

Cambridge University Press

978-0-521-48108-3 - Fifty Years of Antimicrobials: Past Perspectives and Future Trends

Edited by P. A. Hunter, G. K. Darby and N. J. Russell

Index

[More information](#)

## INDEX

- $\alpha$ -glucans 35–7
- $\beta$ -galactosidase 262
- $\beta$ -glucans 35–8
- $\beta$ -lactam antibiotics 29, 53–63, 70, 72–3
- $\beta$ -lactam biosynthesis 140–58
- $\beta$ -lactam biosynthetic genes 147, 151, 152, 153
- $\beta$ -lactam pathway engineering 154
- $\beta$ -lactam producer-strain improvement 154
- $\beta$ -lactamases 57, 63, 153, 180
- $\beta$ -lactamase inhibitors 61, 62
- $\beta$ -methoxyacrylates 105
- $\beta$ -tubulin 44, 45, 95
- 1,2,4-trioxanes 239
- 2-pyridone 129
- 2,2-diaminopyrimidines 231
- 2,4-diaminoquinazolines 232
- 2,4-diaminotriazines 232
- 3' hydroxyl group 285
- 3TC 288
- 4-aminoquinoline 231, 232
- 4-quinolinemethanols 232
- (5)-9-(3-hydroxy-2-phosphonylmethoxypropyl)-cytosine (HPMPC) 288
- 5-bromovinyl uracil 289
- 5-fluorouracil 40, 290
- 5-fluorocytosine 40, 41
- 5-FU 40, 290
- 6-aminopenicillanic acid 56–60
- 7-ACA 60, 156
- 7-ADCA 155
- 7-aminocephalosporanic acid 60, 156
- 8-aminoquinoline 231, 303
- 9-phenanthrene methanols 232
- AaHIT 263–6, 268–9, 273
- Acanthamoeba polyphaga* 301, 336, 339–40
- acid tolerance 348
- AcNPV 254, 255, 260–4, 266, 267
- acquired resistance 13, 16, 43, 189, 348
- Acinetobacter* 126
- acridines 327, 344, 351
- acriflavine 5
- actinomycetes 140
- activation 288
- acute toxicity 281, 285
- ACV 180, 283, 285, 286, 289, 291, 292, 294
- ACV synthetase 143, 145, 157
- ACV tripeptide 142, 144, 146, 147, 149, 152, 158
- ACV triphosphate 285
- acyclic purine nucleoside analogues 283
- acyclic sugar 285, 286
- acyclovir – *see* ACV
- acyltransferase 149
- adenoviruses 340
- Aedes aegypti* 185
- Aedes albopictus* 186
- Aedes linneatropensis* 183
- Afipia felis* 180
- African trypanosomiasis 166, 169, 174, 176
- AIDS 21, 166, 171, 181, 287, 288, 337
- AIDS-related complex 288
- ajoene 307
- albendazole 305
- alcohols 327, 329, 335, 336, 338, 341, 343
- alexidine 343
- alkylene bisdithiocarbamates 94
- allopurinol 311
- allosamidin 32–5
- allylamines 26, 314
- alternative substrate 287
- amoebae 209
- amoebiasis 306
- amorolfine 28
- amphotericin B 20, 22, 43, 44, 171, 308, 353
- anaemia 288
- Androctonus australis* Hector insect-specific neurotoxin 263
- aniline dyes 8
- anilino-pyrimidines 104
- animal model systems 286
- antagonism 209
- antibacterial 53–63, 111–30, 139–58, 334–9, 341–6
- antibiotic biosynthetic genes 145, 206
- antibiotic misuse 179
- antibiotic production 16, 139, 208, 218
- antibiotic-resistance plasmids 206
- antibiotics 139, 207, 308
- antifungal 19–45, 85–107, 339, 346
- antimalarial 166, 167, 229–43, 300–4, 308, 310, 311, 314, 315
- antimony 171, 308, 309
- antiprotozoal 166, 75, 299–317, 339, 340, 347, 348
- anti-resistance strategies 80, 93, 96, 101
- anti-retroviral agents 287, 288
- antiseptic 2, 15, 328

Cambridge University Press

978-0-521-48108-3 - Fifty Years of Antimicrobials: Past Perspectives and Future Trends

Edited by P. A. Hunter, G. K. Darby and N. J. Russell

Index

[More information](#)

