SANTA CRUZ BIOTECHNOLOGY, INC.

UCP1 (A-6): sc-518024

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 (mouse) mapping to 8 C2.

SOURCE

UCP1 (A-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 284-307 at the C-terminus of UCP1 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

UCP1 (A-6) is available conjugated to agarose (sc-518024 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-518024 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-518024 PE), fluorescein (sc-518024 FITC), Alexa Fluor® 488 (sc-518024 AF488), Alexa Fluor® 546 (sc-518024 AF546), Alexa Fluor® 594 (sc-518024 AF594) or Alexa Fluor® 647 (sc-518024 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-518024 AF680) or Alexa Fluor® 790 (sc-518024 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

UCP1 (A-6) is recommended for detection of UCP1 of mouse and rat origin by Western Blotting (starting dilution 1:100, 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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

Molecular Weight of UCP1: 33 kDa.

Positive Controls: UCP1 (m): 293T Lysate: sc-124439.

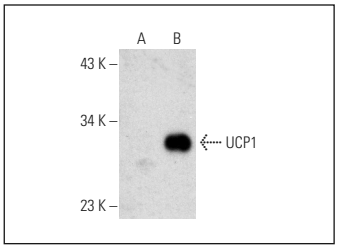
STORAGE

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

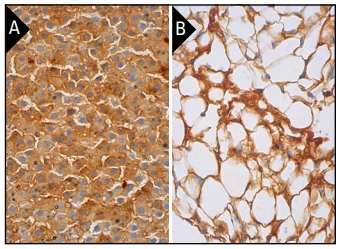
RESEARCH USE

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

DATA



UCP1 (A-6): sc-518024. Western blot analysis of UCP1 expression in non-transfected: sc-117752 (**A**) and mouse UCP1 transfected: sc-124439 (**B**) 293T whole cell lysates.



UCP1 (A-6): sc-518024. Immunoperoxidase staining of formalin fixed, paraffin-embedded rat adrenal gland tissue showing cytoplasmic staining of glandular cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse adipose tissue showing cytoplasmic and membrane staining of adipocytes (**B**).

SELECT PRODUCT CITATIONS

1. Orabi, S.H., et al. 2020. *Commiphora myrrha* resin alcoholic extract ameliorates high fat diet induced obesity via regulation of UCP1 and adiponectin proteins expression in rats. Nutrients 12: 803.
2. Chen, R., et al. 2021. CD147 deficiency in T cells prevents thymic involution by inhibiting the EMT process in TECs in the presence of TGFβ. Cell. Mol. Immunol. 18: 171-181.
3. Di Maio, G., et al. 2021. Evaluation of browning agents on the white adipogenesis of bone marrow mesenchymal stromal cells: a contribution to fighting obesity. Cells 10: 403.
4. Yang, H., et al. 2022. Pre-weaning exposure to maternal high-fat diet is a critical developmental window for programming the metabolic system of offspring in mice. Front. Endocrinol. 13: 816107.
5. Lee, H.Y., et al. 2022. GABA and *Fermented Curcuma* longa L. extract enriched with GABA ameliorate obesity through Nox4-IRE1α sulfonation-RIDD-SIRT1 decay axis in high-fat diet-induced obese mice. Nutrients 14: 1680.
6. Fan, L., et al. 2022. ZD-2, a novel DPP4 inhibitor, protects islet β-cell and improves glycemic control in high-fat-diet-induced obese mice. Life Sci. 298: 120515.
7. Di Maio, G., et al. 2022. Molecular and physiological effects of browning agents on white adipocytes from bone marrow mesenchymal stromal cells. Int. J. Mol. Sci. 23: 12151.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.