

Table 1. Summary of experimental results.

Algorithms	Percentage of successful prediction	Ratio of predictions	Mean Size of valid predicted complexes	Median size of clusters	Mean size of clusters	Mean Score of predicted clusters
<u>MIPS dataset</u>						
SideS	42.65%	29/68	5.86	5	5.78	0.282
Mcode	43.10%	25/58	8.32	5	9.741	0.239
HCS	45.00%	27/60	5.074	4	5.95	0.328
RNSC	42.62%	26/61	5.462	4	5.311	0.308
AHC	45.00%	27/60	5.074	4	5.95	0.328
<u>Tong dataset</u>						
SideS	16.67%	4/24	9.75	6	9.58	0.093
Mcode	10.81%	4/37	4.25	6	12.946	0.093
HCS	13.64%	3/22	11	9	12	0.091
RNSC	17.65%	3/17	5	5	8.765	0.113
AHC	23.08%	3/13	15	16	16.154	0.093
<u>DIP dataset</u>						
SideS	46.07%	41/89	7.44	6	6.663	0.241
Mcode	31.82%	21/66	7.524	8	12.152	0.2
HCS	47.95%	35/73	8.571	5	8.219	0.263
RNSC	49.48%	48/97	6.521	6	7.18	0.288
AHC	56.14%	20/35	10.85	9	12.914	0.322
<u>Biogrid dataset</u>						
SideS	25.00%	12/48	12	7	9.313	0.131
Mcode	31.51%	23/73	10.609	9	12.466	0.168
HCS	18.92%	14/74	9.357	4	8.676	0.124
RNSC	53.73%	36/67	11.22	9	11.045	0.29
AHC	25.00%	8/32	13	14	15.438	0.143
<u>Ito dataset</u>						
SideS	14.29%	2/14	3.5	3	3.786	0.058
Mcode	9.09%	1/11	5	5	6.818	0.061
HCS	7.69%	1/13	3	3	5.462	0.058
RNSC	14.28%	1/7	4	4	4.143	0.1
AHC	15.38%	2/13	3	3	5	0.058
<u>Galvin_2002 dataset</u>						
SideS	51.16%	22/43	8.273	7	8.256	0.256
Mcode	35.00%	7/20	7.429	7	9.4	0.217
HCS	55.56%	20/36	8.9	6	9.056	0.264

RNSC	61.70%	29/47	6.72	4	6.3	0.333
AHC	61.9%	13/21	11.308	12	12.667	0.383
Galvin 2006 dataset						
SideS	37.76%	37/98	7.973	6	7.051	0.239
Mcode	50.00%	31/62	10.194	7	10.71	0.303
HCS	46.84%	37/79	9.027	5	8.38	0.27
RNSC	50.62%	41/81	7.293	5	6.654	0.307
AHC	57.50%	23/40	11.522	8	12.525	0.314

The percentage of successful predictions is shown in the first column; the absolute number of valid predicted complexes is shown in the second column as well as the total number of predicted complexes. The mean size of the valid predicted complexes is shown in the third column, whereas the median and the mean size of all predicted clusters is shown in the fourth and fifth column. The last column presents the mean score of all predicted clusters.

Table 2. Summary of experimental results with altered datasets.

Algorithms	Percentage of successful prediction	Ratio of predictions	Mean Size of valid predicted complexes	Median size of clusters	Mean size of clusters	Mean Score of predicted clusters
Dataset₄₀⁴⁰						
SideS	100.00%	41/41	14.098	8	14.098	0.588
Mcode	100.00%	15/15	4.333	4	4.333	0.4
HCS	91.30%	42/46	12.548	11	12.326	0.499
RNSC	100.00%	32/32	5.875	5	5.875	0.754
AHC	100.00%	18/18	19.82	18	19.5	0.528
Dataset₄₀⁸⁰						
SideS	76.74%	33/43	11.88	7	10.279	0.366
Mcode	100.00%	11/11	5.091	3	5.091	0.365
HCS	84.21%	32/38	11.906	8	11.421	0.407
RNSC	96.00%	24/25	5.167	5	5.16	0.642
AHC	100.00%	8/8	20.625	19	20.625	0.52

