

Index

a

- 3-acetyl pyridine adenine dinucleotide (APAD) coenzyme 157
- active targeting 49–51
 - brain targeting 50–51
 - erythrocyte targeting 50
 - hepatocyte targeting 50
- acute oral toxicity 174
- acute toxicity LD₅₀ (lethal dose) *in vivo*, 175
- adaptive immunity
 - antibody isotype 325–326
 - B cells 325
 - Th1/Th2 response 325
 - Tregs 326
- Agaricomycetes*, 235
- alanyl-tRNA synthetase (ARS) 203
- alkaloids 214–219
- amidaquine 136
- amino acid sequences 50
- aminoacyl-tRNA synthetases (aaRSs) 189
 - as druggable targets 190–192
 - structurally characterised 190
 - structurally unannotated 201
- aminoleulinic acid (ALA) 141
- 2-amino 6-mercapto 7-methylpurine (AMMP) 193
- 8-amino-6-methoxy-4-vinylquinoline 262
- aminoquinolines 8
 - 4-aminoquinolines 252
 - antimalarial activities 257
 - drugs 270
 - SAR 257–259
 - structural activity relationship 258
 - 8-aminoquinolines 252
 - antimalarial agents 256
 - drugs 259–269
 - PQ congeners 269–270
 - PQ-CQ hybrid 280
 - SAR 255–257
- amodiaquine 8, 13, 15, 16, 31–36, 47, 107, 136
- AN2690 190, 192
- Anopheles gambiae*, 83, 237
- Anopheles* mosquitoes 5, 27, 105, 308
- antibody isotype 325–326
- antifolate combination drugs 15, 16
- antifolate compounds 34, 107
- antifolates 14, 31, 107, 114, 137
- anti-malarial chemotherapy 213
- antimalarial drug delivery
 - active drug targeting with surface modified nanocarrier 93–97
 - nanocarriers
 - advantages 89
 - liposomes 89–91
 - nano-emulsions (NE) 91–92
 - nanostructured lipid carriers 91
 - polymeric nanoparticles 92
 - SLNs 91

- antimalarial drug delivery (*contd.*)
 - passive drug targeting, conventional
 - nanocarriers 92–95
 - antimalarial drugs 31, 108
 - amidaquine 136
 - aminoquinolines 8
 - antimalarial endoperoxides 12
 - artemisinins 136
 - biguanide 11
 - categorization 107
 - chloroquine 135
 - classification 134, 136
 - diaminopyrimidines 11
 - halofantrine 136
 - hydroxynaphthoquinone 12
 - lumefantrine 136
 - mefloquine 135
 - mepacrine 134
 - methanols/aryl amino alcohol 11
 - origin of 9, 10
 - pipeline 33–34, 38
 - piperazine 136
 - quinine 134
 - resistance 14–17
 - therapeutic efficacy 32, 33
 - antimalarials
 - discovery 8
 - endoperoxides 12
 - exo-erythrocytic schizontocidal assay
 - 160
 - resistance events, timeline of
 - 124
 - anti-malaria therapy approach 86
 - antiparasitic agents 192, 241
 - anti-plasmodial drug discovery 154
 - anti-sporozoite assay 169
 - apical membrane antigen 1(AMA1)
 - 312
 - apicoplast 19
 - apicoplasts, as drug targets 140
 - DNA translation 141–142
 - fatty acids synthesis 140–141
 - lipoic acid biosynthetic pathway
 - 142
 - targeting heme biosynthesis 141
 - AQ-13 17
 - arginyl-tRNA synthetase (RRS) 199
 - ART compounds 107
 - artemisinin (ART)
 - mechanism of action 121–122
 - resistance and ACT failure 122
 - safety profile 119
 - short half-life of 119
 - WHO guidelines 123–124
 - artemisinin-based combination therapy
 - (ACT) 13, 17, 25, 34, 47, 187, 213, 237, 305
 - artemisinin compounds 34
 - artesunate 119
 - artemisinins 136
 - aryl aminoalcohol compounds 34, 107
 - aspartic proteases 138
 - atovaquone 15, 59, 107
 - ayurvedic system of medicine 227
- b**
- bacterial MRS inhibitors 203
 - B cells 325, 340, 362
 - benzotriazole carboxylic acid chloride
 - (BtcCl) 266
 - 1,3-benzoxaborole
 - intermediate compounds 289–290
 - materials and methods 286
 - in vitro* antiplasmodial activity
 - 294–297
 - 1-benzyl-2-butyl-1*H*-imidazo[4,5-*c*]
 - quinolin-4-amine (BBIQ)
 - 354–356
 - 1,3-bezoxazole 297
 - β -haematin formation 159
 - biflavonoids 224–225
 - biguanide 11
 - bio-ceramics 62–63
 - biochemical screening, of drug libraries
 - 192

