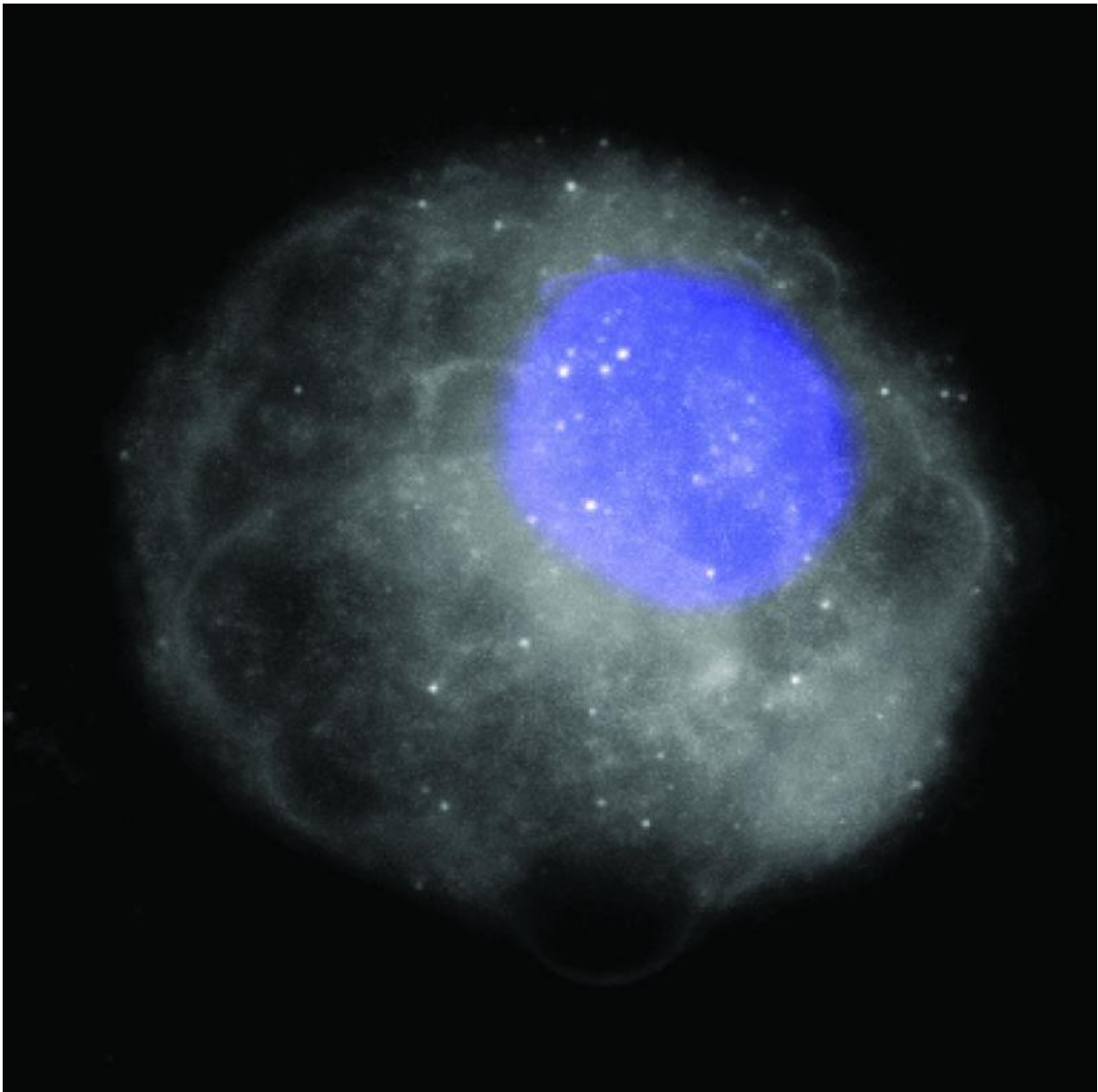


Study finds a novel way to target brown fat regulation to reduce obesity

April 23 2015



Fat tissue (white cloud) and its nucleus (in blue). Credit: Alvarez-Dominguez and Bai, et al./*Cell Metabolism* 2015

A study by researchers in Duke-NUS Graduate Medical School Singapore (Duke-NUS) has shown a new way that brown fat, a potential obesity-fighting target, is regulated in the body. This finding gives researchers and weight-loss companies a possible therapeutic target for obesity.

In an upcoming *Cell Metabolism* article, Duke-NUS Assistant Professor Sun Lei and his team examined long non-coding RNA (Ribonucleic acid) in adipose (fat) tissue in mice. Long non-coding RNAs have recently become appreciated as important control elements for different biological functions in the body.

The team created a catalogue of 1,500 long non-coding RNA in mouse adipose tissues - which is the most comprehensive catalogue ever created of its type. Using the catalogue, they were then able to identify a specific long non-coding RNA without which the brown fat cell cannot develop properly.

Brown fat is currently under intense study for its potential role in obesity prevention. There are two types of [adipose tissue](#) found in the human body - white adipose tissue (white fat) and [brown adipose tissue](#) (brown fat). Brown fat is needed for heat generation in babies, and it was previously believed that as we grow up, our brown fat disappears. However, it is now clear that brown fat can still develop in adults, where it has been shown to speed up metabolism and burn calories.

"We wanted to investigate what makes brown fat unique," explained Dr. Lei, who is from the Cardiovascular and Metabolic Diseases Programme

at Duke-NUS. "The mechanisms that drive or guide the development of brown fat will have therapeutic potential, and we are excited to have found such a mechanism. Additionally, this research adds to our growing expertise on obesity and diabetes at Duke-NUS."

Worldwide, more than 1.9 billion adults were classified as overweight while 600 million of these adults were found to be obese. The worldwide prevalence of obesity has more than doubled between 1980 and 2014. As the proportion of people who are overweight and obese rise, so does the risk of its associated diseases. In fact, most of the world's population live in countries where being overweight and obese kills more people than being underweight. There is an urgent need to develop a new therapeutic strategy for obesity.

The next step before this new knowledge can be applied is to identify such a long non-coding RNA in humans. Researchers and pharmaceutical companies can then test ways to exploit long coding RNA to maximise [brown fat](#) production in order to speed up weight loss.

Provided by Duke-NUS Graduate Medical School Singapore

Citation: Study finds a novel way to target brown fat regulation to reduce obesity (2015, April 23) retrieved 20 March 2024 from <https://medicalxpress.com/news/2015-04-brown-fat-obesity.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.