368

## INDEX

- antiviral 249–75, 279–94, 340, 347  
 antiviral nucleosides 279  
 Arabian oryx 191  
 Argentine haemorrhagic fever 182, 183  
*Artemisia annua* 229, 239, 306  
 artemisinin 167, 230, 233, 238–40, 243, 306, 307  
 arsenicals 87, 308, 309  
 athropany 129  
 artificial wound 3, 4  
 asepsis 3  
 aspergillosis 187, 188  
*Aspergillus nidulans* 141, 149, 153, 154  
*Aspergillus* spp. 21, 24, 26, 31, 39, 40, 67, 182  
 assembly of tubulin 41, 44, 45, 95, 305  
 atherosclerosis 181  
 atovaquone 230, 240, 241, 306  
 ATPase 218  
 ATP synthase 218  
 atypical pneumonia 180  
 autoclaving 193  
*Autographa californica* nuclear polyhedrosis virus – *see* AcNPV  
 avilamycins 72  
 azido group 287  
 azithromycin 308  
 azoles 23–5, 43, 90, 93, 96–8, 174, 314  
 AZT 287, 288, 293
- Babesia* spp 180  
 babesiosis 182  
*Bacillus brevis* 15, 16–19, 221  
*Bacillus licheniformis* 216  
*Bacillus subtilis* 216, 217, 219, 350  
*Bacillus thuringiensis* 220, 259  
 bacilysin 217  
 bacitracin 216  
 bacterial resistance 348  
 bacterial spores 215, 337, 344, 350  
*Bacterioides* 62  
 bactericide 331  
 bacteriolytic effect 54  
 bacteriophages 340, 353  
 bacteriostat 331  
 baculoviruses 249–75  
 BAS 490F 105  
 benanomicins 39  
 benomyl 45, 94  
 benzalkonium chloride 336  
 benzimidazoles 89, 170, 305  
 benzoic acid, 20  
 benzyl penicillin 150  
 bioavailability 291  
 bioavailable 291  
 biocides 327–56  
 biofilm 333, 349, 356
- biosynthesis of  $\beta$ -lactam antibiotics 142, 143  
 bisbiguanides 333  
 bis-quinolines 303  
*Blastomyces dermatidis* 19, 29, 31  
 blastomycosis 20  
 bleach 193  
 blood schizogony 230  
 blood transfusion 187  
 bone marrow 11, 198, 282  
 bone marrow suppression 280, 282  
 Bordeaux mixture 88, 89  
*Bordetella pertussis* 182  
 boric acid 3  
*Borrelia burgdorferi* 180, 183  
*Botrytis* 86, 87, 95, 99, 104, 105  
 bovine spongiform encephalopathy – *see* BSE  
 brain 198  
 Brazilian purpuric fever 180  
 bronopol 329, 335, 343  
 brown-tail moth 257  
 BSE 182, 192, 193, 194, 196, 197, 198, 199, 356  
 BSE – the threat to humans 197  
 BSE-infected herds 199  
 bunyavirus 183  
 burgers 197  
 BVaraU 289, 290  
 BVdU 294
- Calamys musculus* 183  
 calves 197  
*Campylobacter jejuni* 181  
 cancer 21, 40, 130, 279  
*Candida albicans* 19, 21, 26, 28, 29, 31–6, 39, 40, 42–5, 346, 353  
*Candida glabrata* 26, 43  
*Candida krusei* 43  
 candidiasis, 187  
 cannibalistic measures 181  
 captafol 89  
 captan 89  
 carbapenem 61, 143  
 carbendazim 94  
 carbolic acid 2, 6  
 carbon catabolite repression 153  
 carcinoma of the uterine cervix 181  
 Carrell Dakin treatment 3  
 cat 191, 192  
 cattle 191, 196, 199  
 cell envelope 348  
 cell-free systems 45, 74  
 cellular enzymes 288  
 cellular kinases 281, 284, 285  
 cellular polymerases 288

Cambridge University Press

978-0-521-48108-3 - Fifty Years of Antimicrobials: Past Perspectives and Future Trends

Edited by P. A. Hunter, G. K. Darby and N. J. Russell

Index

[More information](#)

