

Product Specification Sheet

Human Uncoupling Protein 3 (UCP3/UCP-3)

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| <input type="checkbox"/> Cat. UCP36-R-10 | Recombinant purified human UCP3 protein | SIZE: 10 ug |
| <input type="checkbox"/> Cat. UCP36-R-50 | Recombinant purified human UCP3 protein | SIZE: 50 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

Human UCP3 protein (full length; gene accession # NM_003356) was expressed as fusion protein (His tag- UCP3) in E.coli and purified (>95% with major band at ~34kDa). Purified Human UCP3 protein is supplied in, pH 8.0, 10mM NaH₂PO₄, 8M urea and 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.

UCP36-R-10-50

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