

Journal home

Advance online
publication
Current issue
Archive
Press releases

Online submission

For authors
For referees
Contact editorial office
About the journal
For librarians
Subscribe
Advertising
naturereprints
Contact NPG
Customer services
Site features

NPG Subject areas

Access material from all our
publications in your subject
area:

- Biotechnology
- Cancer
- Chemistry
- Dentistry
- Development
- Drug Discovery
- Earth Sciences
- Evolution & Ecology
- Genetics
- Immunology
- Materials Science
- Medical Research
- Microbiology
- Molecular Cell Biology
- Neuroscience
- Pharmacology
- Physics

browse all publications

November 2002, Volume 26, Number 11, Pages 1459-1464

[Table of contents](#) [Previous](#) [Abstract](#) [Next](#) [Full text](#) [PDF](#)

Paper**Beneficial effects of tea catechins on diet-induced obesity:
stimulation of lipid catabolism in the liver**

T Murase, A Nagasawa, J Suzuki, T Hase and I Tokimitsu

Biological Science Laboratories, Kao Corporation, Tochigi, Japan

*Correspondence to: I Tokimitsu, Biological Science Laboratories, Kao Corporation,
2606 Akabane, Ichikai-machi, Haga-gun, Tochigi 321-3497, Japan. E-mail:
tokimitsu.ichirou@kao.co.jp*

Abstract

OBJECTIVE: Obesity has increased at an alarming rate in recent years and is now a worldwide health problem. We investigated the effects of long-term feeding with tea catechins, which are naturally occurring polyphenolic compounds widely consumed in Asian countries, on the development of obesity in C57BL/6J mice.

DESIGN: We measured body weight, adipose tissue mass and liver fat content in mice fed diets containing either low-fat (5% triglyceride (TG)), high-fat (30% TG), or high-fat supplemented with 0.1-0.5% (w/w) tea catechins for 11 months. The β -oxidation activities and related mRNA levels were measured after 1 month of feeding.

RESULTS: Supplementation with tea catechins resulted in a significant reduction of high-fat diet-induced body weight gain, visceral and liver fat accumulation, and the development of hyperinsulinemia and hyperleptinemia. Feeding with tea catechins for 1 month significantly increased acyl-CoA oxidase and medium chain acyl-CoA dehydrogenase mRNA expression as well as β -oxidation activity in the liver.

CONCLUSION: The stimulation of hepatic lipid metabolism might be a factor responsible for the anti-obesity effects of tea catechins. The present results suggest that long-term consumption of tea catechins is beneficial for the suppression of diet-induced obesity, and it may reduce the risk of associated diseases including diabetes and coronary heart disease.

International Journal of Obesity (2002) **26**, 1459-1464.
doi:10.1038/sj.ijo.0802141

Keywords

tea catechins; obesity; visceral fat; liver fat; β -oxidation

Received 14 January 2002; revised 20 May 2002; accepted 27 May 2002

November 2002, Volume 26, Number 11, Pages 1459-1464

[Table of contents](#) [Previous](#) [Abstract](#) [Next](#) [Full text](#) [PDF](#)