



New year-newsletter

The good vaginal bacteria produce antibiotics.

In October and November 2014 there were a number of press references in Denmark to cover the finding of a whole new type of antibiotic - lactocillin - produced by the vagina's good bacteria. It's exciting - and can probably contribute to the explanation of how LadyBalance works. The result is a part of a major project. Researchers have found that many of the bacteria naturally present in and on the human body are able to form antibiotic-like substances. The information comes from an article published by Mohamed S. Donia and staff from the University of California.

For a food microbiologist as the inventor of LadyBalance this result is not surprising. In the food industry it has long been known and used that some lactic acid bacteria produce compounds that inhibit other bacteria. The word antibiotic does not have a good tone, so these substances have been called bacteriocins. Most bacteriocins are effective against closely related bacteria, but there are strains of *Lactobacillus*, which form substances that inhibit *Listeria*. This is used e.g. in the meat product industry.

What is then the news? The new knowledge is obtained through a complete mapping of genes in the body's bacteria. Thus the researchers have not measured the substances formed, but it has been found that many of the bacteria have the ability to produce antibiotic substances. Subsequently, they produced and characterized the substance lactocillin. It is formed by *Lactobacillus gasseri* - one of the good vaginal bacteria. Lactocillin is active against classical pathogenic bacteria such as *Staphylococcus aureus* and *Enterococcus faecalis*, but not against *E. coli*. Related to bacterial vaginosis it is particularly exciting that lactocillin has an inhibitory effect against *Gardnerella vaginalis* (the common cause of BV), while it does not bother the good vaginal bacteria *Lc. jensenii*, *Lc. gasseri* and *Lc. crispatus*.

It has yet to be measured - and thus detected - lactocillin in the vagina, but the advanced

molecular genetic methods provide an indication that it can be produced.

Scientists are excited about the new results. So are we. It has once again shown that women have the tools to ensure a healthy body - sometimes they just need a little help.

Just a summary: LadyBalance lactose vaginal tablets works by providing the vagina's own bacteria with nutrients so that they can grow, produce lactic acid - and probably other beneficial substances.

Mohamed S. Donia, Peter Cimermancic, Christopher J. Schulze, Laura C. Wieland Brown, John Martin, Makedonka Mitreva, Jon Clardy, Roger G. Linington, and Michael A. Fischbach (2014), A Systematic Analysis of Biosynthetic Gene Clusters in the Human Microbiome Reveals a Common Family of Antibiotics

Cell 158, 1402–1414, September 11, 2014. <http://dx.doi.org/10.1016/j.cell.2014.08.032>