

NUTRITION HORIZON

Preliminary Research with Rats Suggests Four Natural Extracts with Anti-Obesity Effects

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Summary:While the results obtained are promising, further studies on animals are required to evaluate and confirm the anti-obesity effects of these extracts. Once their anti-obesity effects are confirmed on animals, the extracts will be tested on humans.

Feb 13 2012 --- University of Granada researchers have identified four plant extracts that might help in preventing and fighting obesity. The researchers identified the most effective plant extracts through in vitro assays; subsequently, extracts were tested on rats.

While the results obtained are promising, further studies on animals are required to evaluate and confirm the anti-obesity effects of these extracts. Once their anti-obesity effects are confirmed on animals, the extracts will be tested on humans.

In vitro assays revealed that two of these extracts –which name cannot be disclosed for confidentiality reasons- inhibited the activity of one of the key enzymes involved in the breakdown of dietary lipids, which would eventually reduce lipid absorption.

In addition, cell assays revealed that another two extracts induced the hydrolysis of the triglycerides accumulated within fat cells, thus reducing their fat content.

The effects of these extracts were tested on animals. To carry out this study, Wistar rats were used as a model for study of the absorption of a fat-rich diet, and Zucker rats -characterized for being obese rats- were used as a model for studying the effects of these extracts on body weight and plasma lipid levels in obese animals.

Two extracts were selected as they demonstrated to have potential inhibiting effects on dietary fat absorption. Rats were fed with a fat-rich diet supplemented with these extracts during three days; they showed a 6-8% increase in the fat excreted in feces, as compared to the fat excreted by rats fed with a fat-rich diet without any supplementary extract. The results suggest that this extract inhibits fat absorption.

Subsequently, obese rats were administered the two extracts that were found to reduce cell fat contents during ten weeks; lipid concentrations in plasma improved as did the parameters associated with the metabolism of glucose –which is related with diabetes and obesity.

Dietary administration of one of these extracts to obese rats significantly reduced triglyceride and cholesterol levels in plasma by 67 and 49% respectively, as compared to a control group of obese rats that received no extracts. also Glucose and insulin levels in plasma were also significantly improved. Another extract reduced free fatty acid levels in plasma by 68%, as compared to a control group of obese rats receiving no extract.

This research study was conducted by Belén San Román Arenas, at the Biosearch Life Department of Research, in collaboration with the professor at the University of Granada Department of Biochemistry and Molecular Biology II Olga Martínez Agustín, and coordinated by doctors Mónica Olivares Martín and Óscar Bañuelos Hortigüela.

According to the researchers, the introduction of any drug in food is banned by current national regulations. However, it is legal that food is enriched with natural compounds that are commonly consumed by humans. Accordingly, as the extracts selected for this study come from vegetables commonly consumed by humans, they can be used as nutritional supplements or added to food, once their effectiveness is tested and verified on humans.

Source: *University of Granada*