

3C-like 蛋白酶抑制剂的构效关系、分子对接和分子动力学

林 峰¹ 付新梅^{2,*} 王 超¹ 蒋思宇¹ 王景辉¹
张述伟¹ 杨 凌³ 李 燕^{1,*}

(¹大连理工大学化工学院, 辽宁大连 116024; ²大连理工大学精细化工国家重点实验室, 辽宁大连 116024;

³中国科学院大连化学物理研究所, 药物资源开发研究组, 辽宁大连 116023)

QSAR, Molecular Docking and Molecular Dynamics of 3C-like Protease Inhibitors

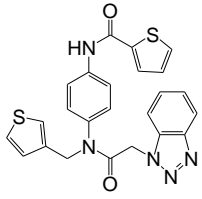
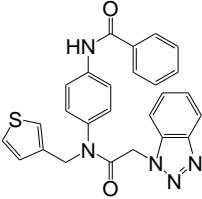
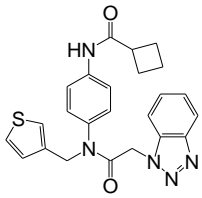
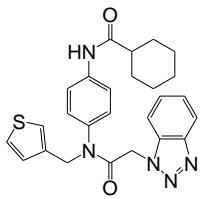
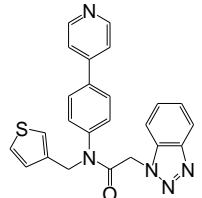
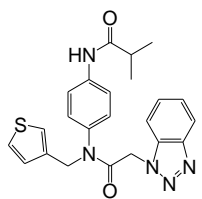
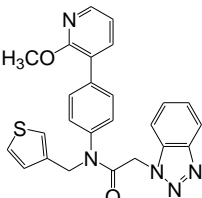
LIN Feng¹ FU Xin-Mei^{2,*} WANG Chao¹ JIANG Si-Yu¹ WANG Jing-Hui¹
ZHANG Shu-Wei¹ YANG Ling³ LI Yan^{1,*}

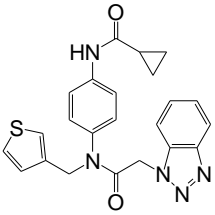
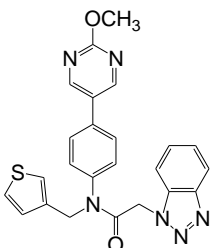
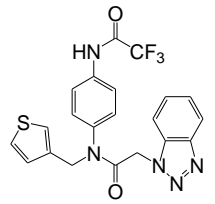
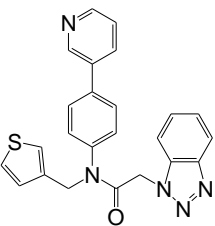
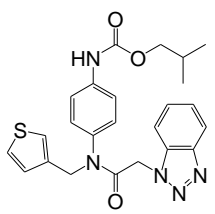
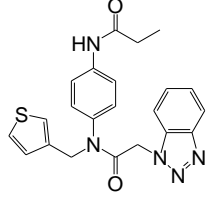
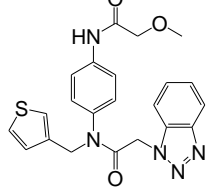
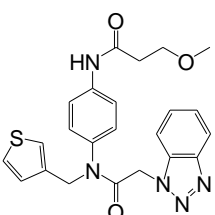
(¹School of Chemical Engineering, Dalian University of Technology, Dalian 116024, Liaoning Province, P. R. China; ²State Key Laboratory of Fine Chemicals, Dalian University of Technology, Dalian 116024, Liaoning Province, P. R. China; ³Laboratory of Pharmaceutical Resource Discovery, Dalian Institute of Chemical Physics, Chinese Academy of Sciences, Dalian 116023, Liaoning Province, P. R. China)

*Corresponding authors. FU Xin-Mei, Email: fuxinmei@dlut.edu.cn; Tel: +86-411-84986206.

LI Yan, Email: yanli@dlut.edu.cn; Tel: +86-411-84986062.

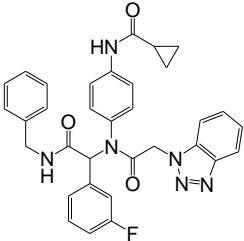
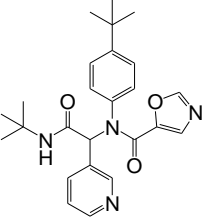
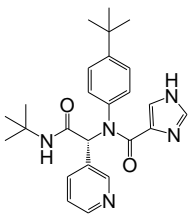
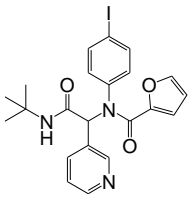
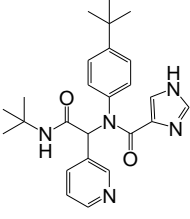
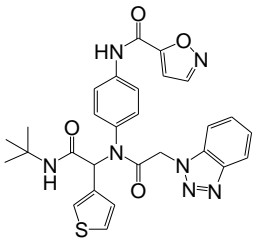
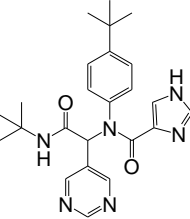
表 S1 所有的分子结构及其对应的生理活性
Table S1 All structures and inhibitory activities of the dataset

