ALPHA DIAGNOSTIC INTERNATIONAL

Product Specification Sheet

Human Uncoupling Protein 2 (UCP2)

□ **Cat.** UCP26-R-10	Recombinant purified human UCP2 protein	**SIZE**: 10 ug
□ **Cat.** UCP26-R-50	Recombinant purified human UCP2 protein	**SIZE**: 50 ug

The regulation of body weight depends upon the calorie intake and expenditure. 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 UCP1 is A 307 AA mitochondrial uncoupling protein (1). It is only 59% homologous with UCP2 (2). UCP1 is primarily expressed in brown adipose tissues.

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 (1, 2).

Source of Antigen and Antibodies

Human UCP2 protein (full length; gene accession # NM_003355) was expressed as fusion protein (His tag- UCP2) in E.coli and purified (>95% with major band at ~33kDa). Purified Human UCP2 protein is supplied in 50mM Tris-HCl, pH 8.0, 250mM NaCl, 1.5% sodium lauroyl Sarcosine, 1mM EDTA, 10mM beta-mercapto-ethanol at a conc. of 1mg/ml (lot specific conc. is provided on the vial). Store at -20°C or below. Avoid frequent freeze and thaw.

Recommended Usage

Western Blotting & ELISA

General References: (1) Kozak LP (1988) JBC 263, 12274; Bouillaud F (1986) JBC 261, 1487; Ridley RG (1986) Nucl. Acid Res. 14, 4025; Miroux B (1993) ; EMBO J 12, 3739; Cassard AM et al (1990) JCB 43, 255; (2) Fleury C (1997) Nature Genetics 15, 269;

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

Mulligan, 2007, J Physiology, 580, 677-684, Apr 2007; Jonathan B, 2007, PNAS,; 104: 5680 – 5685; Rodriguez E, 2001, Eur. J. Physiology 442, 396-403; Ryu J-W, 2003, BBRC 303, 726-731; Nibbelink M, 2001, J. Biol. Chem. 276, 47295; Klein J, 2004, J. Endocrinol., 183: 299 – 307; Lee S-H, 2004, J. Lipid Res., 45, 1674-1682; Justo R, 2005, Life Sciences, 76, 1147-1158;
See more refs at the web site.

UCP26-R-10-50 80708A

Alpha Diagnostic Intl Inc., 6203 Woodlake Center Dr, San Antonio, TX 78244, USA; **Email**: service@4adi.com
☎ (800) 786-5777; (210) 561-9515; **Fax**: (210) 561-9544; **Web Site**: www.4adi.com