

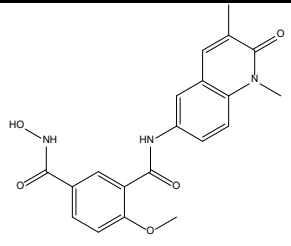
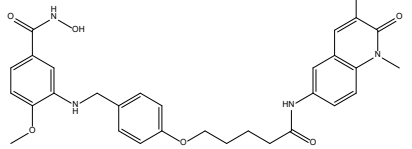
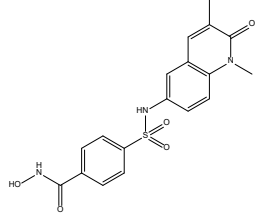
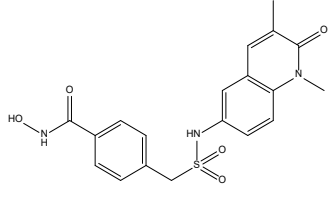
Pharmaceutical Sciences 2026;32(3):441-S1

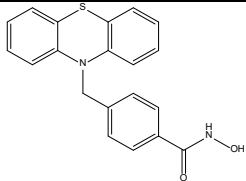
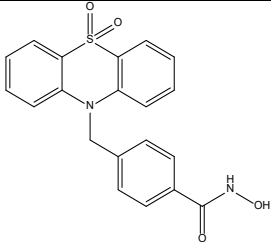
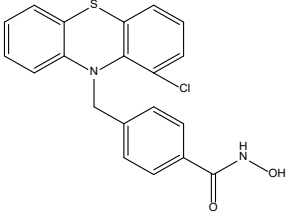
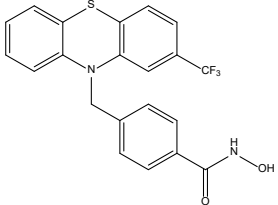
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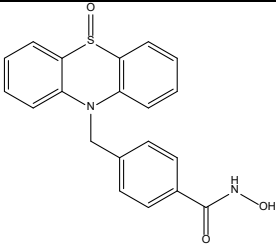
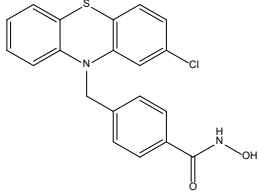
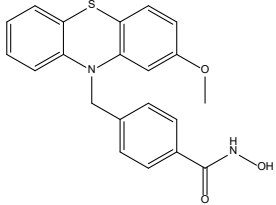
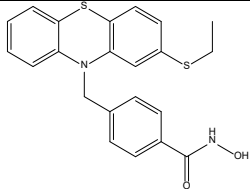
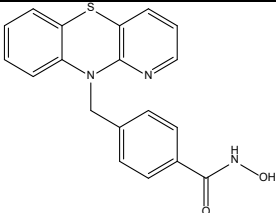
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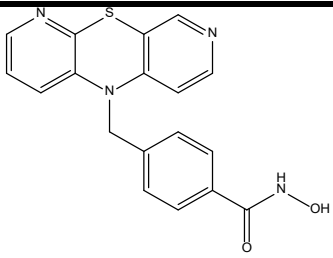
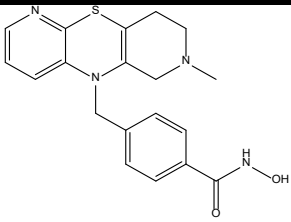
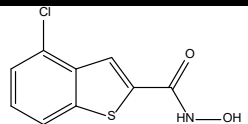
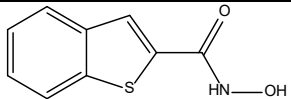
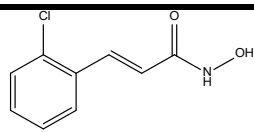
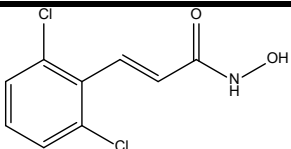
Supplementary file:

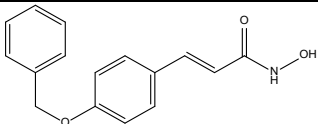
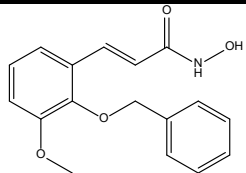
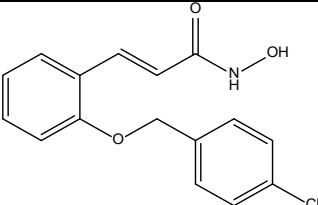
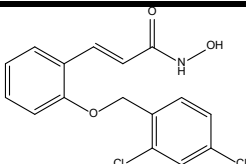
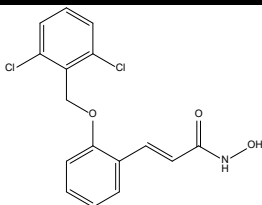
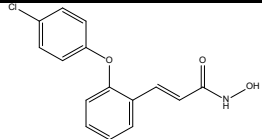
Table S1. The structure of all studied compounds alongside their reported IC50 value against HDAC different isoenzymes, actual and predicted class, and confusion matrix.

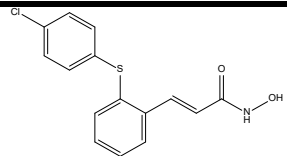
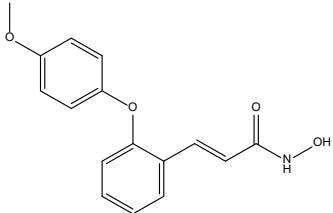
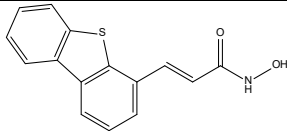
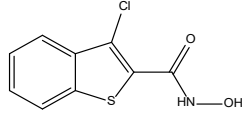
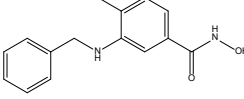
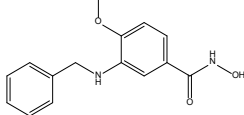
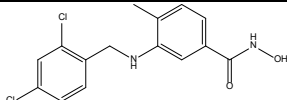
ID	structure	HDAC1 (nM)	HDAC2 (nM)	HDAC3 (nM)	HDAC6 (nM)	HDAC8 (nM)	Class ID** (Obs)	Class ID** (Pred)	Confusion matrix
1*		6900±500	NR	NR	709±174	65±7	0	0	TN
2*		5200±1100	NR	NR	NR	956±74	0	0	TN
3		797±282	NR	NR	344±41	908±274	0	0	TN
4*		545±59	NR	NR	152±31	360±44	0	0	TN