## INDEX

369

- cell-wall active compounds 28
- Central Institute for Fundamental Research in Microbiology 17
- cephalosporin C synthetase 151
- cephalosporins 59–61, 142, 180, 187
- Cephalosporium* 59
- Cephalosporium acremonium* 141, 149–51, 154, 156, 157
- cephamycin 61, 152
- cerebrospinal infections 11
- cetrimide 347
- Chagas disease 166, 169, 170, 174, 176, 182, 304, 305, 311
- chain 54
- chain elongation (DNA) 286
- chain termination (DNA) 285
- cheetah 191
- chemical preservation 327
- chemical screening 76
- chemosterilization 331
- chitin 28, 29, 31, 34, 35, 346, 353
- chitin synthases 29, 31, 32
- chitinases 29, 32, 34, 35
- Chlamydia pneumoniae* 180, 181
- Chlamydia trachomatis* 119
- chlorhexidine 329, 332, 335, 336, 339, 341, 343, 345, 350, 351
- chlorine dioxide 341
- chlorine-releasing agents (CRAs) 327, 330, 332, 335
- chloroquine 112, 180, 230, 231, 233–6, 302
- chloroquine resistant 229, 233, 236, 237, 303, 310
- chromosomal DNA 281
- chronic hepatitis B 290
- chronic toxicity 285
- chrysoidine 10
- ciprofloxacin 115, 117, 19, 121, 127
- Citrobacter* 187
- civil conflict 184
- CJD 190, 191, 193, 198, 199
- CJD Surveillance Unit 191
- clavulanic acid 53, 63, 151
- clinafloxacin 128
- cloning of antibiotic genes 140
- Clostridium bifermentans* 345
- Clostridium botulinum* 339
- CMV 182, 283, 286, 291
- Coccidioides immitis* 29, 31, 35, 79
- community acquired agents 179
- competition 208
- competitive weapons 207
- complementation cloning 141
- confirmed bovine spongiform encephalopathy cases 194
- co-occluded ACNPV 262
- cooperative quinolone–DNA binding model 122, 124
- copper 94
- clarithromycin 308
- clindamycin 308
- cholesterol 22, 174,
- Coxsackie viruses 181
- 'crack' cocaine 187
- Creutzfeldt–Jakob disease – *see* CJD
- crippled virus 261
- Crohn's disease 181
- cross resistance 72, 73, 105, 129, 231, 236, 304, 310
- Cryptococcus neoformans* 20, 21, 35, 37, 39–41, 44, 67
- Cryptosporidium* 180, 339
- cryptosporidiosis 185
- cutaneous 308
- cyclic peroxides 239
- Cyclospora catayensis* 180
- cyclothialidin 74
- cyprodinil 104
- cytokines 317
- cytomegalovirus (CMV) 286
- cytotoxicity 281, 290
- Dakin's fluid (sodium hypochlorite) 3, 4
- daphnetine 241
- dATP 284
- David Hinchliffe 195
- dCTP 284
- ddC 288
- ddI 288
- deacylation 57
- 'dead-end' host 194
- deer 190
- deforestation 183
- dementias 190
- demographic and politico-economic change 184
- Dengue haemorrhagic fever 184
- deoxyribonucleotide 284
- dermatophyte 19, 26, 42
- dermatophytoses 19
- developmental defects 282
- development of resistance 181, 189
  - to antibacterials 12, 13, 16, 57, 62, 63, 68, 69, 114, 125–7, 190
  - to antifungals 43, 44, 95, 96, 98, 101
  - to antimalarials 167, 229, 231–6, 242, 302, 310
  - to antiprotozoals 167, 171, 299, 304
  - to antivirals 286, 288
  - to biocides 335–67
  - to insecticides 256, 259
- DFMO 173

Cambridge University Press

978-0-521-48108-3 - Fifty Years of Antimicrobials: Past Perspectives and Future Trends

Edited by P. A. Hunter, G. K. Darby and N. J. Russell

Index

[More information](#)

370

## INDEX

- dGTP 284
- dialkylthiocarbamates 94
- diamidines 332
- Dictyostelium* 218
- diethofencarb 95
- different selectivities 98
- differentiation of microbes 215
- difluoromethylornithine – *see* DFMO
- dihydrofolate reductase 232, 309, 310, 311
- dihydropteroate synthetase 232, 309
- dilution coefficient 331
- dimethomorph 104
- dimorphic fungi 19, 21, 28, 35, 38
- dinitrophenol 343
- diphtheria 3, 182, 185
- disinfectants 328
- disinfection policies 334
- disruption of antibiotic genes 141
- dithiocarbamates 93, 94
- DNA 120, 124, 141, 193, 273, 281, 282, 292
- DNA binding 123, 126, 284
- DNA genomes 280
- DNA gyrase 120, 122, 123
- DNA gyrase resistance to quinolones 126
- DNA helicase 284
- DNA polymerase 129, 284, 285, 286, 292, 316
- DNA repair 281
- DNA replication 127, 282, 284, 286
- DNA supercoiling 120
- DNA synthesis 281, 284, 288, 289, 292
- DNA viral 254, 280, 284, 285
- DNase 193, 284
- Domagk 10
- dormancy of the spores 218
- dose rates of fungicides 91
- Douglas fir tussock moth 257
- drug abuse 186
- drug resistance 229
- dry heat 193
- dTMP 284
- dTTP 284
- Dubos 15
- dUMP 284
- D4T 288
- D0870 174
- eastern equine encephalitis 186
- echinocandins 36, 37, 41, 44
- economic constraints 169
- effects of not using crop protection chemicals 100
- eflornithine (DFMO) 169, 312, 313
- Ehrlich 7, 10, 165, 231, 300
- eland 191
- elongation factor 45, 315
- embryo 282
- emetine 306
- enoxacin 115, 117, 118, 125, 126
- Entamoeba* 304, 305, 339
- Enterobacter* 187, 348
- Enterococcus* 180, 189
- Enterococcus faecalis* 62, 126
- Enterococcus faecium* 126, 129, 354
- Enterococcus hirae* 351
- entomopathogenic activity 211
- epidemics 19, 86, 179, 181, 188
- Epidermophyton* 19
- epimerase 150
- epoxiconazole 96, 97
- Epstein–Barr virus 283, 285
- ergosterol 22, 98, 174, 313
- ergosterol biosynthesis 23
- Erwinia carotovora* 208
- Escherichia coli* 62, 141, 180, 182, 208, 336, 348, 352
- serotype 0157 H7 182
- ethical issues 175
- ethidium bromide 351
- Eusol 7
- evernimomycins 72
- evolution of the  $\beta$ -lactam biosynthetic pathway 156
- evolutionary roles 207
- expandase 150, 151, 153
- experimental transfer of infectivity of bovine spongiform encephalopathy 196
- extended spectrum 115
- factors affecting activity of biocides 331
- famciclovir (FCV) 291, 292
- feed ban 196
- fenpiclonil 103
- ferbam 93
- fermentation 54, 154
- filamentous fungi 141
- Fildes 14
- first-generation quinolones 113
- fish 186
- Flavobacterium* 145, 151, 152
- Fleming, Alexander 53, 54
- floxacin 115
- Florey 14, 54
- fluazinam 104
- fluconazole-resistant strains 44
- fludioxonil 103
- fluorinated second-generation quinolones 116
- fluoroquinolones 113, 117, 118, 119, 120
- fluquinconazole 96, 97
- folate 309
- folic acid cycle 232, 309
- folpet 89

