antigen and Antibodies

Antigen	18-aa peptide from **rat UCP3** (1); **Designation (UCP33-P, control peptide/blocking peptide**) conjugated to KLH; ~ between the 3rd and 4th TM domain
Ab Host/type	Rabbit, Polyclonal unpurified antiserum (**#UCP33**-S) and IgG, purified over antigen-agarose (Cat # **UCP33**-A)
2-Ab	Cat # 20320, **goat anti-rabbit IgG-HRP** (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 Chemiluminescence technique). **(see published refs using this antibody in 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 rat UCP33-P peptide sequences is 100% conserved in mouse, 94% in hamster, 66% in canine, 61% in bovine, 63% in monkey, and 38% in human UCP3. UCP33-P has no significant homology with UCP1-2 or UCP4-5. 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 (see detailed protocolw.

General References: (1) Boss, O et al (1997) FEBS Lett. 408, 39-42; (2)Vidal-Puig A et al (1997) BBRC 235, 79-82.

Citations of for UCP3(see updated list at the web site)

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*This product is for in vitro research use only.

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