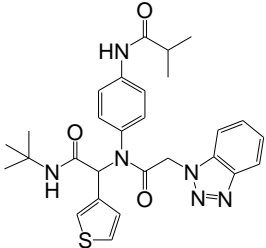
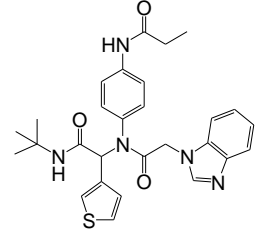
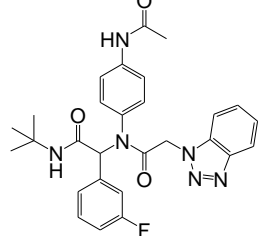
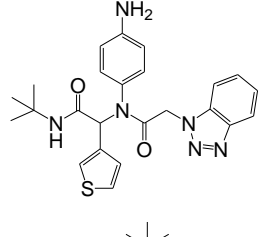
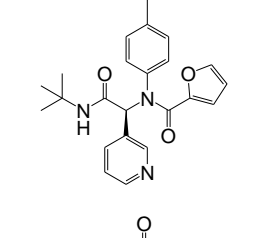
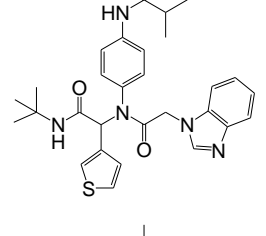
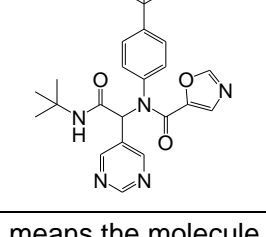
No.	Molecular structure	Actual pIC ₅₀	Predicted pIC ₅₀					
			Alignment-I		Alignment-II		Alignment-III	
			CoMFA	CoMSIA	CoMFA	CoMSIA	CoMFA	CoMSIA
1		6.48	5.97	6.54	6.31	6.10	6.23	5.91
2		6.39	5.90	6.33	6.45	6.10	6.46	5.87
3		5.92	5.79	5.87	5.70	5.77	5.89	5.69
4 ^[†]		5.92	5.75	6.02	5.58	5.36	4.85	5.51
5 ^[†]		5.82	5.48	5.73	5.66	5.70	5.82	5.69
6 ^[†]		5.80	5.80	5.80	5.12	5.22	4.89	5.50
7		5.77	5.76	5.80	5.64	5.71	5.75	5.69

8		5.72	5.55	5.71	5.97	6.14	5.62	5.79
9		5.70	5.53	5.70	5.95	5.76	5.85	5.70
10		5.66	5.80	5.65	5.49	5.25	5.53	5.70
11		5.62	5.49	5.51	5.50	5.70	5.65	5.70
12		5.55	5.77	5.53	5.74	5.76	5.63	5.69
13		5.51	5.53	5.55	5.67	5.82	5.71	5.80
14		5.51	5.80	5.53	5.58	5.46	5.68	5.77
15		5.43	5.82	5.44	5.35	5.15	5.34	5.59

16		5.32	5.61	5.34	5.38	5.66	5.20	5.67
17 ^[f]		5.28	5.37	5.13	5.70	5.70	5.79	5.65
18 ^[f]		5.06	5.41	5.29	5.59	5.38	5.34	5.71
19		4.80	5.55	4.82	4.66	4.99	4.68	5.27
20		5.89	5.10	5.90	5.85	5.66	5.81	5.11
21		5.82	5.15	5.83	5.65	5.78	5.94	5.53
22		5.74	5.23	5.74	5.44	5.39	5.55	5.51

23		5.66	5.17	5.60	5.59	5.10	5.68	4.93
24		5.66	4.95	5.63	5.57	5.26	5.68	5.02
25		5.57	5.25	5.61	5.60	5.39	5.51	5.40
26		5.47	5.20	5.50	5.38	5.51	5.50	5.38
27 ^[t]		5.41	4.98	5.37	5.03	4.90	4.99	5.00
28 ^[t]		5.38	5.41	5.23	5.06	4.79	5.87	5.49
29		5.16	4.95	5.22	5.36	5.33	5.38	5.04

30		5.15	5.55	5.17	5.06	4.89	5.11	4.91
31		5.07	4.85	5.08	4.75	4.80	4.98	4.79
32 ^[t]		5.03	5.36	4.90	4.66	5.11	5.43	5.13
33		5.02	5.11	5.04	5.15	5.48	4.91	5.22
34		4.95	5.11	4.96	4.79	4.86	4.75	4.75
35 ^[t]		4.83	5.07	4.83	5.66	5.54	5.11	5.43
36		4.81	5.12	4.80	4.81	4.79	4.75	4.72

37		4.76	4.94	4.73	4.57	4.52	4.80	5.10
38 ^[t]		4.74	5.02	4.61	4.35	4.39	4.38	5.07
39		4.73	5.01	4.77	5.16	5.33	4.92	5.38
40		4.66	4.96	4.63	4.68	4.90	4.46	5.09
41		4.45	4.98	4.47	4.43	4.90	4.49	4.84
42		4.28	4.86	4.25	4.72	4.51	4.47	5.16
43		4.25	5.15	4.26	4.56	4.73	4.60	4.75

[t] means the molecule belonged to the test set. The optimal results are shown in bold.