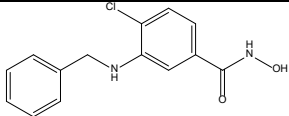
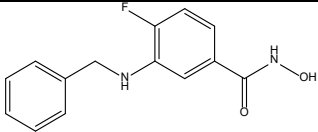
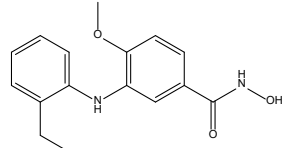
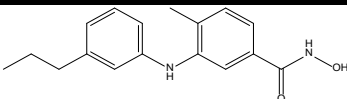
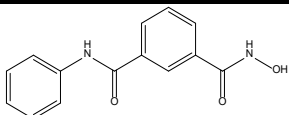
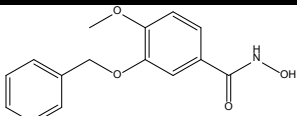
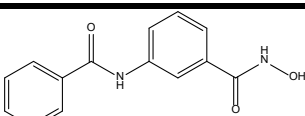
5		5080±510	NR	NR	22±7	NR	0	0	TN
6		3990±1380	NR	NR	13±1	NR	0	0	TN
7		5760±1090	NR	NR	16±2	NR	0	0	TN
8*		7490±1630	NR	NR	25±2	NR	0	0	TN

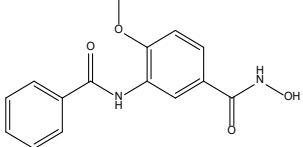
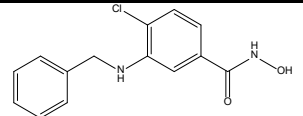
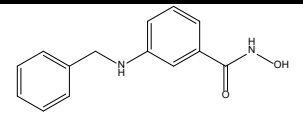
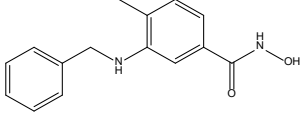
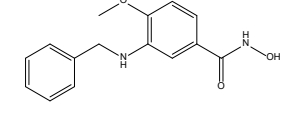
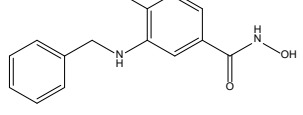
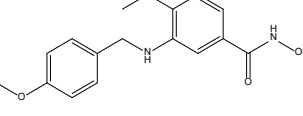
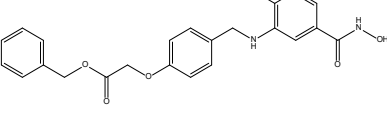
9		6810±2650	NR	NR	77±6	NR	0	0	TN
10*		2950±180	NR	NR	12±1	NR	0	0	TN
11		2070±190	NR	NR	10±1	NR	0	0	TN
12		7200±420	NR	NR	31±3	NR	0	0	TN
13*		2690±1040	NR	NR	5±1	NR	0	0	TN

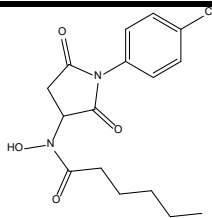
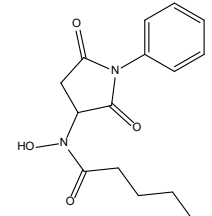
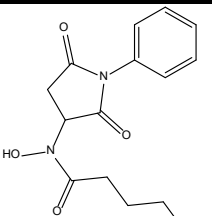
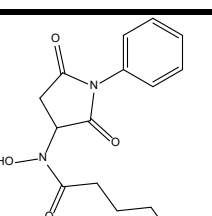
14		3340±210	NR	NR	12±3	2000±30	0	0	TN
15		980±200	NR	NR	32±5	NR	0	0	TN
16		36000±4000	NR	NR	540±100	NR	0	0	TN
17		3560±360	NR	NR	260±50	NR	0	0	TN
18		2200±200	NR	NR	100±10	54±9	0	0	TN
19		9100±900	NR	NR	140±10	175±46	0	0	TN

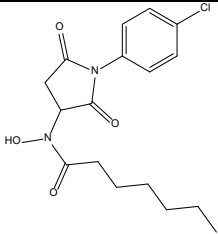
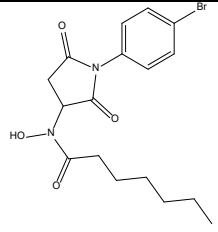
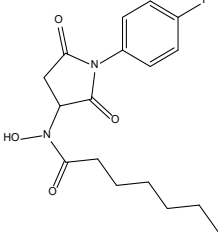
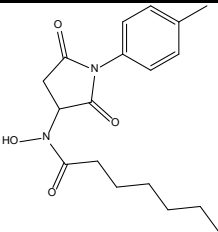
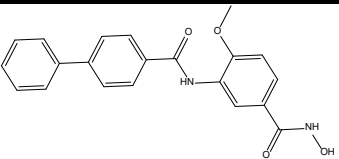
20		750±30	NR	NR	130±20	1200±100	0	0	TN
21		20000±4300	NR	NR	4200±700	130±10	0	0	TN
22		12900±1200	NR	NR	3900±400	250±30	0	0	TN
23*		20000±4300	NR	NR	6100±400	390±70	0	0	TN
24		20200±1900	NR	NR	8200±1300	470±90	0	0	TN
25		13400±2400	NR	NR	11400±250 0	150±30	0	0	TN

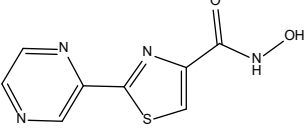
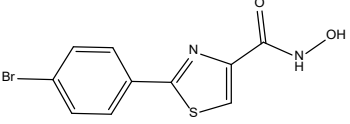
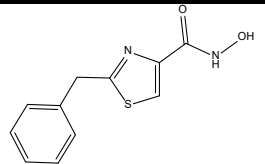
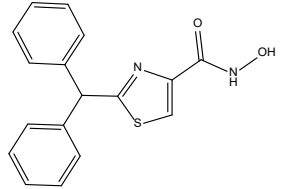
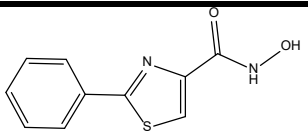
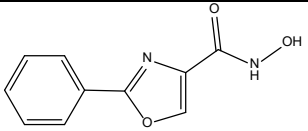
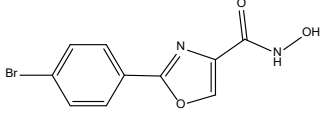
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27		11500±2100	NR	NR	6100±500	80±10	0	0	TN
28		3400±100	NR	NR	1900±400	NR	0	0	TN
29		16000±3000	NR	NR	1900±1200	3100±500	0	0	TN
30		21800±2100	NR	NR	5100±300	260±36	0	0	TN
31		14500±1400	NR	NR	5100±800	69±17	0	0	TN
32		18700±2500	NR	NR	14400±2400	35±4	0	0	TN

