

UCP2 (A-19): sc-6527

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.

REFERENCES

- Nicholls, D.G., et al 1984. Thermogenic mechanisms in brown fat. *Physiol. Rev.* 64: 1-64.
- Jacobsson, A., et al. 1985. Mitochondrial uncoupling protein from mouse brown fat. Molecular cloning, genetic mapping, and mRNA expression. *J. Biol. Chem.* 260: 16250-16254.
- Himms-Hagen, J. 1990. Brown adipose tissue thermogenesis: interdisciplinary studies. *FASEB J.* 4: 2890-2898.

CHROMOSOMAL LOCATION

Genetic locus: UCP2/UCP3 (human) mapping to 11q13.4; Ucp2/Ucp3 (mouse) mapping to 7 E3.

SOURCE

UCP2 (A-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of UCP2 of human 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-6527 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

UCP2 (A-19) is recommended for detection of UCP2 and, to a lesser extent, UCP3 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).

UCP2 (A-19) is also recommended for detection of UCP2 and, to a lesser extent, UCP3 in additional species, including equine, canine, bovine and porcine.

Molecular Weight of UCP2 monomer: 35 kDa.

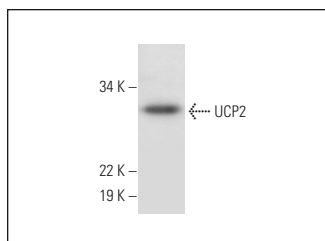
Molecular Weight of UCP2 dimer: 70 kDa.

Positive Controls: human skeletal muscle extract: sc-363776.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



UCP2 (A-19): sc-6527. Western blot analysis of UCP2 expression in human skeletal muscle tissue extract.

SELECT PRODUCT CITATIONS

- Ribeiro, P.S., et al. 2004. Hepatocyte apoptosis, expression of death receptors, and activation of NFκB in the liver of nonalcoholic and alcoholic steatohepatitis patients. *Am. J. Gastroenterol.* 99: 1708-1717.
- Exil, V.J., et al. 2006. Abnormal mitochondrial bioenergetics and heart rate dysfunction in mice lacking very-long-chain acyl-CoA dehydrogenase. *Am. J. Physiol. Heart Circ. Physiol.* 290: H1289-H1297.

STORAGE

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

RESEARCH USE

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


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Try **UCP2 (G-6): sc-390189**, our highly recommended monoclonal alternative to UCP2 (A-19). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **UCP2 (G-6): sc-390189**.