Cambridge University Press

978-0-521-48108-3 - Fifty Years of Antimicrobials: Past Perspectives and Future Trends

Edited by P. A. Hunter, G. K. Darby and N. J. Russell

Index

[More information](#)

## INDEX

371

- food production 99, 197  
 formaldehyde 126, 327, 331, 332, 335, 336, 339, 340, 344, 345, 352  
 formalin 7, 62  
 functional domains 124  
 fungal cell wall 28, 29, 36, 346  
 fungal membrane 22, 23, 98  
 fungal response to biocides 339, 346, 353  
*Fusarium* 95, 213  
  
 ganciclovir 283, 286, 291  
 gastritis 181  
 gastroenteritis 185  
 GCV 283, 286, 291  
 gelatine 197  
 gemsbok 191  
 gene clusters 141, 151  
 gene disruption 141  
 genetic modification 260, 269  
 genital herpes 280, 283  
 gentamicin 351, 354  
 gentian violet 20  
 germination of spores 218, 337, 338, 345, 356  
 Gerstmann–Straussler–Scheinker syndrome 190  
*Giardia* 304, 315, 339, 348  
 giardiasis 185, 304, 306  
 glucan 35–8, 353  
 glucantime 171  
 glutaraldehyde 329, 332, 335–41, 344, 345  
 glutathione 174, 309  
 glycocalyx 333, 349  
 glycopeptides 180  
 goats 190, 195, 196  
 golden hamster 190, 195, 196  
 gonococcal 10, 62  
 grafts 190  
 gramicidin 15, 216  
 gramicidin S 217–21  
 granuloviruses 249  
 greater kudu disease 191  
 griseofulvin 41, 44  
 growth hormones 190  
 guanine 292  
 guanylate kinase 285  
 Guillain–Barré syndrome 181  
 guinea pig 267  
 gut epithelium 282  
 gyrase supercoiling inhibition 74, 75, 121, 122  
  
 habituation 348, 349  
 haemolytic uraemic syndrome 180  
*Haemophilus influenzae* biotype *aegyptius* 180  
 haemopoietic system 288  
  
 half-life 289  
 halofantrine 167, 232, 301  
 hamster 192, 195  
 heat-shock proteins 349  
*Helicobacter pylori* 180, 181  
 hepatitis A 185, 187, 340  
 hepatitis B 186, 290, 332, 340, 355  
 hepatitis C 180, 182, 186  
 hepatitis D 182, 186  
 herpes keratitis 280  
 herpes simplex virus 180, 181, 280, 283, 284, 340  
 herpesviruses 280, 281, 284, 286  
 herpesvirus thymidine kinase 292  
 hexachlorophane 330, 335, 343  
 histoplasma 19, 29, 31  
 histoplasmosis 20  
 HIV 68, 182, 186, 188, 288, 332, 340, 355  
 HIV disease 288  
 HMg CoA reductase 174, 314  
 horizontal gene transfer 156  
 horizontal transfer 197  
 host range 256, 263  
 HPMPC 288  
 Human immunodeficiency viruses – *see* HIV  
 human papilloma virus 181  
 human parvovirus B19 179, 180, 181  
 human T-cell lymphotropic virus I 180, 181  
 humoral immune response 190  
 hunger 100  
 hybrid antibiotics 77  
 hydrogen peroxide 327, 339, 345  
 hydroxylase 150, 151  
 hypochlorites 3, 327, 332, 336, 344, 345  
  
 iatrogenic 21, 187, 190  
 ICI 195, 739 174, 314  
 ICIA 5504 105  
 IDU 280, 281  
 ignosterol 28  
 immunization 181  
 immunocompetent individuals 286  
 immunocompromised patients 21, 22, 188, 286  
 immunosuppression 21, 67, 181  
 incubation period 190, 192  
 indolmycin 73  
 inducers 217  
 infection course of baculoviruses 250  
 infections of the urinary tract 11  
 influenza 182, 184, 189  
 influenza A haemagglutinin 188  
 inhibitors of sterol 98, 105  
 insect genes 259  
 insecticide 249–75  
 insect nervous system 264

