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Sommario/riassunto

This book examines the role of human microbiome in human health and diseases. The initial chapters present tools for genetic manipulation of gut microbiota and the therapeutic applications of engineered microbiota. They discuss the interaction between human microbiota and host in defining the prominent role of microbes in the development and progression of major human diseases. The book also summarizes the current applications and trends for the development, production and analytical characterization of recombinant therapeutic proteins in microbial systems. It also reviews the role of microbes in the production of vaccines and antibiotics. Further, the book presents bacterial products, including proteins, enzymes, immunotoxins and secondary metabolites, that target cancer cells and cause tumour regression. The chapters also discuss the critical role of gut microbiota dysbiosis in the pathogenesis of autoimmune disease and in bowel-related diseases. Towards the end, the book explores the role of intestinal microbiota in metabolic health and the pathogenesis of common metabolic disorders. It presents state-of-the-art insights into important aspects of United Nations—Sustainable Developmental Goal 3.
