Comparative Molecular Field Analysis (CoMFA), Molecular Docking And ADMET Study on Thiazolidine-4-carboxylic acid Derivatives as New Neuraminidase Inhibitors

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Table S1. Evaluating the robustness and validity of the CoMFA model by the Q^2 and R^2 values of the Y-randomization test.

	Q^2	R^2		Q^2	R^2
01	0.146	0.765	26	0.092	0.512
02	0.139	0.500	27	0.481	0.901
03	0.057	0.481	28	0.449	0.861
04	0.148	0.519	29	0.460	0.960
05	0.127	0.550	30	0.345	0.707
06	0.040	0.485	31	0.478	0.789
07	0.027	0.439	32	0.417	0.906
08	0.194	0.562	33	0.096	0.533
09	0.232	0.758	34	0.122	0.542
10	0.270	0.849	35	0.376	0.828
11	0.403	0.922	36	0.336	0.801
12	0.196	0.575	37	0.119	0.550
13	0.241	0.714	38	0.281	0.824
14	0.324	0.715	39	0.096	0.533
15	0.315	0.480	40	0.196	0.809
16	0.417	0.943	41	0.265	0.451
17	0.332	0.415	42	0.053	0.860
18	0.510	0.990	43	0.188	0.792
19	-0.286	0.651	44	0.185	0.774
20	0.459	0.907	45	-0.136	0.444
21	0.474	0.980	46	0.002	0.518
22	0.324	0.885	47	-0.025	0.494
23	0.489	0.691	48	0.023	0.572
24	0.356	0.972	49	0.245	0.920
25	0.407	0.966	50	0.165	0.890

Table S2. Comparison of actual and predicted pIC_{50} values, and residual values determined by the CoMFA model.

		CoMFA	
Compound	Observed pIC_{50}	Predicted	Residuals
01	4.672	4.755	0.083
02	4.695	4.643	-0.052
03*	4.742	5.215	0.473
04	4.631	4.574	-0.057
05*	4.648	4.864	0.216
06	4.910	4.810	-0.100
07	4.366	4.366	0.000
08	5.123	5.049	-0.074
09	5.234	5.178	-0.056
10	4.971	4.928	-0.043
11*	5.063	4.981	-0.082
12	5.116	5.055	-0.061
13	5.101	5.006	-0.095
14	4.889	4.979	0.090
15	5.917	5.751	-0.166
16	6.187	6.137	-0.050
17	5.717	5.608	-0.109
18*	5.607	5.764	0.157
19	5.790	5.809	0.019
20*	5.539	5.951	0.412
21	6.276	6.239	-0.037
22	6.678	6.541	-0.137
23	6.553	6.489	-0.064
24	6.854	6.780	-0.074
25	6.009	5.892	-0.117

*Test set.

Table S3. ADME properties of newly designed compounds: Evaluation of drug-like characteristics.

Compound	MW (g/mol)	Consensus Log P	Log S	CYP3A4 inhibitor	Lipinski	Bioavailability Score	Log Kp (cm/s)	Synthetic accessibility
Th1	424.47	-1.07	-1.25	No	Yes	0.55	-10.00	4.76
Th2	364.42	-0.56	-0.35	No	Yes	0.55	-10.32	4.39
Th3	398.43	-1.30	-0.85	No	Yes	0.55	-10.19	4.63
Th4	382.41	0.06	-2.13	No	Yes	0.55	-8.55	4.53
Th5	378.38	-1.29	0.05	No	Yes	0.55	-10.94	4.31
Th6	361.40	-1.07	0.15	No	Yes	0.55	-10.84	4.32

Table S4. Evaluation of safety profiles: Toxicity prediction of newly designed compounds.

Compound	Hepatotoxicity	Carcinogenicity	Immunotoxicity	Mutagenicity	Cytotoxicity	Predicted LD_{50} (mg/kg)	Class
Th1	Inactive	Inactive	Inactive	Inactive	Inactive	230	3
Th2	Inactive	Inactive	Inactive	Inactive	Inactive	8000	2
Th3	Inactive	Inactive	Inactive	Inactive	Inactive	900	4
Th4	Inactive	Inactive	Inactive	Inactive	Inactive	900	4
Th5	Inactive	Inactive	Inactive	Inactive	Inactive	900	4
Th6	Inactive	Inactive	Inactive	Inactive	Inactive	900	4

Table S5. All the results obtained from VEGA QSAR.

Compound	Mutagenicity (Ames test)	Developmental Toxicity	Skin Irritation	Plasma Protein Binding	P-Glycoprotein activity	Total body elimination half-life (hour)
Th1	Non-Mutagenic	Non-Toxicant	Non-Sensitizer	-0.3285	Non Active	2.124
Th2	Non-Mutagenic	Non-Toxicant	Non-Sensitizer	-0.099	Non Active	2.296
Th3	Non-Mutagenic	Non-Toxicant	Non-Sensitizer	-0.2242	Non Active	1.959
Th4	Non-Mutagenic	Non-Toxicant	Non-Sensitizer	-1.1011	Non Active	2.837
Th5	Non-Mutagenic	Non-Toxicant	Non-Sensitizer	-0.0484	Non Active	1.865
Th6	Non-Mutagenic	Non-Toxicant	Non-Sensitizer	-0.2455	Non Active	1.533