Symbiotic bacteria and their therapeutic potential

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Man and microbes are intimate partners in a symbiotic system. This complex network is characterized by numerous interdependent physiological processes at multiple interfaces, a well balanced functional field essential for health. A flood of data generated in most recent times allows surprising insights into this system offering promising chances in adaptive control of this intricate clockwork to be utilized in future well targeted research and to be applied in new therapeutic concepts. In such approaches, microbes will play a decisive role as it became apparent that many metazoan functions are influenced by symbiotic microbial communities. A special focus is the immune system in the novel appreciation of organizing the communication between multicellular organisms and microbes. Particular attention is paid to microbes as preventive and therapeutic agents in immunomodulation, as reflected in a rising number of publications on well designed and controlled studies. Our group is concentrated upon experimental and clinical studies with E. coli and E. faecalis in sinusitis, rhino sinusitis, bronchitis, tonsillitis, atopy, asthma, the irritable bowel syndrome and other disorders. A mix of recent data will be presented to illustrate the efficacy of microbiologics and how viable or dead bacteria significantly affect host systems and immune functions via regulatory signals.

Biography

Volker Rusch studied Life Sciences at different universities in Germany and the United States of America, including Biology, Ecology, Medicine and Microbiology. He was promoted to a doctorate in Sciences and holds a diploma in Biology. He is editor of numerous monographs of the Old Herborn University Seminar series, and has published more than 200 scientific articles and several books. The main focus of his activities is centered upon the functional field between prokaryonts and eukaryonts, microbes and man, respectively.

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