

# UCP1 (M-17): sc-6529

## BACKGROUND

The uncoupling protein UCP1 (formerly designated UCP) is an integral membrane protein unique to brown adipose tissue mitochondria. UCP1 forms a dimer that acts as a proton channel, which can uncouple oxidative phosphorylation by dissipating the electrochemical potential across the inner mitochondrial membrane. This process induces heat production in brown adipose tissue and is involved in regulation of body temperature and glucose metabolism. UCP2 is a structurally related protein that also uncouples mitochondrial respiration. It is more widely expressed in human and mouse tissues, including white adipose tissue and muscle, than is UCP. UCP2 is thought to play a role in body weight regulation.

## CHROMOSOMAL LOCATION

Genetic locus: UCP1 (human) mapping to 4q31.1; Ucp1 (mouse) mapping to 8 C2.

## SOURCE

UCP1 (M-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of UCP1 of mouse origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-6529 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

UCP1 (M-17) is recommended for detection of UCP1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

UCP1 (M-17) is also recommended for detection of UCP1 in additional species, including porcine.

Suitable for use as control antibody for UCP1 siRNA (h): sc-42680, UCP1 siRNA (m): sc-42681, UCP1 shRNA Plasmid (h): sc-42680-SH, UCP1 shRNA Plasmid (m): sc-42681-SH, UCP1 shRNA (h) Lentiviral Particles: sc-42680-V and UCP1 shRNA (m) Lentiviral Particles: sc-42681-V.

Molecular Weight of UCP1: 33 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210.

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

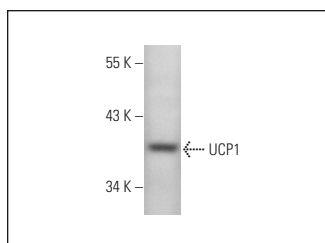
## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## DATA



UCP1 (C-17): sc-6529. Western blot analysis of UCP1 expression in NIH/3T3 whole cell lysate.

## SELECT PRODUCT CITATIONS

- Pereira-da-Silva, M. 2003. Hypothalamic MCH is induced by cold exposure and participates in the control of energy expenditure in rats. *Endocrinology* 144: 4831-4840.
- Pulinilkunnil, T., et al. 2011. Adrenergic regulation of AMP-activated protein kinase in BAT *in vivo*. *J. Biol. Chem.* 286: 8798-8809.
- Arruda, A.P., et al. 2011. Low-grade hypothalamic inflammation leads to defective thermogenesis, Insulin resistance, and impaired Insulin secretion. *Endocrinology* 152: 1314-1326.
- Cheng, Y., et al. 2011. Leucine deprivation stimulates fat loss via increasing CRH expression in the hypothalamus and activating the sympathetic nervous system. *Mol. Endocrinol.* 25: 1624-1635.
- Caricilli, A.M., et al. 2011. Gut microbiota is a key modulator of Insulin resistance in TLR 2 knockout mice. *PLoS Biol.* 9: e1001212.
- Cintra, D.E., et al. 2012. Unsaturated fatty acids revert diet-induced hypothalamic inflammation in obesity. *PLoS ONE* 7: e30571.
- Alberdi, G., et al. 2013. Thermogenesis is involved in the body-fat lowering effects of resveratrol in rats. *Food Chem.* 141: 1530-1535.
- Li, H.X., et al. 2015. Chemerin inhibition of myogenesis and induction of adipogenesis in C2C12 myoblasts. *Mol. Cell. Endocrinol.* 414: 216-223.
- Kim, Y.M., et al. 2015. The anti-obesity effects of a tuna peptide on 3T3-L1 adipocytes are mediated by the inhibition of the expression of lipogenic and adipogenic genes and by the activation of the Wnt/ $\beta$ -catenin signaling pathway. *Int. J. Mol. Med.* 36: 327-334.
- Zhang, H., et al. 2015. MicroRNA-455 regulates brown adipogenesis via a novel HIF1an-AMPK-PGC1 $\alpha$  signaling network. *EMBO Rep.* 16: 1378-1393.

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Try **UCP1 (4E5): sc-293418**, our highly recommended monoclonal alternative to UCP1 (M-17).