



## Antibiotics

By Gualerzi, Claudio / Brandi, Letizia

Condition: New. Publisher/Verlag: Wiley-VCH | Targets, Mechanisms and Resistance | Most of the antibiotics now in use have been discovered more or less by chance, and their mechanisms of action have only been elucidated after their discovery. To meet the medical need for next-generation antibiotics, a more rational approach to antibiotic development is clearly needed. Opening with a general introduction about antimicrobial drugs, their targets and the problem of antibiotic resistance, this reference systematically covers currently known antibiotic classes, their molecular mechanisms and the targets on which they act. Novel targets such as cell signaling networks, riboswitches and bacterial chaperones are covered here, alongside the latest information on the molecular mechanisms of current blockbuster antibiotics. With its broad overview of current and future antibacterial drug development, this unique reference is essential reading for anyone involved in the development and therapeutic application of novel antibiotics. | Preface A CHEMIST'S SURVEY OF DIFFERENT ANTIBIOTIC CLASSES Introduction Aminoglycosides Beta-Lactams Linear Peptides Cyclic Peptides Thiazolylpeptides Macrolactones Ansamycins Rifamycins Tetracyclines Oxazolidinones Lincosamides Pleuromutilins Quinolones Aminocoumarins ANTIBACTERIAL DISCOVERY: PROBLEMS AND POSSIBILITIES Introduction Why Is Antibacterial Discovery Difficult? The Problems Target Choice: Essentiality Target Choice: Resistance Cell Entry Screening Strategies Natural Products Computational Chemistry, Virtual Screening, Structure- and Fragment-Based Drug Design (SBDD and FBDD) Conclusions IMPACT OF MICROBIAL NATURAL PRODUCTS ON ANTIBACTERIAL DRUG DISCOVERY Introduction Natural Products for Drug Discovery Microbial Natural Products The Challenge of Finding Novel Antibiotics...



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