Slim down by targeting the hormone uroguanylin

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The number of people who are obese and suffer one or more of its associated health problems (including type 2 diabetes) is escalating dramatically. Researchers are seeking to identify new targets for therapeutics that could limit appetite and thereby obesity. A team of researchers, led by Scott Waldman, at Thomas Jefferson University, Philadelphia, has now uncovered one such potential target by studying the molecular control of appetite in mice.

In the study, Waldman and colleagues found that nutrient intake by mice caused cells in their gut to secrete the precursor of the hormone uroguanylin (prouroguanylin) into the blood. This travelled around the blood and was converted to uroguanylin in a region of the brain known as the hypothalamus, which is well known to be involved in decreasing appetite. The active uroguanylin was then found to bind to proteins on nerve cells known as GUCY2C receptors, triggering a cascade of events that led to decreased food intake. The data generated by Waldman and colleagues leads them to suggest that targeting this uroguanylin-GUCY2C pathway might provide a new approach to controlling appetite, obesity, and its associated health problems, something that Randy Seeley and Matthias Tschöp, at the University of Cincinnati, Cincinnati, concur with in an accompanying commentary.

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