

# UCP1 Polyclonal Antibody

Product Details	
Size	100 µL
Species Reactivity	Cat, Ferret, Human, Mouse, Rat
Published Species	Rat, Mouse, Human
Host/Isotype	Rabbit / IgG
Class	Polyclonal
Type	Antibody
Conjugate	Unconjugated
Immunogen	Synthetic peptide, conjugated to KLH, corresponding to residues 145-159 of human UCP1, with an N-terminal added cysteine.
Form	Liquid
Concentration	1.3 mg/mL
Purification	Antigen affinity chromatography
Storage buffer	0.01M PBS, pH 7.4, with 1% BSA
Contains	15mM sodium azide
Storage conditions	Store at 4°C short term. For long term storage, store at -20°C, avoiding freeze/thaw cycles.
RRID	AB_2241459

Applications	Tested Dilution	Publications
Western Blot (WB)	1:1,000	20 Publications
Immunohistochemistry (IHC)	Assay-dependent	6 Publications
Immunohistochemistry (Paraffin) (IHC (P))	1:500	2 Publications
Immunocytochemistry (ICC/IF)	-	5 Publications

## Product Specific Information

PA1-24894 detects UCP1 from human, mouse, and rat samples, and does not cross-react with UCP2 or UCP3. PA1-24894 is expected to cross react with bovine (93% conserved), canine (93% conserved), Macaque monkey (100% conserved), rabbit (93% conserved), and ovine (93% conserved) due to sequence homology.

By Western Blot this antibody detects a band of approximately 32 kDa.

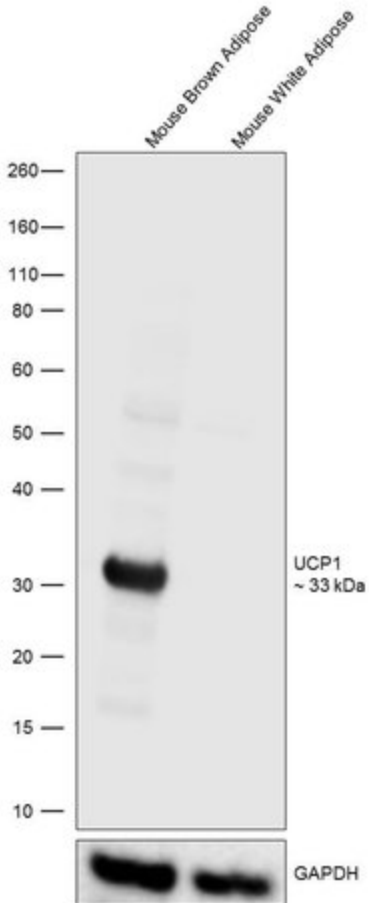
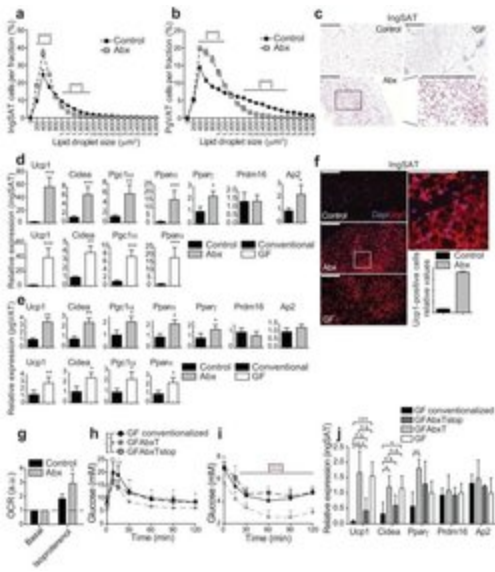
Positive Control: Brown adipose tissue.

**UCP1 Antibody (PA1-24894)**

Figure 2 Microbiota depletion promotes browning of ingSAT and pgVAT. ( a , b ) Cell size profiling of adipocytes from ingSAT ( a ) and pgVAT ( b ) fat of control and 40 days treated Abx mice. Points show mean of pooled fractions from each animal +- sem. ( n = 6 per group). ( c ) H&E staining on sections from ingSAT of mice at 14 weeks of age. Scale bar: 200  $\mu$ m. ( d , e ) Relative mRNA expression in ingSAT ( d ), or pgVAT ( e ) of mice as in (a), or GF mice with respective controls. ( n = 6 per group). ( f ) Immunohistochemistry on sections from ingSAT of mice at 14 weeks of age. Bars show mean +- sem from automated quantifications of Ucp1-positive cells relative to total cell number. Scale bars: 200  $\mu$ m (left) or 100  $\mu$ m (right). ( g ) Oxygen consumption rates (OCR) of primary isolated ingSAT adipocytes from mice as in (a). Bars represent mean +- sd, calculated using averages of two measurements per condition per pooled sample ( n ) of two mice ( n = 4 samples, 8 mice per group). ( h ) OGTT of GF mice transplanted with microbiota from control or Abx-treated mice 3.5 weeks after transplantation. Please refer to main text for details. ( i ) ITT of mice as in (h). ( j ) Relative mRNA expression in ingSAT of mice as in (h) 4 weeks after transplantation. All values in (d,e,h-j) show mean +- sd ( n = 6 per group). Significance was calculated using non-paired two-tailed Students T-test. \*: P <= 0.05, \*\*: P <= 0.01, \*\*\*: P <= 0.001. Cell treatment validation info.