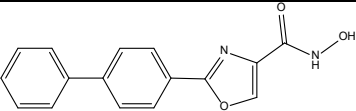
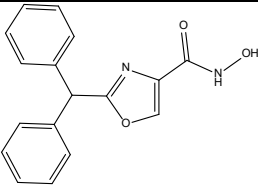
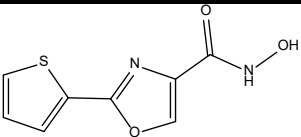
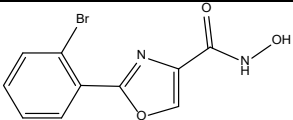
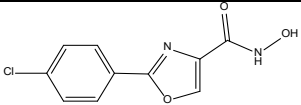
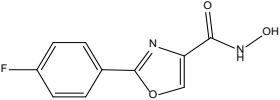
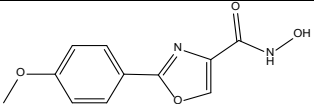
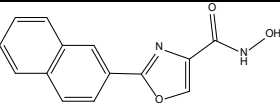
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35		19100±3000	NR	NR	7500±2800	151±33	0	0	TN
36		25600±5500	NR	NR	8900±1700	248±52	0	0	TN
37*		39100±8900	NR	NR	3100±100	120±37	0	0	TN
38*		12100±5700	NR	NR	2900±300	27±3	0	0	TN
39		33600±1800	NR	NR	3000±300	580±50	0	0	TN

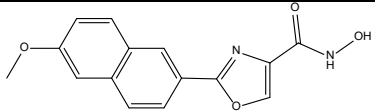
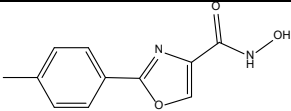
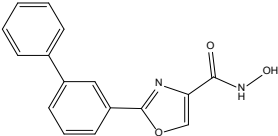
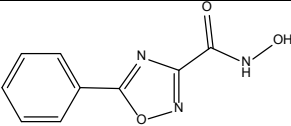
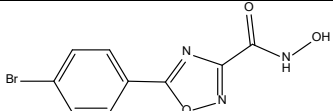
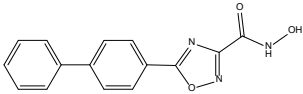
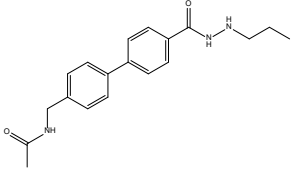
40		2300±1200	NR	NR	2500±1100	90±20	0	0	TN
41		11600±3900	NR	NR	120±20	120±40	0	0	TN
42*		2300±1200	NR	NR	2500±1100	140±10	0	0	TN
43		21800±2100	NR	NR	5100±300	260±40	0	0	TN
44		14500±1400	NR	NR	5100±800	70±20	0	0	TN
45*		10400±1200	NR	NR	4000±200	250±40	0	0	TN
46		>20000	NR	NR	150±1	10±1	0	0	TN
47		>20000	NR	NR	7400±600	410±50	0	0	TN

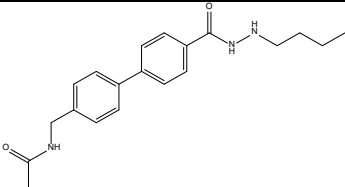
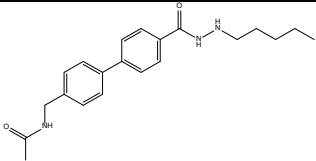
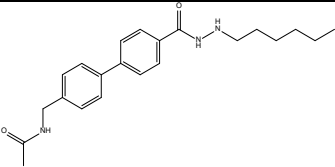
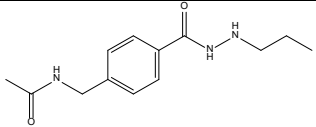
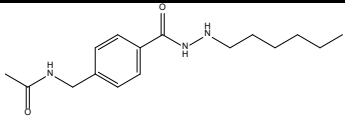
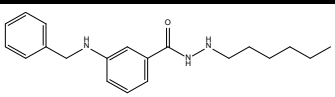
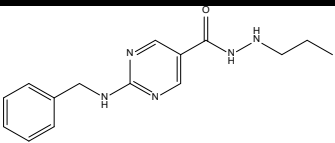
48		6760±970	NR	NR	5020±310	490±180	0	0	TN
49		42100±2200	NR	NR	6200±340	2620±190	0	0	TN
50*		25960±2400	NR	NR	6200±410	3990±740	0	0	TN
51*		5000±420	NR	NR	860±120	1800±240	0	0	TN

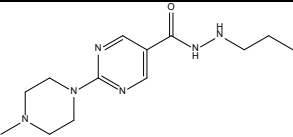
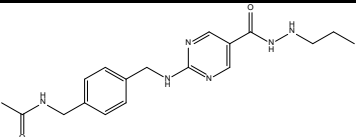
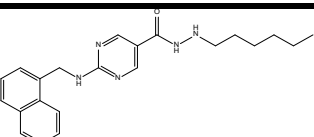
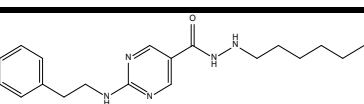
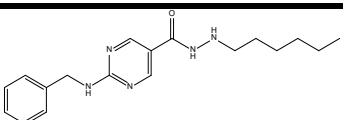
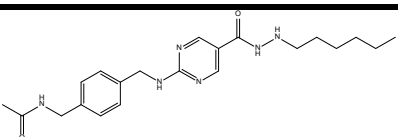
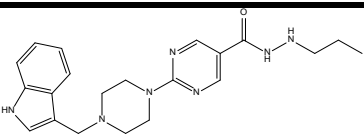
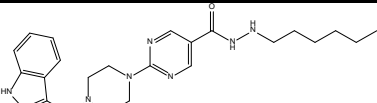
52*		3980±450	NR	NR	2650±290	7690±3300	0	0	TN
53		1420±130	NR	NR	770±90	7720±4420	0	0	TN
54		4300±460	NR	NR	600±120	2080±340	0	0	TN
55		8400±280	NR	NR	1570±370	3960±600	0	0	TN
56		6300±2100	NR	NR	390±2	26±17	0	0	TN