Cambridge University Press

978-0-521-48108-3 - Fifty Years of Antimicrobials: Past Perspectives and Future Trends

Edited by P. A. Hunter, G. K. Darby and N. J. Russell

Index

[More information](#)

372

## INDEX

- insect specific scorpion toxin gene 259
- insulin-dependent diabetes mellitus 181
- international travel 21, 181, 188
- intrinsic resistance 348–50
- introns 150
- iodine 3, 327, 336
- ionizing irradiation 193
- ionophore 212
- IPNS 142, 147, 149, 154, 156
- IPNS gene 145, 147, 157
- iron transport 212
- isopenicillin N synthase – *see* IPNS
- isothiazolones 343
- ivermectin 172
  
- ketoconazole 24, 171, 174, 174, 313, 314
- kidney 23
- kinases 281, 284
- kirromycin group 73
- Klebsiella* 62, 180
- kudu 191
- Kuru 190
  
- landmarks in fungicide discovery 87
- lankacidins 72
- lanosterol 14-demethylase 23, 24, 93
- lantibiotics 78
- Lederberg 188
- Legionella pneumophila* 180, 187, 336
- Leishmania* 170, 174, 303, 311, 313–16
- Leishmania donovani* 301, 306–8, 313, 315
- leishmaniasis 170, 171, 173, 184, 308, 309, 311
- leprosy 168
- leucocytes 5, 11
- lipid biosynthesis 313
- lipopolysaccharide 349
- liposomal amphotericin B 23, 171, 308
- liposome 308
- Lister 1–4, 54
- Listeria monocytogenes* 182, 335
- liver 198, 239, 282, 300
- liver failure 290
- lomefloxacin 115
- loss of hair 280, 282
- loss of crops 100
- LPS 349
- L-valine 292
- Lyme borreliosis 182, 183
- lymphatic filariasis 172
- lysine aminotransferase 152
  
- MAIC 116, 337
- malaria 166–77, 229–43, 299, 300, 306
- mancozeb 93
- maneb 93
  
- marmoset 196
- meat pies 197
- mechanism of action of IPNS 147
- mechanisms of resistance to biocides 348–54
- mefloquine 167, 232, 233, 235, 236, 301, 303
- melarsoprol 169, 173, 308, 309
- membrane bacterial 341, 343
- membrane disruption 343
- membrane fungal 22–8, 98
- meningococcal infections 10
- membrane potential 343
- mepacrine 231, 302
- mercuric chloride 2, 327
- mercuric reductase 351
- mercury compounds 6, 343, 351
- metabolite of sorivudine 289
- metastatic disease 282
- methicillin 57
- methicillin-resistant *Staphylococcus aureus* – *see* MRSA
- methoxyacrylates 105
- methylbenzimidazole carbamates 91, 94, 95, 96
- methylene blue 231, 300, 303
- metronidazole 304, 305
- microbe–higher animal symbiosis 215
- microbe–insect symbiosis 214
- microbe–nematode symbiosis 214
- microbe–plant symbiosis 213
- microbial antagonism 207
- microbial metabolites 39, 72
- Microsporidia 180
- Microsporon* 19
- microsporidiosis 306
- microtubules 95, 96, 303, 305
- Ministry of Agriculture, Fisheries and Food 193
- mink 190, 195
- misuse of antimicrobial agents 188
- mitochondrial DNA 281, 316
- modification of biosynthetic pathways 155
- molecular mechanism of quinolone inhibition 122
- monobactams 53, 143
- monocyclic  $\beta$ -lactam 62
- monophosphate 285
- morpholines 26–8
- motor neurone disease 195
- mouse 31, 32, 38, 165, 192, 195, 265, 267–9, 305
- mucotaneous
  - leishmaniasis 170, 171
- MRSA 57, 67, 126, 129, 182, 187, 335, 351, 355
- multidrug therapy 168

Cambridge University Press

978-0-521-48108-3 - Fifty Years of Antimicrobials: Past Perspectives and Future Trends

Edited by P. A. Hunter, G. K. Darby and N. J. Russell

Index

[More information](#)

