

List of Figures

Figure No.	Figure Caption	Page No.
1.1	Representation of an intra-erythrocytic <i>Plasmodium falciparum</i> trophozoite, highlighting key parasite intracellular compartments and the site of action of some of the major classes of antimalarial drugs	6
1.2	Biological effects of curcumin and its analogues	11
2.1	Biological assembly image for Glucosamine 6-phosphate synthase with Glucose 6-phosphate (1JXA)	34
6.1	Antimicrobial activity of hexahydroindazole analogues of Curcumin	73
6.2	Bioassay plate showing antimicrobial effect of pyrazole analogues of Curcumin by agar well diffusion methods	76
6.3	Bioassay plate showing antimicrobial effect of cycloheptanone analogues of Curcumin by agar disc diffusion methods	80
6.4	Dose-response curves of the samples (A3, A5, A8, B2, CP2) tested against <i>P. falciparum</i> (W2 strain) showing the values of inhibitory concentration of 50% growth of parasite (IC ₅₀)	81
6.5	Interaction of compound A7 with Glucosamine-6-Phosphate synthase(GlcN-6-P)	88
6.6	Comparative docking of pyrazole analogues of curcumin and flucanazole with (Ball and Stick model) glucosamine-6-phosphate synthase showing hydrogen bond interaction within the active site 1	92
6.7	Model 1 -between the observed value of biological activity on x-axis v/s Predicted value of biological activity on Y-axis	94
6.8	Model 2-between the observed value of biological activity on x-axis v/s Predicted value of biological activity on Y-axis.	95
6.9	¹ H NMR spectra of (E)-1-(7-benzylidene-3-phenyl-3,3a,4,5,6,7-hexahydro-2H-indazol-2-yl) ethanone (A1)	97
6.10	¹³ C NMR of (E)-1-(7-benzylidene-3-phenyl-3,3a,4,5,6,7-hexahydro-2H-indazol-2-yl) ethanone (A1)	98
6.11	Mass spectra of (E)-1-(7-benzylidene-3-phenyl-3,3a,4,5,6,7-hexahydro-2H-indazol-2-yl) ethanone (A1)	99
6.12	¹ H NMR spectra of (E)-1-(7-(4-chlorobenzylidene)-3-(4-chlorophenyl)-3,3a,4,5,6,7-hexahydro-2H-indazol-2-yl)ethanone(A4)	100
6.13	Mass spectra of (E)-1-(7-(4-chlorobenzylidene)-3-(4-chlorophenyl)-3,3a,4,5,6,7-hexahydro-2H-indazol-2-yl)ethanone(A4)	101
6.14	¹ H NMR spectra of (E)-1-(6-benzylidene-3-phenyl-3a,4,5,6, tetrahydro cyclopenat [c]pyrazol-2(3H)-yl) ethanone (CP1)	102
6.15	Mass spectra of (E)-1-(6-benzylidene-3-phenyl-3a,4,5,6, tetrahydro cyclopenat [c]pyrazol-2(3H)-yl) ethanone (CP1)	103
6.16	FT-IR spectra of (E)-1-(6-benzylidene-3-phenyl-3a,4,5,6, tetrahydro cyclopenat [c]pyrazol-2(3H)-yl) ethanone (CP1)	104

6.17	¹ H NMR spectra of (E)-1-(6(4-chlorobenzylidene-3-(4-chlorophenyl)-3a,4,5,6-tetrahydrocyclopenta[c]pyrazol-2(3H)-yl)ethanone (CP4)	105
6.18	Mass spectra of (E)-1-(6(4-chlorobenzylidene-3-(4-chlorophenyl)-3a,4,5,6-tetrahydrocyclopenta[c]pyrazol-2(3H)-yl)ethanone (CP4)	106
6.19	FT-IR spectra of (E)-1-(6(4-chlorobenzylidene-3-(4-chlorophenyl)-3a,4,5,6-tetrahydrocyclopenta[c]pyrazol-2(3H)-yl)ethanone (CP4)	107
6.20	¹ H NMR spectra of (E)-1-(8-benzylidene-3-phenyl-3a,4,5,6,7,8-hexahydro cyclohepta [c]pyrazol-2(3H)-yl)ethanone (C1)	108
6.21	Mass spectra of (E)-1-(8-benzylidene-3-phenyl-3a,4,5,6,7,8-hexahydro cyclohepta [c]pyrazol-2(3H)-yl)ethanone (C1)	109
6.22	¹ H NMR spectra of (E)-1-(8-(2-chlorobenzylidene)-3-(2-chlorophenyl)-3a,4,5,6,7,8-hexahydro cyclohepta[c]pyrazol-2(3H)-yl)ethanone (C2)	110
6.23	Mass spectra of (E)-1-(8-(2-chlorobenzylidene)-3-(2-chlorophenyl)-3a,4,5,6,7,8-hexahydro cyclohepta[c]pyrazol-2(3H)-yl)ethanone (C2)	111
8.1	2D interaction diagram for the complex protein-ligand: after docking interaction between 1GKC and A4	117