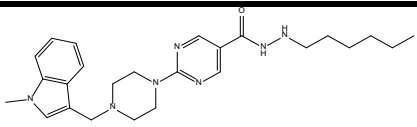
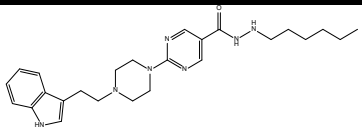
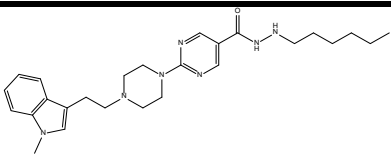
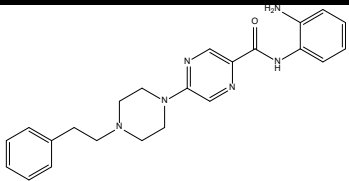
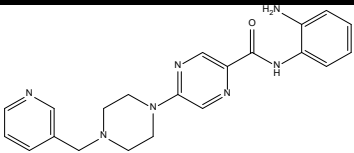
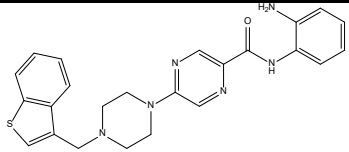
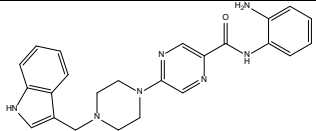
57		82250	NR	NR	8850	61420	0	0	TN
58*		17460	NR	NR	1060	36360	0	0	TN
59		83580	NR	NR	2540	35000	0	0	TN
60*		47660	NR	NR	3690	12860	0	0	TN
61*		10270	NR	NR	1910	12120	0	0	TN
62		29870	NR	NR	270	41900	0	0	TN
63		14470	NR	NR	59	14370	0	0	TN

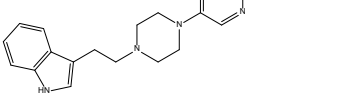
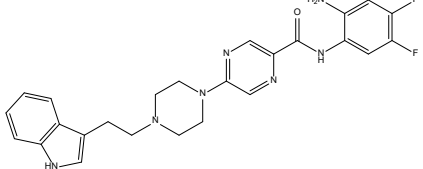
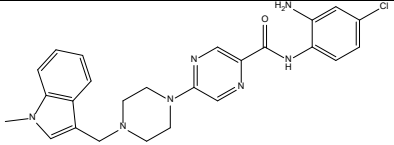
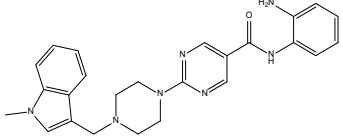
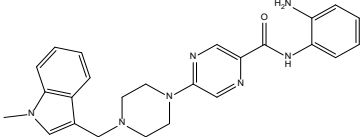
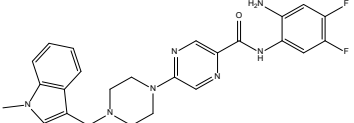
64		29480	NR	NR	89	27330	0	0	TN
65		93890	NR	NR	9370	2700	0	0	TN
66*		36510	NR	NR	311	8130	0	0	TN
67*		22630	NR	NR	2180	20240	0	0	TN
68*		19560	NR	NR	81	30760	0	0	TN
69		23750	NR	NR	110	43350	0	0	TN
70		32890	NR	NR	195	50940	0	0	TN
71		12210	NR	NR	89	26160	0	0	TN

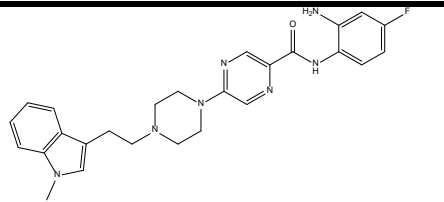
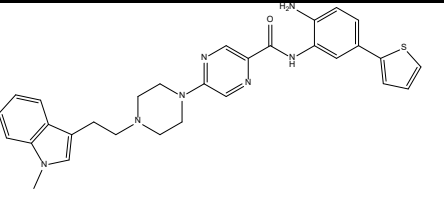
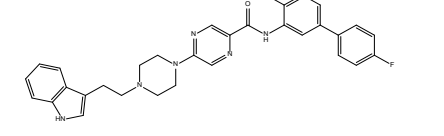
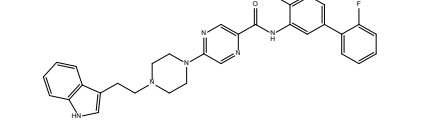
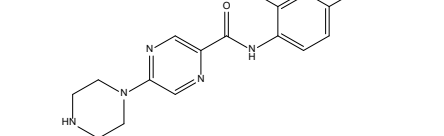
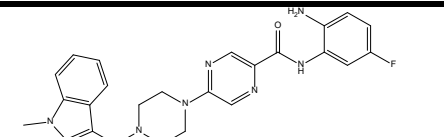
72		22470	NR	NR	182	29080	0	0	TN
73		40070	NR	NR	313	33890	0	0	TN
74		19080	NR	NR	500	10080	0	0	TN
75*		25000	NR	NR	112	38500	0	1	FP
76		33450	NR	NR	2770	20040	0	1	FP
77*		14870	NR	NR	1310	NR	0	1	FP
78		1600±100	630±30	91±3	NR	700±70	1	0	FN

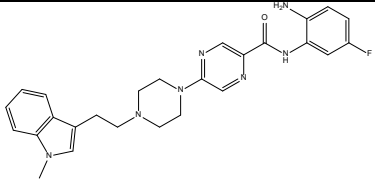
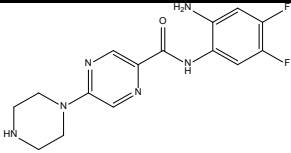
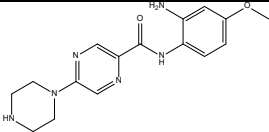
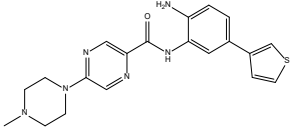
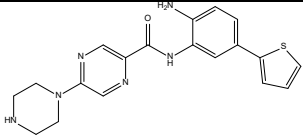
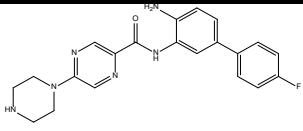
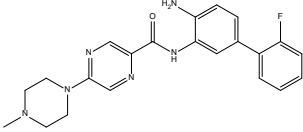
79		620±50	1100±100	350±20	NR	360±20	1	1	TP
80		660±50	2000±200	1500±100	NR	350±10	1	1	TP
81		1800±300	12000±1000	>20000	NR	36±2	1	1	TP
82		1600±200	5500±400	1600±100	NR		1	1	TP
83*		4800±400	12000±1000	>20000	NR	23±1	1	1	TP
84*		>20000	>20000	>20000	NR	46±3	1	1	TP
85		250±20	700±30	43±5	NR	1000±110	1	1	TP