## INDEX

373

- multiple drug resistance 67, 68, 129, 179, 189, 190, 235, 236
- multi-site activity 94
- mutagenesis 282, 286
- Mycobacteria* 332, 334, 336, 337, 339, 349, 350
- mycobactericidal agents 336
- Mycobacterium avium* – *M. intracellular complex* – see MAIC
- Mycobacterium paratuberculosis* 181
- Mycobacterium tuberculosis* 115, 116, 179, 190
- mycophenolic acid 54
- mycorrhizae 213
- mycotoxins 205, 211
- Myxobacteria* 208
- N-acetyl glucosamine 29
- Naegleria* 339
- naftifine 26
- nalidixic acid 112–14
- naphthoquinones 307
- nascent DNA strand 285
- natural products 24, 39, 41, 103, 205, 306
- negative cross resistance 95
- Neisseria gonorrhoeae* 116
- Neisseria meningitidis* 190
- nematodes 211, 214
- neoplastic disease 285, 290
- nephrotoxicity 22, 289
- neurone 284
- neutropaenia 288
- new pathogens 179, 188
- new targets 44, 316
- Nicholas Soames 195
- nifurtimox 170
- nikkomycins 29–31, 41, 44
- nitric oxide 346
- nitrite 345
- nitrofurazone 304
- Nocardia lactamdurans* 150, 153
- nocardicins 53
- norfloxacin 114, 115, 124
- nosocomial 21, 179, 188
- nucleopolyhedroviruses 249
- nucleoside 29, 31, 281, 282, 284
- nucleoside analogues 280, 281, 285–7, 289
- nucleoside monophosphate analogues 288
- nucleotide metabolism 284
- nyala 191
- obligate chain termination 287, 294
- obligate chain terminators 286, 287, 292
- occluded recombinant AcNPV 263
- occlusion bodies 249
- offal 197
- ofloxacin 115
- olivanic acids 61
- onchocerciasis 171
- opportunistic infections 179
- opportunistic pathogens 21, 179
- organ transplantation 21, 187
- organic acids 20, 327
- organomercurials 89, 327, 335, 338, 345
- Oropouche fever 182
- ostrich 190, 191
- outer membrane 341
- overuse of antibiotics 188
- ovine 193, 194
- oxacephem 62
- pamaquine 231, 300
- parabens 332, 339, 343, 345
- Paracoccidioides brasiliensis* 19, 29, 35
- paralyses 190
- paromomycin 308, 315
- parvovirus B19 181
- Pasteur 1, 2
- PCV 291, 292
- PCV-triphosphate 292
- pefloxacin 115
- peliosis hepatitis 181
- peniclovir 291, 292
- penetration barrier 73, 45
- penicillin 14, 54–62, 142, 180, 190
- penicillin binding protein 67, 153, 180
- penicillin G 55, 57, 58, 62, 143, 155
- penicillin V 55, 57, 58, 143, 155
- penicillinase 351
- penicillin-resistant pneumococci 179
- Penicillium* 54
- Penicillium chrysogenum* 54, 56, 141, 145, 149, 150, 154, 155
- Penicillium expansum* 95
- Penicillium italicum* 99
- Penicillium notatum* 54
- pentavalent antimonials 309
- pentostam 171
- peptide synthetases 145
- peptidoglycan 349
- peracetic acid 330, 337, 339
- permeability 341, 343
- permeabilizers 328
- peroxygen 327, 330, 335
- pest control 256
- pets 195
- phagocytosis 5
- pharmaceutical industry 166
- pharmacokinetics 116, 118, 130, 309
- pharmacological 36, 117
- phenolics 327, 330, 333, 335, 337, 338, 341, 345
- phenothiazines 303, 304



Cambridge University Press

978-0-521-48108-3 - Fifty Years of Antimicrobials: Past Perspectives and Future Trends

Edited by P. A. Hunter, G. K. Darby and N. J. Russell

Index

[More information](#)

