Supporting Information

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Exploring the in-silico approach for assessing the potential of natural compounds as a SARS-CoV-2 main protease inhibitors

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Table S1. Binding energies of decoy ligands against M^{pro}

Sr.No	Decoy ligands in smiles format	Binding energy (kcal/mol)
1.	Cc1cc(nc(n1)NS(=O)(=O)c2ccc(cc2)NC(=O)CCCCC(=O)Nc3ccc(cc3)S(=O)(=O)[N]c4nc(cc(n4)C)C)C	-8.42
2.	Cc1c(c2cc(ccc2[nH]1)OC)CC(=O)Oc3ccc(cc3)C(=O)OCCN4CC[NH+](CC4)CCN5CCOCC5	-8.21
3.	COC(=O)[COH]1CCCN1C(=O)C2=C[COH]([COH]([COOH](C2)OC(=O)NCCCl)OC(=O)NCCCl)NC(=O)Nc3ccccc3Br	-8.12
4.	CCOC(=O)Oc1c(cc(cc1OC)C(=O)O[COOH]2C[COOH]3C[NH+]4CCc5c6ccc(cc6[nH]c5[COOH]4C[COOH]3[COOH]([COOH]2OC)C(=O)OC)OC)OC	-7.97
5.	c1cc-2c(cc1S(=O)(=O)NCCCCCC(=O)O)C(=O)c3c2ccc(c3)S(=O)(=O)NCCCCC C(=O)[O-]	-7.91
6.	CCOC(=O)N1CCc2c(sc(c2C(=O)N)NC(=O)c3ccc(cc3)S(=O)(=O)N(CCOC)CCOC)C1	-7.90
7.	c1ccc(cc1)OCC[NH+]2CCN(CC2)C[COOH](COc3ccc(cc3)OC[COOH](CN4CCN(CC4)CCOc5ccccc5)O)O	-7.87
8.	c1cc(cnc1)[COH](C[NH2+]CCc2ccc(cc2)[N-]S(=O)(=O)c3ccc(cc3)n4c(=O)n(nn 4)CCCC5CCCC5)O	-7.85
9.	c1cnc(nc1)NS(=O)(=O)c2ccc(cc2)NC(=O)CCSCCC(=O)Nc3ccc(cc3)S(=O)(=O)[N-]c4ncccn4	-7.72
10.	c1cc(c(cc1C/C(=N/O)/C(=O)NCCSSCCNC(=O)/C(=N\O)/Cc2ccc(c(c2)Br)[O-]) Br)O	-7.68
11.	CCOC(=O)COc1ccc(cc1OC)C = NNC(=O)C(=O)N/N=C/c2ccc(c(c2)OC)OCC(=O)OCC	-7.63
12.	c1cc(ccc1C(=O)NNC(=O)CCCN2C(=O)/C(=C\3/C(=O)N(C(=S)S3)CCCC(=O)NNC(=O)c4ccc(cc4)[N+](=O)[O-])/ SC2 = S)[N+](=O)[O-]	-7.60
13.	c1ccn2c(c1)nc(c(c2 = O)/C = C\3/C(=O)N(C(=S)S3)CCCCCCCCCCCC(=O)[O-])NC COCCO	-7.58
14.	CC(=O)O[COOH]1CC[COO]2([COH](C1)CC[COOH]3[COOH]2[COOH](C[COO]4([COOH]3CC[COOH]4/C(=N\NC(=O)N)/CO[COOH]5[COH]([COOH]([COH]([COOH](O5)C(=O)OC)OC(=O)C)OC(=O)C)OC(=O)C)C)O)C	-7.55

