

Drugs from lizard saliva reduces the cravings for food

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In a study with rats published in the *Journal of Neuroscience*, Assistant Professor Karolina Skibicka and her colleagues show that exendin-4 effectively reduces the cravings for food. Credit: Photo: University of Gothenburg

A drug made from the saliva of the Gila monster lizard is effective in reducing the craving for food. Researchers at the Sahlgrenska Academy, University of Gothenburg, have tested the drug on rats, who after treatment ceased their cravings for both food and chocolate.

An increasing number of patients suffering from [type 2 diabetes](#) are

offered a pharmaceutical preparation called [Exenatide](#), which helps them to control their blood sugar. The drug is a [synthetic version](#) of a [natural substance](#) called exendin-4, which is obtained from a rather unusual source – the [saliva](#) of the Gila monster lizard (*Heloderma suspectum*), North America's largest lizard.

Researchers at the Sahlgrenska Academy at the University of Gothenburg, have now found an entirely new and unexpected effect of the lizard substance.

In a study with rats published in the *Journal of Neuroscience*, Assistant Professor Karolina Skibicka and her colleagues show that exendin-4 effectively reduces the cravings for food.

"This is both unknown and quite unexpected effect," comments an enthusiastic Karolina Skibicka:

" Our decision to eat is linked to the same mechanisms in the brain which control addictive behaviours. We have shown that exendin-4 affects the reward and motivation regions of the brain"

The implications of the findings are significant" states Suzanne Dickson, Professor of Physiology at the Sahlgrenska Academy: "Most dieting fails because we are obsessed with the desire to eat, especially tempting foods like sweets. As exendin-4 suppresses the cravings for food, it can help obese people to take control of their weight," suggests Professor Dickson.

Research on exendin-4 also gives hope for new ways to treat diseases related to eating disorders, for example, compulsive overeating.

Another hypothesis for the Gothenburg researchers' continuing studies is that exendin-4 may be used to reduce the craving for alcohol.

"It is the same brain regions which are involved in food cravings and alcohol cravings, so it would be very interesting to test whether exendin-4 also reduces the [cravings](#) for alcohol," suggests Assistant Professor Skibicka.

More information: The article "The Glucagon-Like Peptide 1 (GLP-1) Analogue, Exendin-4 Decreases the Rewarding Value of Food: A New Role for the Mesolimbic GLP-1 Receptors" was published in the *Journal of Neuroscience*, in the April 4 issue.

Provided by University of Gothenburg

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