374

## INDEX

- phenoxyethanol 349  
 phenylpyrroles 103  
 phosphorylated 281, 284, 285, 287–9, 292  
 phthalimides 89  
 phytoaggressins 209  
 phytoalexins 210, 211  
*Phytophthora* 213  
 phytotoxins 209, 210  
 pigs 189, 195, 196  
 pine beauty moth 257  
 pine sawfly 257  
 pitfall traps 269  
 plant growth stimulants 213, 214  
 plant pathogenic fungi 29, 85–107, 210  
 plant product 231, 306  
 plasmid-mediated resistance 352  
 Plasmids 141, 351, 353  
*Plasmodium* 167, 230, 232, 300, 303, 310  
*Plasmodium falciparum* 166, 180, 229, 235, 236, 240–2, 304, 315  
*Plasmodium ovale* 229, 230, 235  
*Plasmodium malariae* 229, 235  
*Plasmodium vivax* 229, 230, 233, 241, 316  
 pleuromutilin 73  
 pneumocandins 36, 38  
*Pneumocystis carinii* 38, 39, 44, 306  
 poliovirus 340  
 political instability 179  
 polyamines 174  
 polyenes 22, 23, 71, 308  
 polyhedral inclusion bodies 249  
 polyhedrin protein 249  
 polyhedrin-negative 261  
 polyhexamethylene biguanide 343  
 polymerase 281  
 polymerase chain reaction 188  
 polyoxins 28, 29, 30  
 population growth and movement 184  
 post-mortem examinations 193  
 potassium iodide 7, 20  
 poultry 195  
 poxviruses 280, 286  
 precursor 55  
 preservative 328  
 primaquine 230, 300  
 principal fungicide markets 101  
 prion 190, 192, 193  
 prion disease 181  
 prion hypothesis 192  
 Prn-P 192  
 probenid 289  
 prochloraz 96  
 proguanil 231, 241, 309  
 prontosil 10  
 propamidine isethionate 351, 354  
 prophylactic 2  
 propiconazole 96  
 protease inhibitors 174  
 protein kinases 287  
 protein phosphorylation 287  
 proteinases 193  
*Proteus* 349  
 proton-motive force (pmf) 343  
 protozoa 209, 339  
     response to biocides 339, 347, 354  
*Providencia stuartii* 336  
 PrPc 192  
 PrPsc 192  
 Prusiner 192  
*Pseudomonas aeruginosa* 187, 336  
*Pseudomonas syringae* 209, 210  
 puma 191  
 purine 281, 283, 309  
 putrefaction of wounds 1  
 pycocyanase 10  
 pyrimethamine 231, 241, 301, 309, 310  
 pyrimethanil 104, 105  
 pyrimidine biosynthesis 281, 309  
 pyronaridine 167, 241, 302  
 qinghaosu 239  
 quaternary ammonium compounds (QACs) 327, 332, 333, 335, 338, 340, 341, 344, 351  
 quinine 7, 231, 232, 233, 306  
 quinolone resistance 125, 126, 127  
 quinolone therapy 117–20  
 quinolone-DNA co-operative binding model 123  
 quinolones 70, 111–30  
 Q10 values 331  
 rat 38, 267  
 recombinant vaccinia virus vaccines 286  
 recombination between baculoviruses 273  
 recreational use of water 187  
 recurrences of disease 283  
 reduction in crop damage 269  
 regulation of  $\beta$ -lactam biosynthesis 153, 154  
 replication origin 284  
 research and development expenditure 101  
 resistance 79, 181  
     in bacteria 12, 13, 57, 62, 63, 68, 114, 125–7, 190  
     in fungi 43, 44, 95, 98, 101  
     in insects 256, 259  
     in malaria 167, 229, 231–6, 242  
     in protozoa 167, 171, 299, 302, 304, 310  
     in viruses 286, 288  
     to biocides 335–67  
     to penicillins 57, 62, 63, 68, 69  
     to quinolones 69, 114, 125–7, 129  
 resistance management 80, 93, 96, 101



Cambridge University Press

978-0-521-48108-3 - Fifty Years of Antimicrobials: Past Perspectives and Future Trends

Edited by P. A. Hunter, G. K. Darby and N. J. Russell

Index

[More information](#)

## INDEX

375

- resistance-reversing 236, 237, 304  
 respiratory electron transport 105  
 reverse transcriptase 180, 287, 288, 293  
 rheumatoid arthritis 181  
 rhinoceros beetle 256  
 ribonucleotide diphosphate 284  
 ribonucleotide reductase 284  
 ribonucleotides 284  
 Rift Valley fever 183  
 ring skeletons of quinolones 114  
 RNA 193, 284  
 RNAase 193  
 RNA polymerase 75, 254, 316  
 RNA synthesis 284  
*Rochalimaea henselae* 181  
 rodent-adapted scrapie 192  
 ruminants 194  
  
 safety profile 283  
 salicylic acid 20  
*Salmonella* 119  
*Salmonella muenchen* 187  
*Salmonella typhimurium* 348  
 salvage enzyme 284  
 salvage pathways 281  
 Salvarsan 7  
 Sanocrysin 9  
 sausages 197  
 schistosomiasis 171  
 scorpion toxin gene 259  
 scrapie 193, 195, 198, 199  
 screening for new compounds 71, 103, 232  
 search for new antibiotics 16, 70  
 secondary infections 271  
 secondary metabolites 206, 210, 215, 222  
 second-generation quinolones 114, 115, 116, 117, 119  
 self-inflicted epidemics 186  
 self-resistance genes to  $\beta$ -lactams 152  
 semisynthetic 57, 68  
 sequence alignment of IPNS 147  
*Serratia* spp 187, 209  
*Serratia marcescens* 334, 336  
 sheep 190, 194, 196, 198  
 shellfish 186  
*Shigella* 69, 119  
 shigellosis 187  
 side-effects 22, 119, 288  
 sideromycins 72  
 siderophores 212  
 silver compounds 327  
 silver salts 3  
 single-parent families 185  
 sleeping sickness 169, 173  
 slow virus diseases 190, 340  
 small mottled willow caterpillars 260  
 smallpox 184  
  
