

Bacterial translocation-The mechanism of protection of living organisms: New ways in the pharmaceutical industry

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The results of experimental (562 animals) and clinical (582 patients) studies have revealed new data on the mechanism of action of live bacterial medications (probiotics). In the world literature the phenomenon of bacterial translocation from the gastrointestinal tract is principally described as a pathological process occurring due to stress, immune deficiency, blood loss, and etc. We have obtained the data that translocation is preeminently a powerful protective mechanism of living organisms against infections and other pathological processes. Living bacteria contained in probiotics penetrate in a small percentage into the blood concentrating in the immune system and in the nidus of infection. This is the way of immunostimulation. In the nidus of infection bacteria, by analogy with "biofactory", can produce antibiotics, bacteriocins, enzymes, etc., thus providing a therapeutic effect. The study of the phenomenon of translocation opens up opportunities for the development of new medical preparations. Thus, we have created the first in the world antibiotic-producing probiotic – Sporobacterin (*Bacillus subtilis* 534 strain). In Russia, Sporobacterin is registered as a medication. It has been widely used as an alternative to modern antibiotics for the prevention and treatment of various forms of surgical infections since 2001. Moreover, in contrast to antibiotics, Sporobacterin encourages normalization of the intestine microflora composition, normalizes digestion processes, etc. Sporobacterin is exported to Kazakhstan and Kyrgyzstan; it is registered as a medication in Belarus, and is being registered in Ukraine. We also derived a natural strain of bacteria releasing into the environment a previously unknown fibroblast growth factor. The activity of the new factor satisfies the standards (1 nanogram per milliliter of medium). The new growth factor promotes the full skin engraftment in the treatment of deep burns and stops hemorrhage.

Biography

Vyacheslav Nikitenko, 60 years old, defended his doctoral thesis in 1986 and received the title of Professor of Traumatology and Orthopedics department in the Orenburg State Medical Academy, where he has been working since 1976. The main sphere of scientific interests is a surgical infection. He has discovered a previously unknown bacterial protective mechanism of living organisms. He has published 3 papers in London and 182 papers in various journals in Russia. He received patents for 28 inventions in Russia, the USA, Australia, Japan, England, France and several other countries.

Maria Nikitenko, 35 years old, Candidate of Medical Sciences (Ph.D. in medical sciences), defended her Ph.D. thesis in 2001. She is the author of 12 published in Russia works.

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