

Scientists identify a possible therapeutic target for regulating body weight

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A new study published online in *The FASEB Journal* reveals a novel gene involved in maintaining body weight. Specifically, the study suggests that GTRAP3-18 interacts with pro-opiomelanocortin (POMC) in the hypothalamus to regulate food intake and blood glucose levels. Inhibiting the interaction between GTRAP3-18 and POMC might be a strategy for treating leptin/insulin resistance in patients with obesity and/or type 2 diabetes.

"Eating too much or too little could actually be a genetic problem, rather than an insulin issue," said Toshio Nakaki, M.D., Ph.D., a researcher in the Department of Pharmacology, Teikyo University School of Medicine, in Tokyo, Japan. "Drugs targeting the GTRAP3-18 gene could be therapeutic for obesity or appetite-related disorders."

Nakaki and colleagues analyzed a group of mice defective in the GTRAP3-18 gene. The GTRAP3-18-deficient mice were lean as compared with wild type mice. The leanness was due to neither increased locomotive activity nor basal metabolism, but rather a dysregulation of feeding behavior, or hypophagia. The GTRAP3-18-deficient mice also displayed hypoglycemia.

"This revealing investigation opens a new window on what is likely to be a key regulatory loop in the food intake-weight control axis, with considerable therapeutic potential," said Thoru Pederson, Ph.D., Editor-in-Chief of *The FASEB Journal*.

More information: Koji Aoyama et al, GTRAP3-18 regulates food intake and body weight by interacting with pro-opiomelanocortin, *The FASEB Journal* (2017). [DOI: 10.1096/fj.201700421R](https://doi.org/10.1096/fj.201700421R)

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