- colorimetric assays 192–193
- enzyme coupled assays 193
- luciferase assays 193
- bioengineering methods 322
- blood schizonticides 107
- blood stage vaccines (BSV) 307, 311–312
- bovine serum albumin (BSA) 355
- brain targeting 50–51
- 1-bromo-4-(cyclopropyl methyl) benzene 292
- C**
- CAD benzotriazolide (CADBt) 264
- carbon nanostructures 62
- carcinogenicity 176
- carpachromene 226
- CD19 B cells 362
- CD3 T cells 359
- cell-traversal protein for ookinetes and sporozoites (CelTOS) 321
- Centers for Disease Control and Prevention 6
- chloroquine (CQ) 16, 17, 32, 135, 137, 187, 251
 - mechanism of action 109–110
 - mutations, structural
 - characterization of 110
 - resistance 15, 87, 258
 - basis of 110–112
 - evolution of 109
 - prevalence of 112
 - WHO guidelines 113
- cholesteryl ester transfer protein (CETP) 286
- chondroitin sulfate A (CSA) 313
- chorismate 142
- chronic toxicity 175
- cinnamic acid derivative chlorides (CADCl) 264
- circumsporozoite and thrombospondin-related
 - anonymous protein (CTRP) 321
- circumsporozoite protein (CPS) 50
- Circum sporozoite protein (CSP) 310
- circumsporozoite protein (CSP) 31
- cladosporin (CLD) 192, 195, 197
 - chemical structure 196
 - interaction with *Pf*KRS 196
- class I aaRSs 189
- class II aaRSs 189
- colorimetric assays 157, 192–193
- Commission on Macroeconomics and Health (CMH) 97
- corismate synthase 142
- CS protein (CSP) 20
- cycloguanil pamoate 11
- cytochrome P₄₅₀2D6 (CYP2D6) 253
- cytokines 358
- cytoplasmic metabolic processes, as drug targets
 - folate pathway 142
 - glycolytic pathway inhibition 144
 - methionine synthesis pathway 142–144
 - shikimic acid pathway 142
- cytoplasmic *Pf*KRS 195
- cytotoxic T lymphocyte (CTL) responses 354
- d**
- damage-associated molecular patterns (DAMPs) 338
- ddible mushrooms 240
- delayed death 174
- delayed parasite clearance (DPC) 121
- dendrimers 58
- dendritic cells (DCs) 324, 353
- 1-deoxy-D-xylulose 5-phosphate (DOXP) 18
- development of resistance 134
- dhfr* mutation, distribution of 117
- dhps* mutation, distribution of 117–118

