

DESCRIPTION

Species Reactivity	Human/Mouse
Specificity	Detects human and mouse UCP1 in Western blots.
Source	Monoclonal Mouse IgG _{2B} Clone # 536435
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	<i>E. coli</i> -derived recombinant human UCP1 Met1-Thr307 Accession # P25874
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 µm filtered solution in PBS.

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

	Recommended Concentration	Sample
Western Blot	0.5 µg/mL	See Below
Immunocytochemistry	8-25 µg/mL	See Below
Simple Western	2.5 µg/mL	See Below

DATA

Western Blot

Detection of Human UCP1 by Western Blot. Western blot shows recombinant human UCP1, recombinant human UCP2, recombinant human UCP3, and recombinant human UCP4 (5 ng/lane). PVDF Membrane was probed with 0.5 µg/mL of Mouse Anti-Human/Mouse UCP1 Monoclonal Antibody (Catalog # MAB6158) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF007). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 2.

Western Blot

Detection of Mouse UCP1 by Western Blot. Western blot shows lysates of mouse brown adipose tissue and mouse adipose tissue. PVDF Membrane was probed with 0.5 µg/mL of Mouse Anti-Human/Mouse UCP1 Monoclonal Antibody (Catalog # MAB6158) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF007). A specific band was detected for UCP1 at approximately 37 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 2.

Immunocytochemistry

UCP1 in Human Mesenchymal Stem Cells. UCP1 was detected in immersion fixed human mesenchymal stem cells undifferentiated (lower panel) or differentiated into adipocytes (upper panel) using Mouse Anti-Human/Mouse UCP1 Monoclonal Antibody (Catalog # MAB6158) at 10 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Mouse IgG Secondary Antibody (red; Catalog # NL007) and counterstained with DAPI (blue). Specific staining was localized to cytoplasm. View our protocol for [Fluorescent ICC Staining of Stem Cells on Coverslips](#).

Simple Western

Detection of Mouse UCP1 by Simple Western™. Simple Western lane view shows lysates of mouse adipose tissue and mouse brown adipose tissue, loaded at 0.5 mg/mL. A specific band was detected for UCP1 at approximately 37 kDa (as indicated) using 2.5 µg/mL of Mouse Anti-Human/Mouse UCP1 Monoclonal Antibody (Catalog # MAB6158). This experiment was conducted under reducing conditions and using the 12-230 kDa separation system.

SIMPLE WESTERN

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Mitochondrial brown fat uncoupling protein 1 (UCP1; also Thermogenin and UCP) is a 33 kDa member of the mitochondrial carrier family of proteins. Human and mouse UCP1 are both 307 amino acids (aa) in length and contain three solcar repetitive regions and six transmembrane segments. UCP1 is found in brown adipose tissue, where it becomes activated by fatty acids and inhibited by nucleotides. It functions as a mitochondrial transporter that creates a proton leak across the inner mitochondrial membrane, uncoupling oxidative phosphorylation from ATP synthesis. As a result, energy is dissipated in the form of heat. Human and mouse UCP1 share 79% aa sequence identity.