15.	CCOc1cc(ccc1OC(=O)c2cccc(c2)OC)/C = N/NC(=O)c3c(n(nn3)c4c(non4)N)COc5ccc(cc5)F	-7.54
16.	CCN(CC)S(=O)(=O)c1ccc(cc1)C(=O)NCc2nnc(n2c3ccccc3OC)SCC(=O)Nc4nnc(s4)SCC	-7.50
17.	c1cc(ccc1C(=O)Nc2nnc(s2)CCOCCOCCc3nnc(s3)NC(=O)c4ccc(cc4)Cl)C	-7.29
18.	CC(=O)OC[COH]([CO]1(CC[COOH]2[COO]1(C[COOH]([COOH]3[COOH]2CC[COOH]4[COO]3(CC[COH](C4)O[COH]5[COOH]([COH]([COOH]([COH](O5)C(=O)OC)OC(=O)C)OC(=O)C)OC(=O)C)C)O)C)O)OC(=O)C	-7.26
19.	COc1ccc(cc1OC)CNc2nc(n(n2)C(=O)COc3ccc(cc3)Cl)NCc4ccc(c(c4)OC)OC	-7.14
20.	c1cc(cnc1)[COH](CNCCc2ccc(cc2)[N-]S(=O)(=O)c3ccc(cc3)n4c(=O)n(nn4)CC CC5CCCC5)O	-7.01
21.	Cc1ccc(cc1)S(=O)(=O)N(CCN(CCO)S(=O)(=O)c2ccc(cc2)C)CCN(CCO)S(=O)(=O)c3ccc(cc3)C	-6.97
22.	COC(=O)c1cc(c(nc1C/C(=N\NC(=S)N)/C(=N/c2ccc(c(c2)Cl)Cl)/[O])C/C(=N/NC(=S)N)/C(=N/c3ccc(c(c3)Cl)Cl)/[O-])C(=O)OC	-6.91
23.	CCN(CC)C(=O)CSc1nc2ccsc2c(=O)n1CCCC(=O)NCCc3ccc(cc3)S(=O)(=O)N	-6.88
24.	CCCCOc1ccc(cc1)C(=O)NCc2nnc(n2c3ccc(cc3)Br)SCC(=O)Nc4nnc(s4)SCC	-6.75
25.	c1ccc(cc1)OCCN2CC[NH+](CC2)C[COH](COc3ccc(cc3)OC[COH](CN4CCN(CC4)CCOc5ccccc5)O)O	-6.69
26.	c1ccc(c(c1)C(=O)NNC(=O)CCCCCN2C(=O)/C(=C\3/C(=O)N(C(=S)S3)CCCCCC(=O)NNC(=O)c4ccccc4[O-])/SC2 = S)O	-6.61
27.	Cc1c(c(sc1C(=O)OC)NC(=O)CCCS(=O)(=O)c2nc(cc(n2)C(F)(F)F)c3ccc(c(c3)OC)OC)C(=O)N	-6.57
28.	C/C(=C\CC[CO](C)(C=C)O[COH]1[COOH]([COH]([COOH]([COH](O1)COC(=O)/C(=C/CC[CO](C)(C=C)O)/C)O)OC(=O)/C(=C/CC[COO] (C)(C=C)O)/C)O)/C(=O)O	-6.55
29.	CCOC(=O)[COO](C(F)(F)F)(NC(=O)Nc1ccc(cc1)S(=O)(=O)[N-]c2nnc(s2)SCC)OCC(F)(F)F	-6.51
30.	Cc1cc(no1)C(=O)N[COOH](C)C(=O)N[COH](C(C)C)C(=O)N[COH](CC(C)C)C(=O)N[COOH](C[COH]2CCNC2 = O)/C = C/C(=O)OC	-6.44

