

Resource Summary Report

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UCP-1 (Abcam ab10983) immunohistochemical protocol

DOI:10.17504/protocols.io.j9scr6e

Type: Protocol

Proper Citation

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Protocol Information

URL: <https://dx.doi.org/10.17504/protocols.io.j9scr6e>

Authors: Bianca Hemmeryckx, Dries Bauters, H. Roger Lijnen

Summary: Increasing energy expenditure by stimulating thermogenesis through activation of brown adipose tissue (BAT) and/or induction of browning of white adipose tissue (WAT) is considered a promising strategy to treat/prevent obesity and related metabolic diseases. Whereas WAT is adapted to store energy as triglycerides, BAT produces heat (non-shivering thermogenesis). In brown adipocytes, the uncoupling protein-1 (UCP-1) regulates conversion of energy into heat by uncoupling ATP production from mitochondrial respiration. Also in WAT adaptive UCP-1 positive adipocytes (brown in white: brite or beige) can arise, predominantly in subcutaneous (s) WAT. This browning of WAT is enhanced by exposure to cold temperatures.

Associated Publications: Bauters D, Bedossa P, Lijnen HR, Hemmeryckx B (2018) Functional role of ADAMTS5 in adiposity and metabolic health. PLoS ONE 13(1): e0190595. doi: [10.1371/journal.pone.0190595](https://doi.org/10.1371/journal.pone.0190595)

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