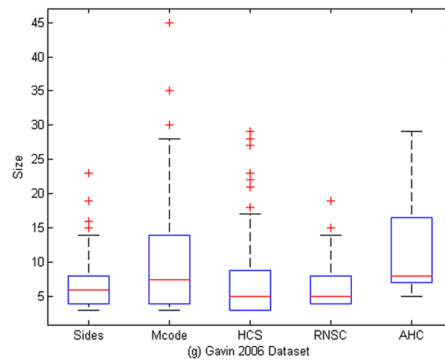
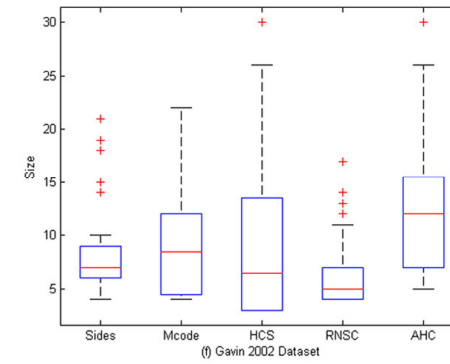
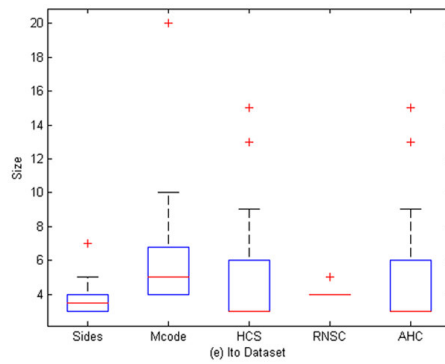
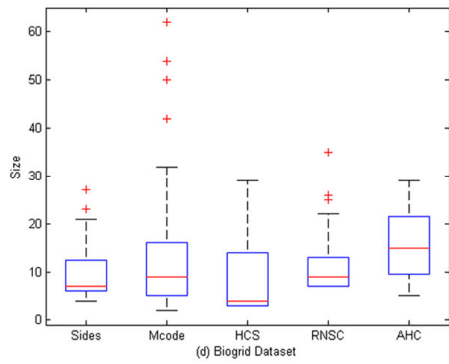
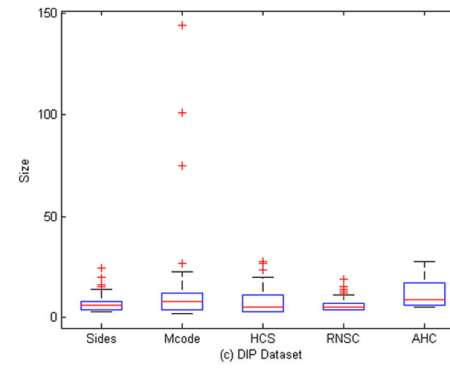
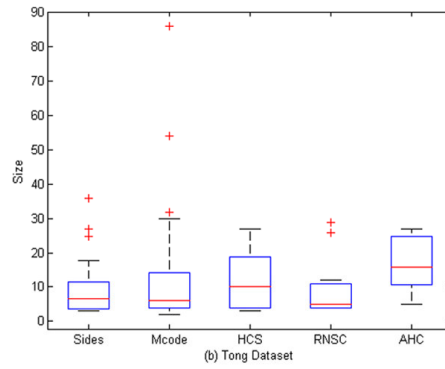
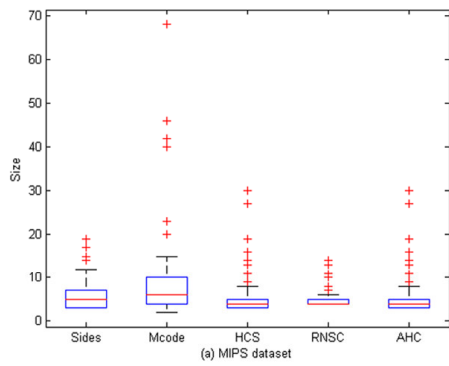
Dataset ₄₀ ¹⁰⁰						
SideS	55.10%	27/49	9.407	6	8.02	0.25
Mcode	50.00%	3/6	4.333	7	11.667	0.191
HCS	75.00%	30/40	10.933	7	9.825	0.298
RNSC	85.00%	17/20	5.471	5	5.35	0.59
AHC	100.00%	5/5	25	29	25	0.482
Dataset ₈₀ ⁴⁰						
SideS	16.67%	6/36	7.5	5	5.722	0.137
Mcode	19.54%	76/389	3.987	3	4.877	0.149
HCS	58.82%	10/17	17.4	7	12.294	0.273
RNSC	44.44%	16/36	4.563	4	4.583	0.197
AHC	100.00%	6/6	24.833	24	24.833	0.457
Dataset ₈₀ ⁸⁰						
SideS	7.41%	2/27	5.5	5	4.815	0.117
Mcode	8.82%	15/170	3.4	3	3.6	0.113
HCS	35.29%	6/17	10.667	3	7.353	0.173
RNSC	11.76%	4/34	4.25	4	4.412	0.126
AHC	66.67%	2/3	19.5	20	22	0.207
Dataset ₈₀ ¹⁰⁰						
SideS	9.52%	2/21	4	4	4.429	0.101
Mcode	5.77%	12/208	3.75	3	3.62	0.102
HCS	18.18%	2/11	3	3	3.091	0.126
RNSC	11.9%	5/42	4.4	4	4.571	0.102
AHC	13.64%	3/22	3.333	3	3.455	0.142

The percentage of successful predictions is shown in the first column; the ratio of predictions is shown in the second column as well as the total number of predicted complexes. The mean size of the valid predicted complexes is shown in the third column, whereas the median and the mean size of all predicted clusters is shown in the fourth and fifth column. The mean score of the predicted complexes is shown in the last column.

Table 3. Summary of experimental results with random datasets.

Algorithms	Percentage of successful prediction	Ratio of predictions	Mean Size of valid predicted complexes	Median size of clusters	Mean size of clusters	Mean Score of predicted clusters
<u>Random (1430, 6531)</u>						
AHC	0	0/25	-	4	4.2	0.022
<u>Random (3279, 4038)</u>						
AHC	0	0/5	-	5	5	0.035
<u>Random (4500, 12500)</u>						
AHC	0	0/12	-	5	4.75	0.04

The percentage of successful predictions is shown in the first column; the ratio of predictions is shown in the second column as well as the total number of predicted complexes. The mean score of the valid predicted complexes is shown in the third column. The mean size of the valid predicted complexes is shown in the fourth column, whereas the median and the mean size of all predicted clusters is shown in the fifth and sixth column. The last three columns present the Sensitivity (Sn), the Positive Predictive Value (PPV) and, the geometric Accuracy (Acc_g) respectively.



The size of the predicted clusters.

In each boxplot, the red line of the box shows the median size of the protein complexes, while the upper and the lower blue lines of the box show the size of the 25% and 75% of the protein complexes respectively. The red crosses are for those clusters which are considered as outliers.