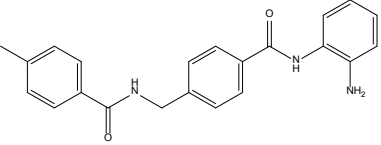
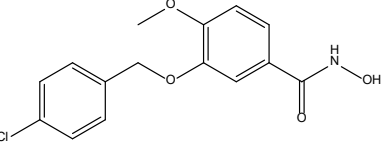
86		590±30	2400±100	120±10	NR	250±10	1	1	TP
87		290±20	920±40	110±10	NR		1	1	TP
88*		8300±1200	>20000	>20000	NR	63±4	1	1	TP
89		2200±100	12000±1000	7200±200	NR	28±2	1	0	FN
90		560±30	3200±200	3000±200	NR	16±1	1	1	TP
91*		960±60	4500±300	8500±400	NR	19±1	1	1	TP
92		73±7	1100±100	30±1	NR	8.2±0.6	1	1	TP
93*		170±10	310±10	100±40	NR	5.9±0.6	1	1	TP

94		170±10	330±20	300±20	NR	14±1	1	1	TP
95*		860±70	1400±100	1000±100	NR	13±1	1	1	TP
96		460±30	1200±100	1400±100	NR	23±2	1	1	TP
97*		510±50	800±70	1120±70	NR	NR	1	1	TP
98		520±70	1430±80	1060±40	NR	NR	1	1	TP
99		210±70	710±40	840±30	NR	NR	1	1	TP
100		130±10	280±10	310±10	NR	NR	1	0	FN

101		310±30	960±50	490±60	NR	NR	1	1	TP
102		810±70	740±30	570±20	NR	NR	1	1	TP
103		3000±200	2700±200	1900±100	NR	NR	1	1	TP
104*		450±60	930±40	1750±60	NR	NR	1	1	TP
105		140±20	560±40	590±30	NR	NR	1	1	TP
106*		290±30	560±20	810±50	NR	NR	1	1	TP

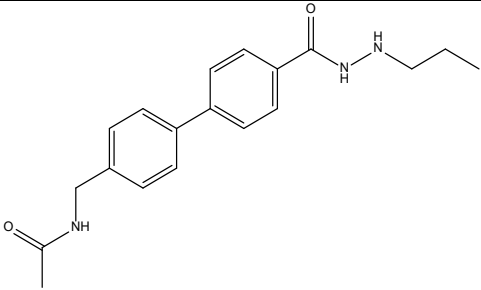
107		400±60	1480±190	400±20	NR	NR	1	1	TP
108*		260±10	2470±220	NR	NR	NR	1	1	TP
109		700±80	770±60	NR	NR	NR	1	1	TP
110*		760±70	760±40	15000±1000	NR	NR	1	1	TP
111*		3300±180	2200±200	400±10	NR	NR	1	0	FN
112		270±30	500±30	500±20	NR	NR	1	1	TP

113*		330±20	1370±80	590±40	NR	NR	1	1	TP
114		4300±300	4200±100	1600±100	NR	NR	1	1	TP
115		20000±1000	14000±2000	14000±1000	NR	NR	1	1	TP
116		110±10	180±60	4400±100	NR	NR	1	1	TP
117		70±10	260±10	6100±700	NR	NR	1	1	TP
118		160±30	340±10	6700±500	NR	NR	1	1	TP
119		180±10	260±70	12000±1000	NR	NR	1	0	FN

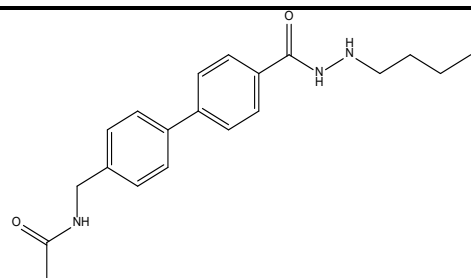
120	 <chem>Cc1ccc(cc1)C(=O)NCc2ccc(cc2)C(=O)Nc3ccccc3N</chem>	650±70	780±20	1700±100	NR	NR	1	0	FN
121	 <chem>COc1ccc(cc1)C(=O)NOc2ccc(cc2)Cl</chem>	14500±3500	NR	NR	4600±400	181±26	0	0	TN

*Test set; **class: 1 means HDAC1-3 selective inhibitor and 0 means non selective; NR means not reported; Confusion matrix shows how well a classification model is performing by comparing its predictions to the actual results including correct predictions for both classes (TP (true positives) and TN (true negatives)) and incorrect predictions (FP (false positives) and FN (false negatives)).

Table S2. Structures of selective HDAC1-3 inhibitors associated with their experimental and predicted values.

Number	Structure	Activity (pIC ₅₀)					
		Experimental			Predicted		
		HDAC1	HDAC2	HDAC3	HDAC1	HDAC2	HDAC3
78		5.80	6.200	7.040	6.38	6.239	6.215

