In Brief: New drug slims down mice

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A treatment that blocks the action of ghrelin—a peptide that has been called a "hunger hormone" -- leads to weight loss and other beneficial metabolic effects in mice, according to new research.

Brad Barnett and colleagues have designed a drug that interferes with this particular peptide hormone, known to promote weight gain in mammals through a variety of mechanisms, including the stimulation of appetite.

They knew that ghrelin is not active unless it carries a specific octanoyl side chain, which is added by an enzyme called ghrelin O-acyltransferase, or GOAT.

So, Barnett and his team designed a peptide-based drug called GO-CoA-Tat, which inhibits GOAT, and they injected it into mice that were being fed high-fat diets.

They observed that the drug improved glucose tolerance and slowed weight gain in the mice, but interestingly, it did not appear to reduce food intake, a finding that suggests the drug affects metabolism rather than appetite.

GO-CoA-Tat requires repeated injections and is therefore unlikely to be developed into a drug for human obesity, but this study does establish GOAT as a potentially valuable target for future drug development efforts.

Medical Xpress

More information: "Glucose and Weight Control in Mice with a Designed Ghrelin O-Acyltransferase Inhibitor," by B.P. Barnett et al. *Science*: DOI:10.1126/science.1196154

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