- diadenosine polyphosphate (Ap4a)
 194
 diaminopyrimidines 11
 dichloro-diphenyl-trichloro-ethane
 (DDT) 30, 119
 4,7-dichloroquinoline 271
 dichroa febrifuga shrub 192
 dihydroartemisinin (DHA) 91, 119
 dihydroartemisinin 136
 dihydrofolate (DHF) 114
 dihydrofolate reductase (DHFR) 15,
 114, 142
 dihydropteroate synthase (DHPS) 15,
 114, 116, 144
 dihydroorotate dehydrogenase enzyme
 inhibition 144
N,N-diisopropylethylamine (DIEA)
 264
 dimethyl sulphoxide (DMSO) 294
 Disability-Adjusted Life-Year (DALY)
 97
 distearoyl phosphatidylcholine
 (DSPC-CHOL) 91
 diterpenes 220
 dl-threo-1-phenyl-2-palmitoylamino-3-
 morpholino-1-propanol 86
 DNA-based fluorimetric methods 159
 dose ranging test 163
 double-site enzyme-linked lactate
 dehydrogenase
 immune-detection (DELI) assay
 157
 drug development in malaria 107
 drug resistance 106
 drug resistant malaria 137
 drug targets, for antimalarial therapy
 137, 138
 apicoplasts 140
 cytoplasmic metabolic process 142
 food vacuoles 137–142
 mitochondria 144–145
 new 137
 Duffy Antigen Receptor 314
- e**
 effective dose (ED₅₀) 163
 egg phosphatidylcholine (EPC-CHOL)
 91
 either single-walled (SWCNTs) 62
 electron transport chain, of parasite
 144
 Emergency Response to Artemisinin
 Resistance (ERAR) 88
 enzyme coupled assays 193
 enzyme-linked immunosorbent assay
 (ELISA) 357
 EPA for acute-toxicity 174
 (-)-Epigallocatechin-3-gallate (EGCG)
 226
 erythrocyte membrane (RBCM) 85
 erythrocytes 64
 erythrocyte targeting 50
 4-Ethoxy Substituted Phenyl Boronic
 Acid 287
 European Medicines Agency (EMA)
 31
 ex-flagellation assay 160–161
 exo-erythrocytic schizontocidal assay
 160
 Expanded Programme on
 Immunizations (EPI) 320
ex vivo antimalarial susceptibility assay,
 for rodent malaria parasites
 170
ex vivo assays, for antimalarial drug
 delivery 169
- f**
 FACS 357
 F32-ART 119
 fatty acid synthesis, in apicoplasts 141
 febrifugine 192
 febrifugine (FF) 197
 Ferrotoporphyrin IX (FP)
 biomineralisation 159
 flavonoids 226, 240, 242
 fleshy fungi 235

- flow cytometry 158
 fluorometric assay 158–159
 food vacuoles, as drug targets
 formulation 137–142
 hemozoin crystal formation,
 inhibition of 139
 inhibiting proteasome 140
 protease enzymes 138
 targeting heme detoxification
 139–140
 fosmiomycin 18
 fractional inhibitory concentration
 (FIC) 160
 furanomycin 190
- g**
- gametocidal antimalarial drugs 137
 gametocytes 20
 gametocytocides 107
 gametogenesis 161
Ganoderma lucidum mushroom 238
 genome sequencing projects 188
 genome-wide association studies
 (GWAS) 122
 Global Plan for Artemisinin Resistance
 Containment (GPARC) 87
 Global technical strategy for malaria
 (2016–2030) 4
 glucose-6-phosphate dehydrogenase
 (G6PD) 253
 glycolysis pathway 145
 glycosaminoglycans (GAGs) 96
 glycosyl phosphatidylinositols (GPI)
 plasmodial RNA 330
 Plasmodium, 329
 GP-I 361
 Greater Mekong Subregion (GMS) 34,
 87
- h**
- haem 110
 halofuginone (HF) 136, 192, 197
 halymeniaol 224
 2-(1*H*-benzotriazole-1-yl)-1,1,3,3-
 tetramethylammonium
 tetrafluoroborate (TBTU) 264
 hematin 139
 hematozin 139
 hemoglobin 138
 hemozoin (Hz) 110, 330–331
 hemozoin polymerization 255
 hepatitis B virus surface antigen
 (HBsAg) 20, 31, 319
 hepatocyte targeting 50
 herbal medicinal products 214
 herbal medicines, for malarial
 treatment 228
 high drug dose 48
 high performance liquid
 chromatography (HPLC) 286
 high-pressure homogenization (HPH)
 52
 Hill's test, for causal prophylaxis and
 residual activity 166–167
 histidine-rich protein-2 (HRP2) 33,
 139, 305
 histidine-rich protein II (HRP II) assay
 158
 1H-NMR AND 13C-NMR 290
 HTP detection of inhibitors 193
 hydroxynaphthoquinone 12
 (*E*)-5-hydroxytephrostachin 226
 hypnozoites 308
- i**
- IFN- γ 360
 IgG1 357, 362
 IgG2a 357, 362
 I κ B α kinase complex (IKK) 329
 imidazoquinolines 355
 immunization protocol 356
 immunocompromised mice, assays
 employing 167–168
 immuno-liposomes lumefantrine 96
 imtinib 18

