Nutritional and non-nutritional agents that stimulate white adipose tissue browning

Concha F.

Prado G.

Quezada J.

Ramirez A.

Bravo N.

Flores C.

Herrera J.J.

Lopez N.

Uribe D.

Duarte-Silva L.

Lopez-Legarrea P.

Garcia-Diaz D.F.

Obesity is a public health problem present in both developed and developing countries. The white adipose tissue (WAT) is the main deposit of lipids when there is an excess of energy. Its pathological growth is directly linked to the development of obesity and to a wide number of comorbidities, such as insulin-resistance, cardiovascular disease, among others. In this scenario, it becomes imperative to develop new approaches to the treatment and prevention of obesity and its comorbidities. It has been documented that the browning of WAT could be a suitable strategy to tackle the obesity epidemic that is developing worldwide. Currently there is an intense search for bioactive compounds with anti-obesity properties, which present the particular ability to generate thermogenesis in the brown adipose tissue (BAT) or beige. The present study provide recent information of the bioactive nutritional compounds capable of inducing thermogenesis and therefore capable of generate positive effects on health.

Adipocyte

Browning

Heat

Obesity

Thermogenesis

alcohol derivative

alkaloid derivative

capsaicin

capsinoid derivative

carotenoid

curcumin

fucoxanthin

oleuropein

polyphenol derivative

polyunsaturated fatty acid

protoalkaloid derivative

unclassified drug

berry

brown adipocyte

brown adipose tissue

cardiovascular disease

insulin resistance

nutrition

obesity

Review

sour orange

tea

thermogenesis

white adipose tissue

animal

brown adipose tissue

energy metabolism

human

metabolism

obesity

physiology

white adipose tissue

Adipose Tissue, Brown

Adipose Tissue, White

Animals

Energy Metabolism

Humans

Obesity

Thermogenesis