 sodium dichloroisocyanurate 332, 345  
 sorivudine 289, 290  
 source of sporadic CJD 198  
 soybean looper 258  
 sparfloxacin 115  
 Special Programme for Research and Training in Tropical Diseases (TDR) 166  
 species barrier 192  
 spleen 198  
 spongiform disease 199  
 spongiform encephalopathies 190–2  
 sporadic CJD 199  
 spore 218, 221  
 spores 218, 221, 337–9, 344–6  
 sporidical activity 327, 331, 344  
*Sporothrix schenckii* 19  
 sporotrichosis 20  
 sporulation 215, 216, 217, 218, 350  
 squalene epoxidase 23, 25, 26, 174  
 St Louis encephalitis virus 186  
 staphylococcal toxic shock syndrome 180, 189  
 staphylococci 3, 334  
*Staphylococcus aureus* 61, 126, 130, 217, 336, 351, 352  
*Staphylococcus epidermidis* 78, 126, 129, 130  
*Stenotrophomonas maltophilia* 189  
 sterilization 331, 339  
 sterol 22, 93, 174, 313, 314  
 sterol biosynthesis 23–8, 91, 98, 99, 306, 313, 314  
 sterol biosynthesis inhibitors 23–8, 91, 93, 174  
 streptococcal toxic shock syndrome 182, 189  
 streptococci 3, 54, 334  
*Streptococcus faecalis* 351  
*Streptococcus pneumoniae* 119, 180  
*Streptococcus pyogenes* 189  
*Streptomyces griseus* 16  
*Streptomyces* spp 61, 140  
 streptomycin 16, 69, 216  
 strobilurins 105  
 structure of quinolones 113–16  
 structure–activity relationships 26, 30, 78  
 substrate recognition 149  
 sulphanilamide 10  
 sulphite 343  
 sulphonamides (sulfonamides) 2, 20, 232  
 sulfones 232  
 sulfur (sulfur) 20, 87–9, 233  
 super-cluster 151  
 survival benefit 288  
 swimming pools 187  
 synthetic antibacterial agents 111

Cambridge University Press

978-0-521-48108-3 - Fifty Years of Antimicrobials: Past Perspectives and Future Trends

Edited by P. A. Hunter, G. K. Darby and N. J. Russell

Index

[More information](#)

376

## INDEX

- syphilis 6
- Syrian hamster transgenes 192
- syringomycin 209
- systemic fungicide 89, 90
- systemic mycoses 20
- teratogenic 28, 282, 285
- terbinafine 26, 44
- testes 282
- tetracycline 69, 233, 301, 308
- thiophanate 94
- thiophanate methyl 94
- thiosemicarbazone 279
- thiram 93
- third-generation quinolones 128
- thymidine 287
- thymidine kinase 282, 284, 285, 286, 287, 289, 292
- thymidine kinase deficiency 180
- thymidine triphosphate 281
- thymidylate synthase 284, 310
- thymus 197
- topoisomerase 45, 129, 316
- tosufloxacin 115
- toxicity 22, 23, 40, 41, 129, 236, 265, 285, 289, 290, 307, 308
- toxin genes 259
- Toxoplasma gondii* 301, 306, 307, 310
- toxoplasmosis 310
- transcription 281
- transcriptional regulation 153
- transfer of antibiotic genes 141
- transformation 141
- transmissible spongiform diseases 119, 190, 192, 340
- transudation 4
- Tréfouel 10
- triadimefon 96
- triazoles 24, 91, 96, 97, 306
- Trichomonas vaginalis* 304
- Trichophyton* 19
- Trichoplusia ni* larvae 261, 262, 263
- triphosphate 281, 284, 286, 292
- triticonazole 96
- tropical medicine 165
- tropical spastic paraparesis 181
- Trypanosoma brucei* 169, 303, 305, 313
- Trypanosoma brucei gambiense* 169, 308, 312
- Trypanosoma brucei rhodesiense* 169, 308, 312
- Trypanosoma cruzi* 170, 174, 300, 303, 305, 313, 314
- trypanothione 174, 309
- trypanothione reductase 304
- tubercle bacillus 7, 9, 10, 336
- tuberculosis 68, 176, 182, 185
- tubulin 44, 95, 305
- tubulin disruption 41, 44, 45, 95, 305
- tumourigenic 280, 282
- type II DNA topoisomerase 120, 126, 129, 316
- tyrocidine 15, 216, 217, 220
- tyrothricin 15
- ubiquinone 306
- ultraviolet light 193
- UL97 286
- uncoupler of oxidative phosphorylation 104
- UTP 284
- valaciclovir 292
- vancomycin-resistance 68
- varicella zoster virus 284, 289
- vector control 171, 229
- venereal disease 15
- Venturia* 104, 105
- verapamil 236
- verotoxin-producing *E. coli* 180
- vertical transfer of BSE 196
- Vibrio cholerae* 186
- Vibrio* spp 184
- viral capsids 353
- viral response to biocides 340, 347, 353
- virino 192
- virion 249, 254
- virus insecticides 249
- visceral leishmaniasis 171, 308, 309, 311
- vomiting 280
- VZV 185, 283–5, 289, 291–3
- Waksman 16
- waterborne organisms 184
- Whitfield's ointment 20
- world fungicide market 91
- World Health Organization 166
- world population 100
- WR 238,605 242
- WR 279,137 240
- WR 279,138 240
- Wright's slide-cell method 6
- xanthine oxidase 292
- xanthofulvin 31
- Xenorhabdus* 214
- yingzhaosu 239
- zidovudine 180, 287
- zineb 93