Antibiotics: Actions, Origins, Resistance
This book was written by the eminent biochemist Christopher Walsh, whose broad research interests include the study of antibiotic action and resistance. It is extremely well written and organized, with an abundance of excellent illustrations. The approach is to give the reader an in-depth but not exhausting coverage of several key topics in modern antibiotic research. Both novice and seasoned researcher will find much of value within the pages of this modest sized book. This important work is published at a period in time in which the resistance of a broad range of pathogenic bacteria to antibiotics has grown to alarming levels. At the same time, many pharmaceutical companies have recently abandoned research and development of new antibiotic agents. Walsh starts the book with a brief chapter on fundamental antibiotic concepts. Where do antibiotics come from? How do they work? How does resistance develop? He next launches into a thorough review of the main classes of antibiotics, interweaving antibiotic chemical structures and targets of the drugs with the underlying microbial physiology processes that are targeted. He begins with the various classes of bacterial cell wall inhibitors, emphasizing the members of the large
beta-lactam class, as well as glycopeptides and moenomycin. Next he delves into the multiple classes of protein synthesis inhibitors. He makes full use of the latest structural data emerging from X-ray crystallography of ribosomal subunits, to illustrate the mechanisms of drug action. He covers the macrolides, tetracyclines, and aminoglycosides, as well as the new glycyclcyclines and oxazolidinones. The DNA topoisomerases are next featured as targets, and the interactions of quinolone antibiotics with DNA gyrase and topoisomerase.

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