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Probiotics and/in P4: Personalization, Prevention, Prediction and Patients

Nadiya Boyko[1]*, Tamara Meleshko[1], Viktoriia Bati[1] and **Olga Levchuk[1, 2]**
[1]Uzhhorod National University, Ukraine
[2]Astra-Dia, Diagnostic Centre, Ukraine

New ideas about the uniqueness of the human microbiome and its decisive role in the health of the population today substantiate the idea of individualization of treatment approaches for patients (patient stratification) and individualized prevention. The latter being the prevention of diseases of the population through the specific implementation of personalized nutrition. Embodied in this is the selection of different biotics (pro-, pre-, syn-, pharma- and immuno-biotics).They need to be 1) unique to each individual; 2) specific, and therefore diagnostic for each type of disease.

Based on these approaches we created the new human pharmabiotics. At the core of both biotics modifiers is the initial composition of synergistically selected microorganisms of the normal commensal microbiota and prebiotic ingredients prescreened and extracted from edible plants. Their composition can be changed and adapted according to the individual patients' requirements and to any nosology. This is done by selecting the necessary components and their specific combination in accordance with existing bioactive substances databases and their impact on representatives of commensal, pathogenic and opportunistically pathogenic microbiota.

We had tested their ability specifically modulate local and systemic immune response in experiments in numerous animal models and also on human dendritic cells derived from peripheral blood monocytes. One of the key aspects in the development of such specified, truly personalized bioticsis the geographical aspect, because on the one hand the microbiome state is adjusted by different local epigenetic factors including diet (composition, properties, content of biologically active compounds and impact) and on the other hand, determined by local factors.

In light of the aforementioned, we believe that such biotics are as promising as mono- or fixed structure pro-, pre- and synbiotics due to the fact that in addition to the impact of functionality regulation, their selectivity also helps to restore the individuals' microbiome biodiversity.

Biography:

Nadiya Boyko, Ph.D., DSc. in Microbiology, 5 years sabbatical Research Fellow in Laboratory of Mucosal Immunology, University of Pennsylvania, USA, now Professor at the Faculty of Medicine of Uzhhorod National University, Director of the R&D Centre of Molecular Microbiology and Mucosal Immunology. She has published more than 200 papers, including chapter in Mucosal immunology Elsevier press. She is an expert is pharmabiotics and personalised nutrition, regulation of human [gut] microbiota for prevention of non communicable diseases. She is member of SMI, SOMED, ASA, SMU.

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