- indoor residual spraying (IRS) 30
 - infected red blood cells (iRBCs) 89, 355
 - innate immunity
 - dendritic cells (DCs) 323, 324
 - macrophages 322–324
 - NK cells 324
 - inorganic pyrophosphatase (PPase) 193
 - insecticide-treated mosquito nets (ITNs) 30
 - intermittent preventive treatment in infants (IPTi) 118
 - intermittent preventive treatment in pregnant women (IPTp) 118
 - in vitro* approach 153
 - in vitro* assays for antimalarial drug discovery
 - antiplasmodial efficacy, assessment of 155
 - β -haematin formation 159
 - colorimetric assay 157
 - DELI assay 157–158
 - ELISA based methods 157
 - ex-flagellation assay 160–161
 - exo-erythrocytic schizontocidal assay 160
 - flow cytometry 158
 - fluorometric assay 158–159
 - HRP II based assay 158
 - isobologram analysis 159–160
 - PCR methods 160
 - radioisotope assay 156–157
 - schizont maturation inhibition assay 156
 - in vitro* micro test technique 156
 - in vitro* micro test technique 156
 - in vitro* screening methods 161
 - in vivo* antimalarial activity, classification of 163
 - in vivo* approach 153
 - in vivo* assays for antimalarial drug discovery 162
 - anti-sporozoite assay 169
 - dose ranging test 163
 - Hill's test 166–167
 - immunocompromised mice 167–168
 - onset/recrudescence test 163–166
 - P. berghei* green fluorescent protein (PbGFP) 167
 - Peters' 4-day suppressive test 162–163
 - preventive test 166
 - primate models, for *in vivo* studies 168
 - sporontocidal assays 169
 - isobologram analysis 159–161
 - isoleucyl-tRNA synthetase (IRS) 203
 - isonitrile terpenes 219
 - isopentenyl pyrophosphate (IPP) 19
- k**
- KAE609 38
 - kaempferol 3-O-rhamnosides 226
 - Kelch-13 (K13) 121
 - ART-resistant mutations, structural distribution of 123
 - crystal structure 121
 - gene mutations 121, 122
 - Krintafel (tafenoquine) 17
- l**
- lactate dehydrogenase (LDH) 144
 - assay 173
 - inhibitors 144
 - Lapinone 213
 - Larither® 92
 - layer-by-Layer (LbL) self-assembled 59
 - LD₅₀ value 174
 - lectin adhesive-like proteins (LAPs) 321
 - leucyl-tRNA synthetase (LRS) 199
 - limit dose 174

- limit test of Lorke, for toxicity
 - assessment 175
 - lipid-based nanoplatforms
 - liposomes 54, 55
 - nanoemulsion 52–55
 - SEDDS 53
 - SLNs 54
 - lipoate 142
 - liposomes 54, 55, 89–91
 - as nanocarriers 146
 - luciferase assays 193
 - lumefantrine 136
 - lymphocytes 357
 - lysyl-tRNA synthetase (KRS) 194
- m**
- MAH-RP121-40 peptide 55
 - malaria
 - ACTs 14
 - combination therapies 47
 - definition 3
 - diagnostics
 - immunological adjuvants 66
 - nanofibers 66
 - stimuli-responsive iron oxide and gold nanoparticle reagent system 66
 - drug resistance
 - parasite and its control 30–31
 - vector and its control 29–30
 - fosmiomycin 18
 - history of 3, 4
 - imatinib 18
 - insecticide-treated bed nets 6
 - Krintafel (tafenoquine) 17
 - life cycle of 4–5
 - methylene blue 18
 - monotherapies 47
 - morbidity risk 133
 - nano formulations for malarial treatment
 - lipid-based nanoplatforms 52–55
 - polymer-based nanoplatforms 55–59
 - nanomedicine
 - biocompatibility and safety 67
 - biological challenges 67
 - IP rights 69
 - in manufacturing scale-up & reproducibility 67–68
 - nanoformulation 68
 - regulatory challenges 68
 - nanotechnology-based delivery systems
 - active targeting 49–51
 - passive targeting 49
 - rapid diagnosis and vector control 51
 - pathology 46
 - pregnant women 27
 - prevention and treatment of 4
 - risk factors of 27
 - scientific challenges 28–29
 - sevuparin 18
 - treatment
 - drug resistance 47–48
 - high drug dose 48
 - long term 48
 - recurrence and reversion of diseases 48–49
 - vaccine 31
 - BSV 311–312
 - history 306–307
 - placental 312–313
 - pre-erythrocytic vaccines 309–310
 - P.vivax* 314
 - targets and approaches 308–309
 - TBV 313
 - WSV 311
 - vaccines 18
 - vector control 47
 - malaria conferring protection
 - innate immunity
 - adaptive immunity 324–326

