

CONTENTS

Preface	vii
Contributors	ix
1. In the Beginning There Was Streptomycin <i>Julian Davies</i>	1
2. The Biochemistry and Genetics of Aminoglycoside Producers <i>Wolfgang Piepersberg, Khaled M. Aboshanab, Heike Schmidt-Beißner, and Udo F. Wehmeier</i>	15
3. Mechanisms of Aminoglycoside Antibiotic Resistance <i>Tushar Shakya and Gerard D. Wright</i>	119
4. Design, Chemical Synthesis, and Antibacterial Activity of Kanamycin and Neomycin Class Aminoglycoside Antibiotics <i>Jinhua Wang and Cheng-Wei Tom Chang</i>	141
5. NMR Structural Studies of Aminoglycoside: RNA Interaction <i>R. Andrew Marshall and Joseph D. Puglisi</i>	181

6. Structural Comparisons Between Prokaryotic and Eukaryotic Ribosomal Decoding A Sites Free and Complexed with Aminoglycosides	209
<i>Jiro Kondo and Eric Westhof</i>	
7. Binding of Antibiotics to the Aminoacyl-tRNA Site of Bacterial Ribosome	225
<i>Dale Kling, Christine Chow, and Shahriar Mobashery</i>	
8. Metalloaminoglycosides: Chemistry and Biological Relevance	235
<i>Nikhil Gokhale, Anjali Patwardhan, and J. A. Cowan</i>	
9. Adverse Effects of Aminoglycoside Therapy	255
<i>Andra E. Talaska and Jochen Schacht</i>	
10. Targeting HIV-1 RNA with Aminoglycoside Antibiotics and Their Derivatives	267
<i>Lev Elson-Schwab and Yitzhak Tor</i>	
11. Novel Targets for Aminoglycosides	289
<i>Dev P. Arya, Nicholas Shaw, and Hongjuan Xi</i>	
Index	315