

Microbiome Role in Tumor Environment

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Abstract : The studies conducted show that cancer is a disease caused by populations of microbes, a notion gaining traction as the interaction between the human microbiome and the tumor microenvironment (TME) increasingly shows how environment and microbes dictate the progress and treatment of neoplastic diseases. A person's human microbiome is defined as a collection of bacteria, fungi, viruses, and other microorganisms whose structure and composition influence biological processes like immune system modulation and nutrient metabolism, which, in turn, affect how susceptible a person is to neoplastic diseases, and response to different therapies. Recent reports demonstrated the influence specific microbiome bacterial populations have on the TME, thereby altering tumoral behaviors and the TME's contributing factors that impact patients' lives. In addition, gut microbes and their SCFA products are important determinants of the inflammatory landscape of tumors and augment anti-tumor immunity, which can influence immunotherapy outcomes. Studies have also found that dysbiosis, or microbial imbalance, correlates with biological processes such as cancer progression, metastasis, and therapy resistance, leading scientists to explore the use of microbiome deficiencies as adjunctive approaches to chemotherapy and other, more traditional treatments. Nonetheless, mental health practitioners struggling to comprehend the existent gap between cancer patients with pronounced resolute capabilities and the profound clinical impact Microbiome-targeted cancer therapy has been proven to possess.

Keywords : microbiome, cancer, tumor, immune system

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