79



6.208

5.959

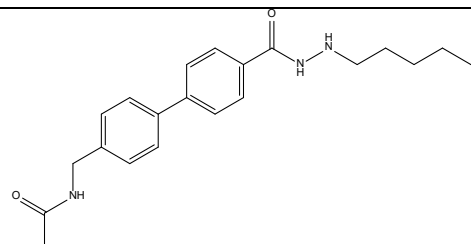
6.456

6.138

5.944

6.53

80



6.180

5.699

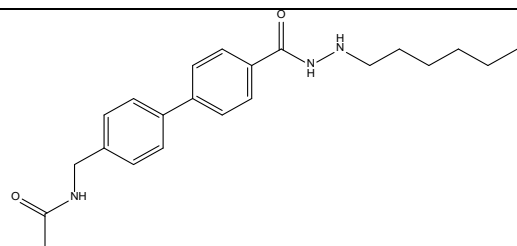
5.824

6.258

5.778

5.975

81



5.745

4.921

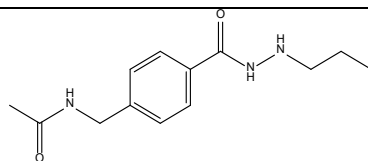
4.301

5.715

5.12

5.478

82



5.796

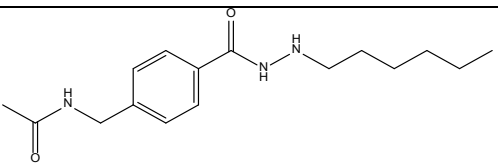
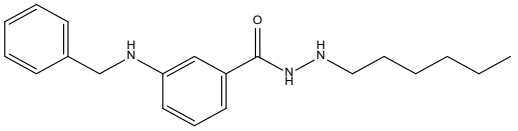
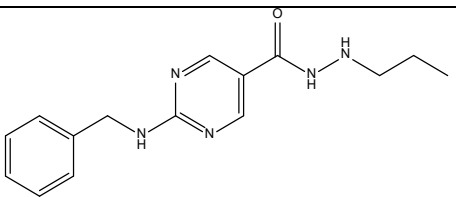
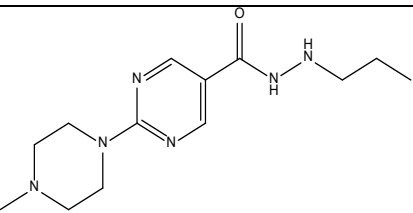
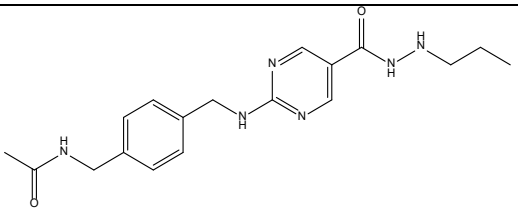
5.260

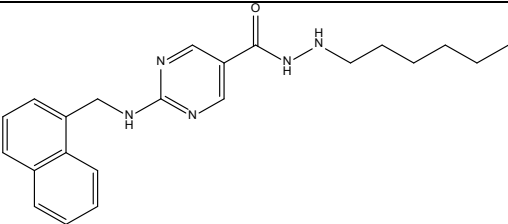
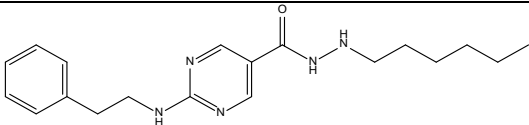
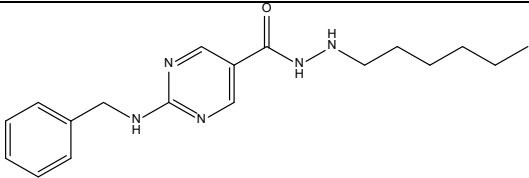
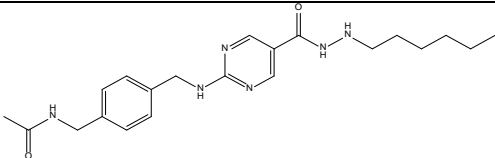
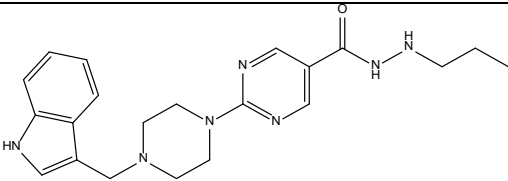
5.799

5.977

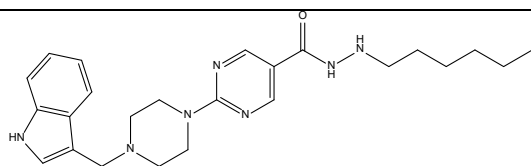
5.001

5.751

83		5.319	4.921	4.301	5.909	4.888	4.192
84		4.301	4.301	4.301	5.272	4.304	4.429
85		6.602	6.155	7.366	5.395	5.845	7.153
86		6.229	5.620	6.921	6.243	5.636	6.93
87		6.538	6.036	6.959	6.409	5.988	6.799

88		5.081	4.301	4.301	5.462	4.979	5.524
89		5.657	4.920	5.142	5.683	5.119	5.425
90		6.252	5.495	5.523	5.957	5.319	5.148
91		6.018	5.347	5.070	6.233	5.398	5.182
92		7.137	5.959	7.523	6.956	5.918	7.613

