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Nota di contenuto	Glycolysis for the microbiome generation / Alan J. Wolfe -- Pathogenesis - thoughts from the front line / James P. Nataro -- Metabolic adaptations of intracellular bacterial pathogens and their mammalian host cells during infection ("pathometabolism") / Wolfgang Eisenreich, Jurgen Heesemann, Thomas Rudel, and Werner Goebel -- Small RNAs regulate primary and secondary metabolism in gram-negative bacteria / Maksym Bobrovskyy, Carin K. Vanderpool, and Gregory R. Richards -- Sialic acid and N-acetylglucosamine regulate type 1 fimbriae synthesis / Ian C. Blomfield -- Trigger enzymes: coordination of metabolism and virulence gene expression / Fabian Commichau and Jorg Stulke -- Regulating the intersection of metabolism and pathogenesis in gram-positive bacteria / Anthony R. Richardson, Greg A. Somerville, and Abraham L. Sonenshein -- Borrelia burgdorferi: carbon metabolism and the tick-mammal enzootic cycle / Arianna Corona and Ira Schwartz -- Metabolism and pathogenicity of pseudomonas aeruginosa infections in the lungs of individuals with cystic fibrosis / Gregory C. Palmer and Marvin Whiteley -- Metabolism

and fitness of urinary tract pathogens / Christopher J. Alteri and Harry L.T. Mobley -- Bacterial metabolism in the host environment: pathogen growth and nutrient assimilation in the mammalian upper respiratory tract / Sandra K. Armstrong -- Saliva as the sole nutritional source in the development of multispecies communities in dental plaque / Nicholas S. Jakubovics -- Enteric pathogens exploit the microbiota-generated nutritional environment of the gut / Alline R. Pacheco and Vanessa Sperandio -- The roles of inflammation, nutrient availability and the commensal microbiota in enteric pathogen infection / Barbel Stecher -- Host sialic acids: a delicacy for the pathogen with discerning taste / B.L. Haines-Menges, W.B. Whitaker, J.B. Lubin, and E. Fidelma Boyd -- Commensal and pathogenic escherichia coli metabolism in the gut / Tyrrell Conway and Paul S. Cohen.

Sommario/riassunto

In the 1980's, Rolf Freter, a true pioneer in the field of intestinal colonization, concluded that although several factors could theoretically contribute to a microorganism's ability to colonize the intestinal ecosystem, effective competition for nutrients is paramount to success. Freter considered this concept to apply equally to bacterial commensals and pathogens. He considered nutrient acquisition to be as critical for the success of a bacterial pathogen in its host as its ability to produce virulence factors. Despite the general acceptance of Freter's ideas, until recently, metabolism and bacterial pathogenesis were considered to be two distinctly different fields of study. Even the title of this book: Metabolism and Bacterial Pathogenesis might be interpreted as meaning that these fields are separate entities. Nothing could be further from the truth. There is no doubt that the discovery of pathogen-specific virulence factors such as fimbriae that allow adhesion to mucosal surface receptors, secreted toxins, iron acquisition systems, motility, mechanisms geared to avoid immune responses etc., have been instrumental in understanding bacterial pathogenesis and in some instances in devising ways to interfere with the pathogenic process. Nevertheless, it is becoming increasingly clear that bacterial metabolism, while not a virulence factor per se, is essential for pathogenesis and that interfering with pathogen specific metabolic pathways used during infection might lead to effective treatments.