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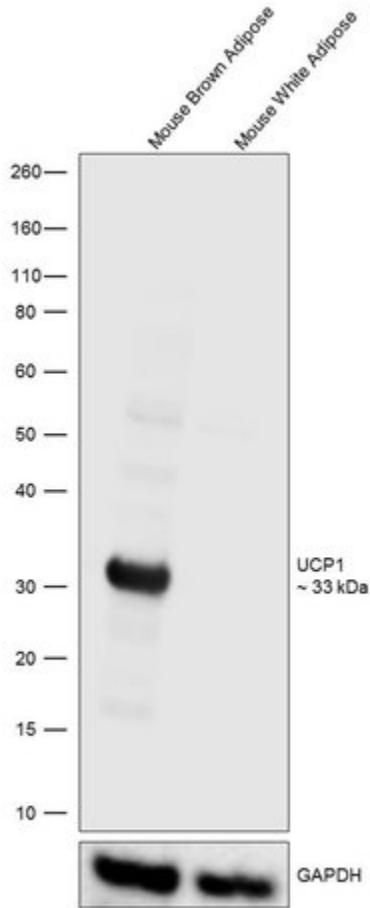
Antibody specificity was demonstrated by detection of differential basal expression of the target across tissues owing to their inherent genetic constitution. Relative expression of UCP1 was observed in mouse brown adipose which is reported to have higher expression compared to mouse white adipose (doi: 10.1055/s-0042-119525) using UCP1 Polyclonal Antibody (Product # PA1-24894) in western blot. . Relative expression validation info.



## Product Images For UCP1 Polyclonal Antibody

### UCP1 Antibody (PA1-24894) in WB

Western blot was performed using Anti-UCP1 Polyclonal Antibody (Product # PA1-24894) and a 33 kDa band corresponding to UCP1 was observed only in Mouse Brown Adipose and not Mouse White Adipose. Tissue extracts (30 µg lysate) of Mouse Brown Adipose (Lane 1) and Mouse White Adipose (Lane 2) were electrophoresed using NuPAGE™ 4-12 % Bis-Tris gel (Product # NP0322BOX). Resolved proteins were then transferred onto a nitrocellulose membrane (Product # IB23001) by iBlot® 2 Dry Blotting System (Product # IB21001). The blot was probed with the primary antibody (1:1000 dilution) and detected by Goat Anti-Rabbit IgG Secondary Antibody, HRP conjugate (Product # A27036, 1:4000 dilution) using the iBright FL 1000 (Product # A32752). Chemiluminescent detection was performed using Novex® ECL Chemiluminescent Substrate Reagent Kit (Product # WP20005)..



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Western Blot (20)

Scientific reports

**Integrins and extracellular matrix proteins modulate adipocyte thermogenic capacity.**

"PA1-24894 was used in Western Blotting to demonstrate that extracellular matrix interactions regulate adipocyte thermogenic capacity and that ITA7 plays a role in beige adipose formation."

Authors: Gonzalez Porras MA, Stojkova K, Vaicik MK, Pelowe A, Goddi A, Carmona A, Long B, Qutub AA, Gonzalez A, Cohen RN, Brey EM

**Species**  
Mouse

**Dilution**  
Not Cited

**Year**  
2021

Lipids in health and disease

**Combined extracts of Moringa oleifera, Murraya koeingii leaves, and Curcuma longa rhizome increases energy expenditure and controls obesity in high-fat diet-fed rats.**

"PA1-24894 was used in Western Blotting to show LI85008F reduces body fat mass and controls body weight gain in rats."

Authors: Kundimi S, Kavungala KC, Sinha S, Tayi VNR, Kundurthi NR, Golakoti T, Davis B, Sengupta K

**Species**  
Rat

**Dilution**  
1:10000

**Year**  
2020

[View more WB references on thermofisher.com](#)

Immunohistochemistry (6)

Oncotarget

**Ghrelin ameliorates tumor-induced adipose tissue atrophy and inflammation via Ghrelin receptor-dependent and -independent pathways.**

"PA1-24894 was used in Immunohistochemistry to characterize the pathways involved in AT atrophy in the Lewis Lung Carcinoma (LLC)-induced cachexia model and those mediating the effects of ghrelin in Ghrelin receptor +/- and Ghrelin receptor -/- mice."

Authors: Liu H, Luo J, Guillory B, Chen JA, Zang P, Yoeli JK, Hernandez Y, Lee II, Anderson B, Storie M, Tewnion A, Garcia JM

**Species**  
Mouse  
Not Applicable

**Dilution**  
1:200  
Not Cited

**Year**  
2020

Cell metabolism

**Functional Gut Microbiota Remodeling Contributes to the Caloric Restriction-Induced Metabolic Improvements.**

"PA1-24894 was used in Immunohistochemistry-immunofluorescence to reveal signals critical for our understanding of the microbiota-fat signaling axis during CR and provide potential new anti-obesity therapeutics."

Authors: Fabbiano S, Suárez-Zamorano N, Chevalier C, Lazarevi V, Kieser S, Rigo D, Leo S, Veyrat-Durebex C, Gaia N, Maresca M, Merkler D, Gomez de Agüero M, Macpherson A, Schrenzel J, Trajkovski M

**Species**  
Mouse

**Dilution**  
1:100

**Year**  
2018

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More applications with references on thermofisher.com

IHC (P) (2)    ICC/IF (5)

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