- malaria conferring protection (*contd.*)
 - dendritic cells (DCs) 323–324
 - macrophages 322–324
 - NK cells 324
 - malarial antigens
 - GPI 329
 - physiological events 326
 - Malaria Vaccine Development Branch 320
 - malaria vaccine implementation programme (MVIP) 320
 - mefloquine (MQ) 135, 137
 - membrane attack ookinete proteins (MAOPs) 321
 - mepacrine 134
 - merozoites 20, 311
 - methanols/aryl amino alcohol 11
 - methionyl-tRNA synthetase (MRS) 203
 - 4-Methoxy Phenyl-Bispinacolate 293
 - 4-Methoxy Phenyl Boronic Acid 293
 - 3-methyl-CQ (MCQ) 109
 - micelles 59
 - microemulsions (ME) 91
 - mitochondria, as drug targets 144–145
 - molecular methods 160
 - monensin antimalarial activity 92
 - mononuclear phagocyte System (MPS) cells 93
 - moribund status 174
 - MTT (3-[4,5-dimethylthiazol-2-yl]-2,5-diphenyl tetrazolium bromide) assay 170
 - multi-component reactions (MCRs) 273, 279
 - multidrug resistance (mdr) transporter 112
 - multi-walled (MWCNTs) 62
 - mupirocin 190, 192
 - mushrooms 235
 - anticipated antimalarial mode 242
 - antimalarial activity 237–238
 - antiparasitic activity of 241
 - anti-plasmodial activity 241
 - bioactive molecules 239–241
 - biological active compounds 240
 - biological properties of 239
 - immunomodulatory properties of 243
 - malarial history and impact 235–237
 - phytochemical properties of 241
- n**
- nanocarriers, for malarial treatment 146
 - benefits 146
 - lipid based drug delivery 146
 - liposomes 146
 - nanostructured lipid carriers 146–147
 - solid lipid nanocarriers 147
 - nanoemulsion 52, 53
 - Nanoemulsion of Arteether (ART-NE) 52
 - nano-emulsions (NE) 91–92
 - Nanoject 91
 - nanostructured lipid carriers (NLC) 54, 91, 147
 - nanosuspension 59
 - nanotechnology, in malarial treatment 146
 - naphthoquinone lapachol 213
 - naphthylisoquinolines 214
 - natural products 213
 - advantages 214
 - success with 214
 - neglected tropical diseases (NTDs) 235
 - neutral red uptake assay (NRU) 173
 - new drug targets, for antimalarial therapy 137
 - New Permeability Pathways (NPP) 85
 - next-generation sequencing (NGS) 33
 - nitro blue tetrazolium (NBT) 157
 - non-cognate amino acids 193

O

onset/recrudescence test 163–166
 1, 3, 4-oxadiazole 297
 intermediate compounds 289–290
 materials 286
 in vitro antiplasmodial activity 294
 oxamate 144

P

PAMCS 332
 parasitaemia assessment 166, 167
 parasite-infected red blood cell (pRBC)
 erythrocyte membrane (RBCM) 85
 PPM 86
 PVM 85–86
 remodelling 85
 parasite plasma membrane (PPM) 86
 parasitophorous vacuole membrane
 (PVM) 85
 passive targeting 49
 pathogen-associated molecular patterns
 (PAMPs) 326
 Pattern-recognition receptors (PRRs)
 353
 PCR based methods 160
 PEGylated liposomes 146
*Pf*CRT role, in CQ resistance 112
Pf genome 188
*Pf*K13 C580Y 122
*Pf*PRS crystal structure 198
 P-glycoprotein 1 (Pgp1) 112
 pharmacophores 273, 276
 phosphoethanolamine (PE) 329
 phytochemicals as antimalarial agents
 alkaloids 214–219
 polyphenols 224–226
 terpenes 219
 PicoGreen 159
 piperaquine 136
 piperaquine phosphate 119
 placental malaria vaccines 312–313
 plain liposomes 146