93



6.770

6.509

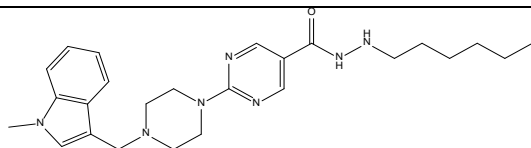
7

6.499

6.464

6.84

94



6.769

6.481

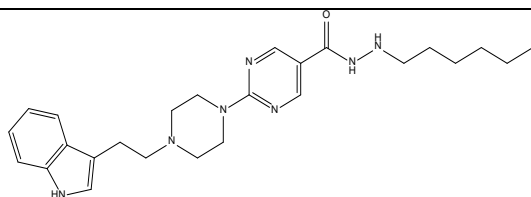
6.523

6.639

6.434

6.862

95



6.065

5.854

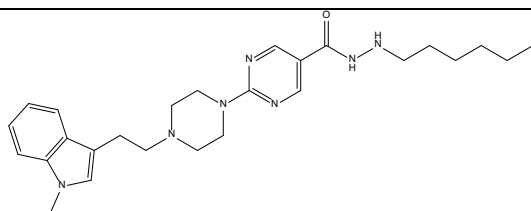
6

6.287

6.478

6.111

96



6.337

5.921

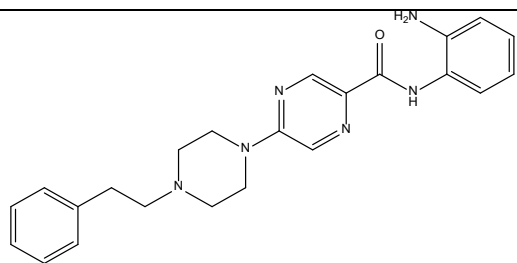
5.854

6.378

5.868

5.726

97



6.292

6.097

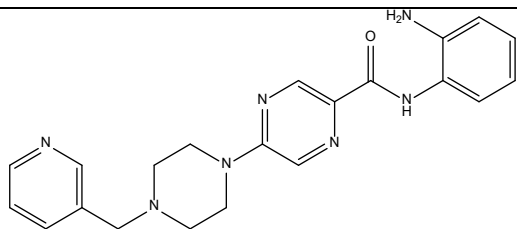
5.951

6.479

6.192

5.988

98



6.284

5.845

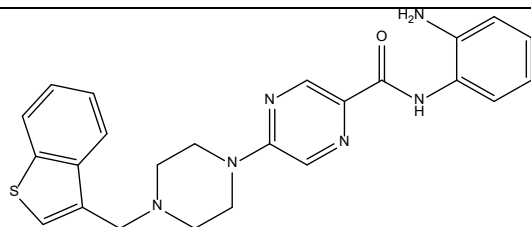
5.975

6.407

5.855

5.788

99



6.678

6.149

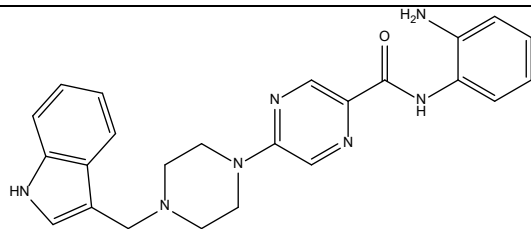
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6.104

6.162

6.014

100



6.886

6.552

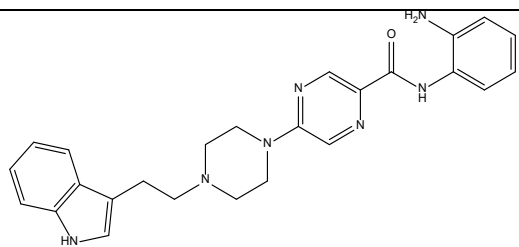
6.508

6.929

6.35

6.53

101



6.509

6.018

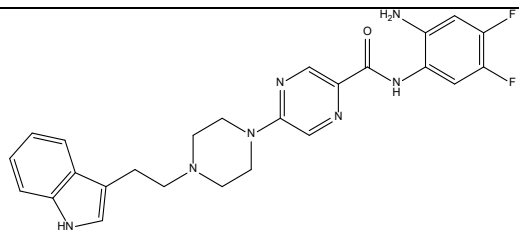
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6.685

6.101

6.437

102



6.091

6.131

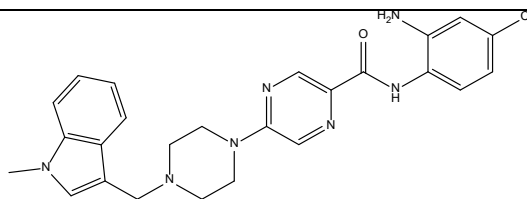
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6.181

6.112

5.98

103



5.523

5.569

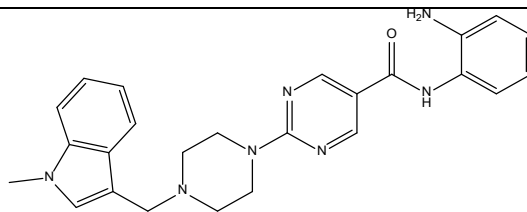
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5.513

5.715

104



6.347

6.031

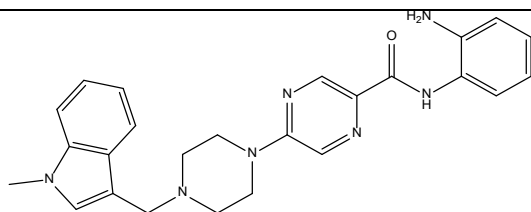
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6.388

6.061

5.95

105



6.854

6.252

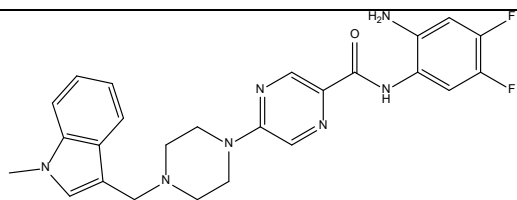
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6.225

6.007

106



6.538

6.252

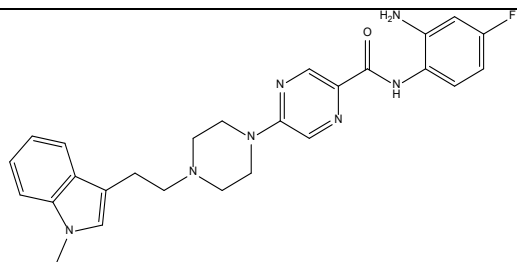
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107



6.398

5.830

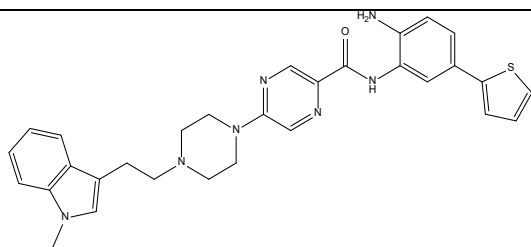
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6.585

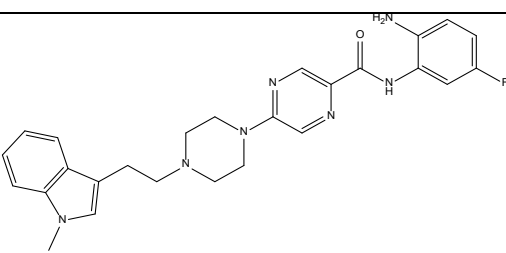
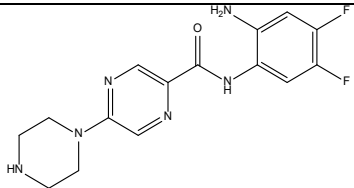
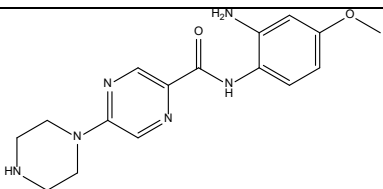
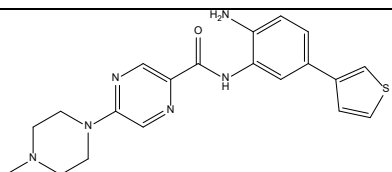
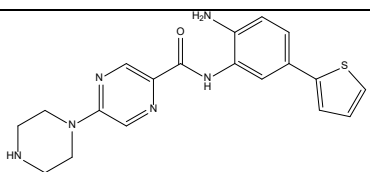
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4.301

