PRESS RELEASE

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New study shows that probiotics from Probi can reduce the risk for osteoporosis

Osteoporosis constitutes a major health concern that places a huge economic burden on the health care system and entails a lot of suffering for the patients. The increasing number of fractures associated with the increasing age of the population makes it of vast importance to develop alternatives for both prevention and treatment of the disease.

A recently published study in mice shows that intake of *Lactobacillus paracasei* DSM13434, *Lactobacillus plantarum* DSM 15312 and *Lactobacillus plantarum* DSM 15313 (Probi) reduces the risk for bone loss which could in turn reduce the risk for osteoporosis and bone fractures.

Background
In Sweden there are 70 000 new cases of bone fractures reported every year linked to osteoporosis. Approximately 25% of women above the age of 65 have already experienced a fracture once. As a consequence, these women have an increased risk of experiencing more fractures later in life. Studies have shown that age related bone loss is primarily linked to environmental factors such as diet, physical activity and inflammation. It is also known that intestinal inflammatory diseases are associated with a lower bone mass which further highlights the link between the gut system and the skeleton.

The study
The present study was recently published in PLOS ONE (DOI: 10.1371/journal.pone.0092368) and was conducted under the supervision of the Ass. Prof. Klara Sjögren and Prof. Claes Ohlsson. The purpose of the study was to examine the preventive effect of probiotics on induced bone loss in a mouse model applied when studying conditions linked to menopause. Mice were treated with either *Lactobacillus paracasei* DSM13434 or a mixture of three bacterial strains, *Lactobacillus paracasei* DSM13434, *Lactobacillus plantarum* DSM 15312 and *Lactobacillus plantarum* DSM 15313 (Probi). The controls used in the study were mice with induced bone loss that did not receive any probiotics and a group of sham mice without any treatment. The mice were given the probiotics in the drinking water for a total period of 6 weeks, starting two weeks before the treatment that induced bone loss.

Results
The study shows that probiotic treatment significantly protects mice from induced bone loss as compared to the controls. Moreover, probiotic treatment results in a reduced urinary excretion of calcium and a reduced expression of markers of inflammation.

To summarize, the results in the present study show that probiotics can reduce the risk for bone loss by affecting the immune system and reducing inflammation.

Probiotics protect mice from ovariectomy-induced cortical bone loss. Ohlsson C, Engdahl C, Fåk F, Andersson A, Windahl SH, Farman HH, Movérare-Skrtic S, Islander U, Sjögren K. PLoS One. 2014 Mar 17;9(3):e92368. doi: 10.1371/journal.pone.0092368.

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ABOUT PROBI

Probi AB is a Swedish publicly traded biotechnology company that develops effective and well-documented probiotics. Through its research, Probi has created a strong product portfolio in the gastrointestinal health and immune system areas. The products are available to consumers in more than 30 countries worldwide. The customers are leading food, health-product and pharmaceutical companies in the Functional Food and Consumer Healthcare segments. Probi had sales of MSEK 102 in 2013. The Probi share is listed on NASDAQ OMX Stockholm, Small-cap. Probi has approximately 3,500 shareholders. Read more on www.probi.se.