plants/formulations used, in malaria
 treatment 227
 plasmacytoid DCs (pDC) 328
 plasmid DNA immunization 306
 plasmodial RNA 330
 Hemozoin (Hz) 330–331
 TLR7 330
Plasmodium berghei 355
Plasmodium berghei ANKA (PbA) 353
Plasmodium berghei green fluorescent
 protein (PbGFP) 167
Plasmodium berghei infected mouse, for
 initial drug evaluation 162
Plasmodium chabaudi 162
Plasmodium falciparum, 3, 11, 12, 14,
 15, 17, 18, 20, 133, 252, 257, 277,
 285, 353
 asexual blood stages 155
 benzoxaborole 1, 3, 4-oxadiazole drug
 molecules 296
 IC₅₀ Values 297
 life cycle 84, 134, 135
 malaria 105
 Man4-GPI ligand 329
 molecular markers 33
 potent molecules 295
 prevalence of 305
 rapid diagnostic test (RDT) kits
 305
Plasmodium falciparum chloroquine
 resistance transporter (*Pf*CRT)
 255
Plasmodium falciparum
 circumsporozoite protein
 (*Pf*CSP) 319
Plasmodium falciparum parasitised
 RBCs (pRBCs) 88
Plasmodium falciparum
 reticulocyte-binding protein
 homolog 5 (*Pf* RH5) 312, 320
Plasmodium falciparum sporozoites
 (*Pf*SPZ) 309

- Plasmodium falciparum* strain
 - transformed by green fluorescent protein (PvGFP) 158
 - Plasmodium Lactate dehydrogenase
 - assay (pLDH) assay 157
 - Plasmodium* spp. 5, 105, 237, 358
 - blood-stage antigens 320
 - life cycle 106, 251
 - strains 266
 - Plasmodium vinckei* 162
 - Plasmodium vivax* 314
 - Plasmodium vivax* circumsporozoite
 - protein (PvCSP) 314
 - Plasmodium vivax* Duffy-Binding
 - Protein (PvDBP) 314
 - polycaprolactone nanocapsules 58
 - polymer-based nanoplatfom,
 - double-stranded ribonucleic acid (ds RNA) delivery 56–57
 - polymer-based nanoplatfoms
 - bio-inspired nanocarriers
 - erythrocytes 64
 - VLPs 63–64
 - carboxylic ionophore 57
 - chitosan nanoparticles
 - drugs 56
 - ds RNA delivery 56–57
 - cryptolepine hydrochloride 57
 - human serum albumin nanoparticles 57
 - inorganic nano-architectonics
 - bio-ceramics 62–63
 - carbon nanostructures 62
 - metallic nanocarriers 60–61
 - quantum dots 61–62
 - layer-by-Layer (LbL) self-assembled 59
 - nanocapsules
 - dendrimers 58
 - micelles 59
 - nanosuspension 59
 - poly (D, L-lactide) 58
 - polycaprolactone 58
 - polymeric hydrogel nanoparticles 59
 - poly (diethylmethyldene malonate) nanoparticles 58
 - protein-peptide-based drug delivery system 64
 - stimuli-responsive platforms
 - liquid crystalline materials 65
 - pH-responsive formulations 65
 - redox state responsive substances 65
 - thermo-responsive formulations 65
 - polymeric hydrogel nanoparticles 59
 - polymeric nanoparticles 92
 - poly (D, L-lactide) nanocapsules 58
 - polyphenols 224–226
 - post-transfer editing process 192
 - pre-erythrocytic stage 319
 - pre-erythrocytic vaccine (PEV) 19, 31, 314
 - CSP-mediated vaccines 310
 - efficacy of 309
 - RTS,S PEV 310
 - prenylated flavonoids 226
 - pre-transfer editing process 192
 - primaquine 91, 261
 - nanoemulsion 93
 - primate models, for *in vivo* studies 168
 - pro drugs 136
 - Proguanil hydrochloride 59
 - prolyl-tRNA synthetase 197, 200
 - protein-peptide-based drug delivery system 64
 - proteolysis process 138
 - purine nucleoside phosphorylase (PNPase) 193
 - Pv* genome 188
- q**
- quantum dots 61–62
 - quassinoids 224
 - quinazolinone-based compounds 198