31.	COc1cc(cc(c1OC)OC)/C=C/C(=O)O[COH]2[COOH]([COH](O[COO]2(CO)O[COOH]3[COOH]([COH]([COOH]([COH](O3)CO C (=O)c4ccc(cc4)O)O)O)O)O)CO)O	-6.38
32.	CC(=O)OC/C(=N\NC(=O)N)/[CO]1(CC[COH]2[CO]1(CC(=O)[COOH]3[COOH]2CC[COOH]4[COO]3(CC[COH](C4)O[COH]5[COOH]([COH]([COOH]([COOH](O5)C(=O)OC)OC(=O)C)OC(=O)C)OC(=O)C)C)C)O	-6.14
33.	CCN(CC)S(=O)(=O)c1ccc(cc1)C(=O)NCc2nnc(n2c3ccccc3OC)SCC(=O)Nc4ccc(cc4)OC	-6.06
34.	COc1c(c(cc(c1)/C = [NH+]/CCCN2CCN(CC2)CCC/[NH+]=C/c3cc(c(c(c3)OC)OC)OC)OC)OC	-5.93
35.	C/C(=C\CC[CO](C)(C=C)O[COH]1[COOH]([COH]([COOH]([COH](O1)CO)OC(=O)/C(=C/CC[CO](C)(C=C)O)/C)OC(=O)/C(= C/CC[COO](C) (C = C)O)/C)O)/C(=O)O	-5.84
36.	CC(=O)O[COOH]1[COH]([COOH](O[COOH]([COOH]1O)O[COOH](C/N=C/c2c3ccccc3ccc2O)[COOH](CO)O[COOH](C/ N = C/c4c5ccccc5ccc4[O-])O) CO)O	-5.69
37.	CCOC(=O)c1ccc(cc1)NC(=O)CSc2nnc(n2c3cc(ccc3OC)OC)CNC(=O)c4ccc(cc4)S(=O)(=O)N(C)C	-5.53
38.	C/C(=N\O)/C(NCCC(CCNC(/C(=N/O)/C)(C)C)CCNC(=O)CCCC(=O)Oc1c(c(c(c(c1F)F)F)F)F)(C)C	-5.48
39.	CCCCC/C=C\C/C=C\C=C/C=C\[COH]([COH](CCCC(=O)OC)O)SC[CO](C(=O)NCC(=O)[O])([NH3+])N1[COOH](CCC1 = O)C(=O)[O-]	-5.43
40.	C/C = C(\C[COOH](N(Cc1c[NH+]c(nc1N)C)C = O)O)/SS/C(=C\C)/C[COOH](N(Cc2cnc(nc2N)C)C = O)O	-5.34
41.	c1c(csc1COc2c3c(nc(n2)N)n(cn3)CCCCCCCCCO[COOH]4[COH]([COOH]([COOH]([COOH](O4)CO)O)O)O)Br	-5.27
42.	CCO[POO](=O)(CCCCCCCCCCC(=O)NCCCCCNC(=O)CCCC[COOH]1[COOH]2[COOH](CS1)NC(=O)N2)[O-]	-5.17
43.	c1ccc(c(c1)C(=O)[O])NC(=O)CCCCCN2C(=O)/C(=C\3/C(=O)N(C(=S)S3)CCCCCC(=O)Nc4ccccc4C(=O)[O-])/SC2= S	-4.92
44.	C/C = C(\C[COH](N(Cc1cnc(nc1N)C)C = O)O)/SS/C(=C\C)/C[COOH](N(Cc2cnc(nc2N)C)C = O)O	-4.87
45.	c1cc(c(cc1C[COH](C(=O)[O])OC(=O)[COOH]2[COOH]([COOH]([COOH]2C(=O)O[COOH](Cc3ccc(c(c3)O)O)C(=O) [O-])c4ccc(c(c4)O)O)c5ccc(c(c5)O) O)O)O	-4.71
46.	CC1(c2ccccc2[N+](=C1/C=C/C=C/3\C(c4ccccc4N3CCCCC(=O)NCCOCCOCC[NH2+]CCO[COOH]5[COH]([COH]([COOH]([C OOH](O5)CO)O) O)O)(C)C)C)C	-4.57
47.	CC(C)(C)OC(=O)C[NH+](CC(=O)OC(C)(C)C)[COOH](Cc1ccc(cc1)N)CN(CC(=O)OC(C)(C)C)CC(=O)OC(C)(C)C	-4.42
48.	COc1cc(c(c(c1OC)OC)S(=O)(=O)NCCOc2ccccc2)S(=O)(=O)NCCOc3ccccc3	-4.21
49.	CC[COH]([CO](C)(/C=C(\C)/C(=O)[COH](C)C[COO](C)([COOH]([COOH](C)[COOH]([COOH](C)C(=O)[O])O[COH]1C[COO]([COH]([COOH](O1)C)O)(C)OC)O[COH]2[COOH]([COH](C[COH](O2)C)[NH+](C)C)O)OC)O)O	-3.85
50.	CCCCCCCCCC(=O)O[COOH]1[COH]([COOH]([COOH](O[COOH]1O[COO]2([COOH]([COOH]([COOH](O2)CO)O)O)CO)CO)OC(=O)C(C)C)OC (=O)C(C)C	-3.68
51.	CCCCCCCCCCCCCCCCCO[COH]1[COOH]([COH]([COOH]([COH](O1)CO)O[COOH]2[COOH]([COH]([COOH]([COH](O2)CO)O)O)O)O)O	-3.12