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Consuming probiotics for a month helps diminish fat accumulation in the liver, according to a new study

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Spanish scientists have demonstrated through an experiment on obese rats that the consumption of probiotics during thirty days helps diminish the accumulation of fat in the liver. This new finding, published today by the journal *PLOS ONE*, is a great step forward on the fight agains the Non-Alcolohic Fatty Liver Disease (NAFLD), which is closely related to obesity and diabetes.

Researchers from the 'Nutrition Biochemistry: Theurapetic Applications' group (CTS-461) and the José Mataix Institute for Nutrition and Food Technology at the University of Granada have demonstrated that the administration of three probiotic strains diminishes the accumulation of fat in the liver of obese rats.

The accumulation of fat in the liver is called steatosis and it constitutes the first stage in the NAFLD disease, which is closely related to obesity and diabetes. Given that the prevalence of these two pathologies does not cease to increase, NAFLD has also become a health problem that affects millions of people throughout the world.

Living or dead microorganisms

Probiotics are microorganisms (bacteria or yeasts) with healthy effects upon individuals that consume them in adequate doses. They were traditionally considered to be living microorganisms, but the concept was

widened since some dead microorganisms, or even their components, can display probiotic properties.

University of Granada researchers worked with three strains which are custodied at the Collection Nationale de Cultures de Microorganismes (CNCM) of the Pasteur Institute: Lactobacillus paracasei CNCM I-4034, Bifidobacterium breve CNCM I-4035 and Lactobacillus rhamnosus CNCM I-4036. During their first experiment, conducted on healthy volunteers, researchers demonstrated that all three of them are perfectly tolerable and safe for human consumption.

In this current study, the strains were administered during thirty days in the diet of Zucker rats. These rats develop obesity due to a mutation in the gene that codifies the receptor or leptine, a homone that transmits a sensation of satiety to the organism. Zucker rats are among the best characterized genetic models.

In their article, the authors describe that the administration of probiotics led to an accumulation of lipids (most of them triacylglycerides) in the liver which was significantly lower than that occurring in rats fed with a placebo.

"This new finding went hand in hand with lower values in proinflamatory molecules (tumor-a necrosis factor, interleukin 6 and liposacarid) in the serum of rats fed with probiotics. These effects were not observed in those

According to these researchers, this liver disease will not be cured with probiotics, but these microorganisms can certainly be used as support therapy in joint use with other treatment.

More information: Plaza-Diaz J, Gomez-Llorente C, Abadía-Molina F, Saez-Lara MJ, Campaña-Martin L, Muñoz-Quezada S, Romero F, Gil

A, Fontana L. "Effects of Lactobacillus paracasei CNCM I-4034, Bifidobacterium breve CNCM I-4035 and Lactobacillus rhamnosus CNCM I-4036 on hepatic steatosis in Zucker Rats." *PLOS ONE* 2014. DOI: 10.1371/journal.pone.0098401