- quinazolinone based inhibitors 192
 quinine 31, 109, 134, 137, 213
 quinoline nucleus 255
 quinolines class of drugs 107
- r**
- R21 310
 radioisotope assay 156–157
 rapid diagnostic test (RDT) kits 305
 reactive nitrogen species (RNS) 243
 reactive oxygen species (ROS) 56, 243
 receptor-based drug discovery 190
 recrudescence 86
 red blood cell membrane (RBCM) 85, 88
 red blood cells (RBC) 49
 REP8839 190
ex vivo ring-stage survival assay (RSA) 170
 rosettes 96
 RTS,-S vaccine 20
- s**
- SAR
 4-aminoquinolines 257–259
 8-aminoquinolines 255–257
 schizonticidal drugs 137
 schizont maturation inhibition assay 156
 secondary metabolites 239
 secreted ookinete adhesive protein (SOAP) 321
 selectivity index (SI) 176
 self-emulsifying drug delivery system (SEDDS) 53, 54
 self micro-emulsifying drug delivery carriers 147
 sesquiterpene lactones 219
 severe malaria, drug treatment of 120
 sevuparin 18
 Shikimate acid pathway 142–143
 silver nanoparticles (AgNP) 60
 single nucleotide substitution (SNP) 33
 solid lipid nanoparticles (SLNs) 54, 91, 147
 splenic B cells 362
 splenic lymphocytes 357
 sporontocidal assays 169
 sporozoites 4, 5, 20, 34, 306
 stage specific antimalarial drugs 106
 steroids 224
 structurally validated Pf/Pv-aarSs, as drug targets
 lysyl-tRNA synthetase (KRS) 194
 sulfadoxine-pyrimethamine (SP) 16, 113, 114, 116
 drug targets 114
 IPTi guidelines 118
 IPTp guidelines 118
 mechanism of action 114–116
 resistance mutations, structural analysis of 114
 WHO guidelines 118
 sul-forhodamine B (SRB) 173
 sulphadoxine/pyrimethamine (SP) 32
 suppressive (schizontocidal) and curative test 164
 SYBR Green I, 294
 synthetic MRS inhibitor 190
- t**
- tafenoquine 269
 T cells 358
 terpenes 219
 tetrahydrofolate (THF) 114
 T helper 1 (Th1) phenotype 353
 therapeutic efficacy studies (TES) 32
 thermo-responsive formulations 65
 threonyl-tRNA synthetase (TRS) 203
 thrombospondin-related anonymous protein 50
 Th1/Th2 response 325
 tissue schizonticides 107
 TLR2 331–333

- TLR4 333–336
 TLR5 336–337
 TLR7 330, 355
 TLR7/8 337–338
 TLR9 339–341
 TLR2 agonistic lipopeptides 334
 toll like receptors (TLRs) 353
 adjuvants
 TLR2 331–333
 TLR4 333–336
 TLR5 336–337
 TLR9 339–341
 signaling pathway 327
 toxicity assays
 in vitro tests 170
 LDH assay 172–173
 MIT assay 170–172
 neutral red uptake assay 173
 protein content assay 173
 XTT tetrazolium salt assay 172
 in vivo tests 173
 traditional knowledge system (TKS), of
 herbal plants 227
 traditional system of medicine, for
 malarial treatment 227
 transforming growth factor (TGF)
 243
 transmission blockade vaccines (TBV)
 307, 313, 321
 T-regulatory cells (Tregs) 326, 358,
 359
 triterpenes 222
 tryptophanyl-tRNA synthetase (WRS)
 201
 tubulovesicular network are structures
 (TVN) 86
 tyrosyl-tRNA synthetase 202
- u**
- Ugi-4 component condensation
 (U-4CC) method 273
 uncomplicated malaria, drug treatment
 of 120
 up-down procedure, for toxicity
 assessment 175
- v**
- vaccines, malaria 18, 31
 VAR2CSA 313
 virus-like particles (VLPs) 63–64
 von Willebrand Factor A-domain
 related protein (WARP) 321
- w**
- whole genome sequence, of *Pf/Pv* 188
 whole sporozoite vaccines (WSV) 306,
 310, 311
 with 3-(trifluoromethyl) phenol 269
 World Health Assembly 4
 World Wide Antimalarial Resistance
 Network (WWARN) 33, 38
- x**
- XTT tetrazolium salt assay 172
- z**
- zinc basic salt (ZBS) of artesunate (AS)
 65

