

Cold exposure, capsinoids further beige adipocyte biogenesis

March 8 2016



(HealthDay)—A molecular circuit has been identified that controls beige

adipocyte biogenesis, according to research published online March 2 in *Diabetes*.

Noting that beige adipocytes are gaining attention as an attractive cellular target for anti-obesity therapy, Kana Ohyama, from the Institute for Innovation at the Ajinomoto Company in Kawasaki, Japan, and colleagues examined the molecular circuits that preferentially promote beige adipocyte biogenesis.

The researchers found that the combination of mild cold exposure (17 degrees Celsius) and capsinoids synergistically promoted beige adipocyte biogenesis and improved diet-induced obesity. Based on gain- and loss-of-function studies, beige adipocyte development was promoted synergistically by the combination of [cold exposure](#) and capsinoids through the β 2-adrenoceptor signaling pathway. The synergistic effect occurred via an increased half-life of PRDM16, which is a dominant transcriptional regulator of the development of brown/beige adipocytes.

"Our observations document a previously unappreciated molecular circuit that controls beige adipocyte biogenesis and suggest a plausible approach to increase whole body energy expenditure by combining dietary components and environmental cues," the authors write.

Several authors are employees of Ajinomoto, which funded the study.

More information: [Abstract](#)
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Citation: Cold exposure, capsinoids further beige adipocyte biogenesis (2016, March 8) retrieved 24 May 2024 from <https://medicalxpress.com/news/2016-03-cold-exposure-capsinoids-beige->

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