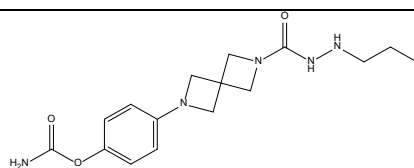
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5.572

4.666

113		6.481	5.863	6.229	6.458	5.936	6.046
114		5.366	5.377	5.796	5.268	5.477	6.04
115		4.699	4.854	4.855	5.012	4.811	5.475
116		6.959	s6.745	5.356	7.047	6.325	5.211
117		7.155	6.585	5.215	6.925	6.539	4.95

125



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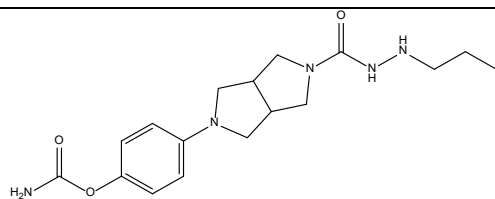
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6.584

5.888

6.094

126



-

-

-

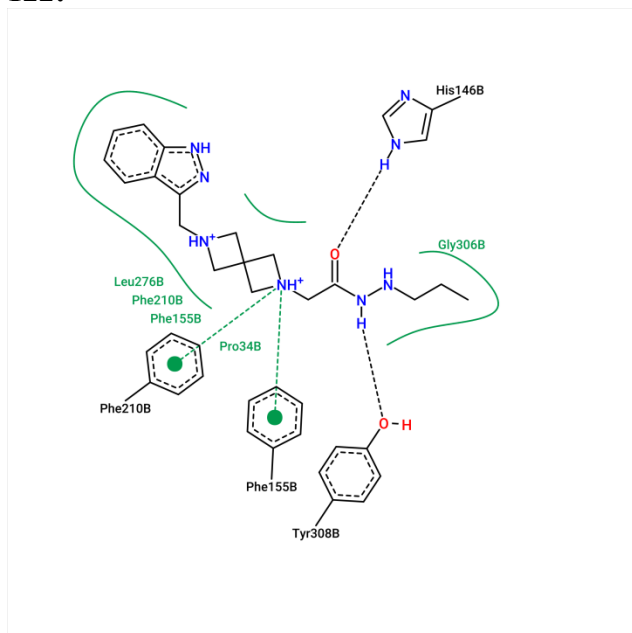
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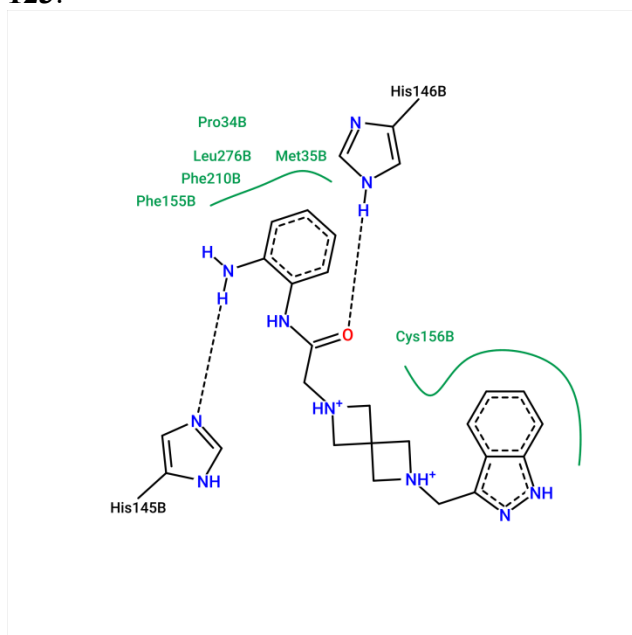
6.348

Figure S1. The poseview picture of new designed compounds docked on active site of HDAC2.

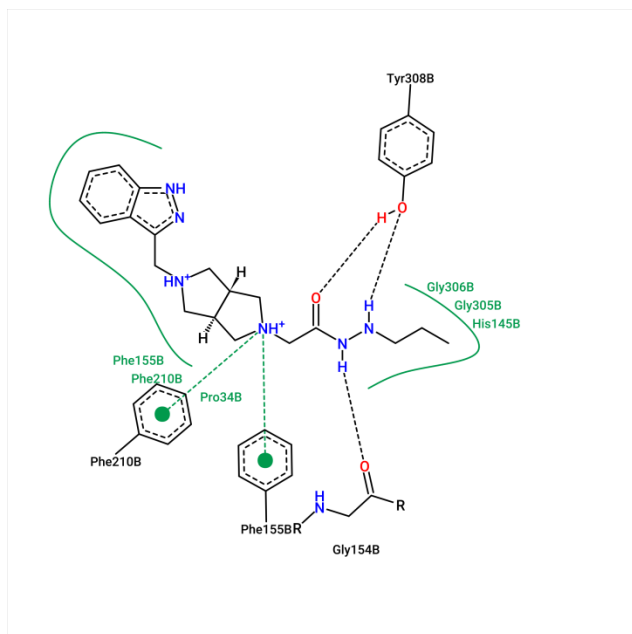
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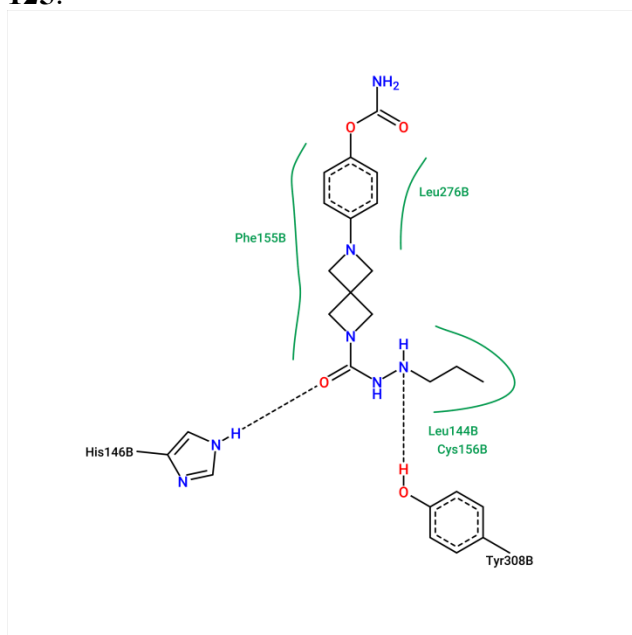
123:



124:



125:



126:

