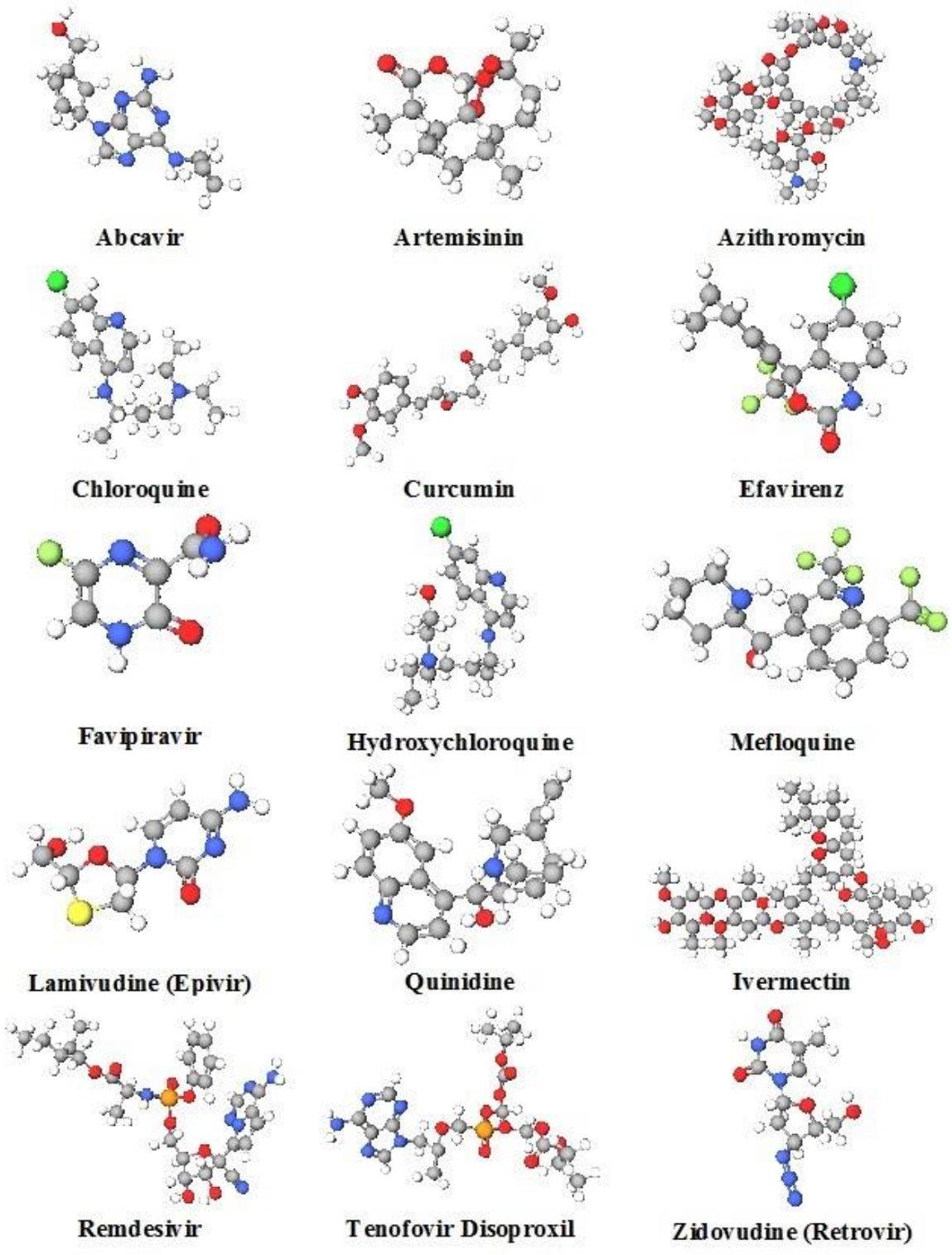

Supplementary Figure 1: Structure of the drugs used in this study

Supplementary Tables

S.no	Ligand	Interactions	Drug target	C_{max} (Peak Plasma Concentration)	Source
1.	Abacavir	Reverse-transcriptase inhibitors	HIV	~ 3.5 mcg/mL	Falettoetal., 1997
2.	Artemisinin	Cytochrome P450 2B6	Antimalarial	~ 0.7 mcg/mL	Hedrich et al., 2016
3.	Azithromycin	Macrolides stop bacterial growth	Antibacterial	~ 400 mcg/mL	Medhi et al., 2009
4.	Chloroquine	heme polymerase	Antimalarial	~ 1300 mcg/mL	Singlas, 1995
5.	Curcumin	Multidrug resistance-associated protein 5 inhibitor	Antiviral	~ 5 mcg/mL	Prehm et al ., 2013
6.	Efavirenz	non-nucleoside reverse transcriptase inhibitor	Antiretroviral	~ 4 mcg/mL	Gazzard. 1999
7.	Favipiravir	Viral RNA dependent, polymerase inhibitor	Antiviral, Influenza	~ 40 mcg/mL	Hayden et al., 2019
8.	Hydroxychloroquine	terminal glycosylation of ACE2 inhibitor	Antimalarial	~ 2 mcg/mL	Vincent et al., 2005
9.	Mefloquine	Multidrug resistance protein 1	Antimalarial	~ 2 mcg/mL	Fujita et al., 2000
10.	Lamivudine (Epivir)	non-nucleoside reverse transcriptase inhibitor	Antiretroviral	~ 2 mcg/mL	van Leeuwen 1999
11.	Quinidine	CytochromeP-450 CYP2D6 Inhibitors	Antimalarial Antiarrhythmic	~ 2 mcg/mL	Ludwig et al 1999
12.	Ivermectin	Gamma-aminobutyric acid receptor inhibitor	Antiparasitic	~ 0.1 mcg/mL	Feng et al., 200
13.	Remdesivir	Replicase polyprotein 1ab	SARS-CoV	NA	Ledford H 2020

14.	Tenofovir disoproxil	Inhibits the activity of HIV-1 reverse transcriptase	HIV	~ 3 mcg/mL	Sage et al., 2011
15.	Zidovudine	non-nucleoside reverse transcriptase inhibitor	Retroviral	~ 2 mcg/mL	https://www.merck.com/product/usa/pi_circulars/s/stromectol/stromectol_pi.pdf

Supplementary Table1 : Drug targets that are considered for the studies, its antiviral protein interactions with known concentrations were referred from previous studies

S. no.	Ligand	Spike		Membrane		Nucleocapsid		nsp10		RNA polymerase	
		ΔG (kcal/mol)	Ki (µM)	ΔG (kcal/mol)	Ki (µM)	ΔG (kcal/mol)	Ki (µM)	ΔG (kcal/mol)	Ki (µM)	ΔG (kcal/mol)	Ki (µM)
1.	Abacavir	-6.07	35.34	-6.40	20.08	-7.29	4.55	-7.89	1.64	-4.11	977.27
2.	Artemisinin	-5.38	114.43	-5.90	46.99	-7.11	6.09	-7.50	3.10	-5.01	213.91
3.	Azithromycin	-6.68	12.73	-5.76	60.23	**-8.71**	**0.41**	**-8.03**	1.29	-4.21	822.93
4.	Chloroquine	-5.21	152.94	-5.07	191.44	-7.25	4.87	-7.21	5.19	-3.29	3.85 mM
5.	Curcumin	-4.92	248.24	-4.70	361.81	**-8.75**	0.39	**-7.85**	1.77	-3.23	4.26 mM
6.	Efavirenz	-5.65	71.78	-5.35	119.08	-6.67	12.90	-7.18	5.44	-3.97	1.22 mM
7.	Favipiravir	-4.16	842.99	-4.72	345.08	-6.96	7.87	-4.76	326.87	-3.03	6.03 mM
8.	Hydroxychloroquine	-4.66	842.99	-4.53	479.42	-7.79	1.94	-7.57	2.81	-2.73	9.92 mM
9.	Mefloquine	-6.02	38.49	-4.64	395.89	-6.30	24.22	-7.49	3.23	-3.85	1.50m

											M
10.	Lamivudine (Epivir)	-5.03	205.57	-5.31	127.90	-7.81	1.90	-7.18	5.44	-3.35	3.52 mM
11.	Quinidine	-5.89	47.91	-5.20	65.95	**-11.74**	**2.50 nM**	**-8.45**	**639.nm**	-4.31	695.71
12.	Ivermectin	-6.69	12.38	-7.42	3.61	**-7.11**	**6.17**	***-9.82***	**63.20 nm**	-3.94	1.30 mM
13.	Remdesivir	-3.61	2.25 mM	-4.17	883.94	**-6.30**	**23.94**	**-6.54**	**16.02**	-0.58	375.42
14.	Tenofovir Disoproxil	-2.61	11.52 mM	-2.20	24.42 mM	-6.97	7.74	-3.93	1.3mM	-0.36	545.62
15.	Zidovudine (Retrovir)	-5.97	41.72	-6.39	20.84	-5.09	185.58	-8.03	1.31	-4.43	570.20

Supplementary Table2: Targeted proteins - ligands estimated with free energies and ki values

S.no	Protein Ligand	Spike Interacting amino acids (through hydrogen bonds) & Domains	Membrane Interacting amino acids (through hydrogen bonds) & Domains	Nucleocapsid Interacting amino acids (through hydrogen bonds) & Domains	Nsp10 Interacting amino acids (through hydrogen bonds) & Domains
1.	Abacavir	V159, Y160 (N-Terminal Domain)	D206, N210, A396, S563 (Peptidase Domain)	-	C4326, L4328, L4365, N4367 (Zinc finger groove)
2.	Artemisinin	-	W566 (Peptidase Domain)	-	-
3.	Azithromycin	Y1110 (Connecter Domain)	-	Q70, Q163, G164 (Loop 2)	T4364, L4365, N4367 (Zinc finger groove)
4.	Chloroquine	-	-	-	-

5.	Curcumin	-	Y158, S254, W610, D615, S692	L161, **Q163**, A173 (Loop 2)	K4281, L4365 (Zinc finger groove)
6.	Efavirenz	-	-	-	-
7.	Favipiravir	-	-	-	-
8.	Hydroxychloroquine	-	-	-	-
9.	Mefloquine	Non-specific (Connecter Domain)	-	Q163 (Loop 2)	-
10.	Lamivudine (Epivir)	-	-	-	-
11.	Quinidine	S803 (Heptad Repeat)	-	T165, L167 (Loop 2)	T4364, N4367 (Zinc finger groove)
12.	Ivermectin	Non-specific (Connecter Domain)	D350, N394 (Peptidase Domain)	**Q163**, A173 (Loop 2)	K4281 (Zinc finger groove)
13.	Remdesivir	-	-	-	-
14.	Tenofovir Disoproxil	-	-	-	-
15.	Zidovudine / Retrovir	S704, A706, Q895 (Connecter Domain)	D206, E208, N210, W566 (Peptidase Domain)	-	D4344, T4364, K4365, N4367 (Zinc finger groove)

Supplementary Table 3: Strong interactions between Targeted proteins - Ligands interacting domains and its amino acids identified from the best pose obtained after docking studies.

S. No	Ligand	logP	logS	logD @ pH 7
1.	Abacavir	0.61	-2.37	0.36
2.	Artemisinin	2.52	-2.35	3.11

3.	Azythromycin	3.03	-3.16	ND
4.	Chloroquine	5.28	-4.26	0.4
5.	Curcumin	3.62	-4.81	4.12
6.	Efavirenz	3.88	-4.57	4.46
7.	Favipiravir	-1.06	-2.28	-0.81
8.	Hydroxychloroquine	3.87	-4.11	-0.23
9.	Mefloquine	3.10	-4.00	1.71
10.	Lamivudine (Epivir)	-1.29	-1.92	-1.1
11.	Quinidine	2.82	-2.99	0.48
12.	Ivermectin	4.37	-5.15	ND
13.	Remdesivir	2.20	-3.25	2.01
14.	Tenofovir Disoproxil	-0.02	-2.86	3.36
15.	Zidovudine (Retrovir)	-0.10	-1.21	-0.41

Supplementary Table 4: Calculations of logP and logS of ligands (calculated using ALOGPS 2.1); logD calculated on ChemAxon