

Table S1: Main crystallographic properties of the test structures and results of the α -helix identification procedure applied to them. Res is the number of residues in the asymmetric unit, Resol is the data resolution in Angstrom, Solv is the solvent content, Helices is the number of α -helices having more than 7 residues in the structure. For each selection step of the procedure, are reported the number of solutions (Num), and the two efficiency defined in the text by eq.(11). The text structures described in details in the text are highlighted in bold characters. The results of two test of the procedure are reported under the entries $1\text{gmg}_{\text{test}}$ and $3\text{gwh}_{\text{test}}$.

PDB code	Res	Resol (Å)	Space group	Solv (%)	Helices	Step A Num eff_{helix} eff_{sol}	Step B Num eff_{helix} eff_{sol}	Step C Num eff_{helix} eff_{sol}
1a6m	151	1.00	P2 ₁	36	5	109 80% 6%	30 20% 3%	24 20% 4%
1aki	129	1.50	P2 ₁ 2 ₁ 2 ₁	45	3	81 67% 7%	19 67% 11%	12 67% 17%
1bxo	323	0.90	C2	40	2	58 100% 10%	28 100% 14%	20 100% 20%
1cgn	124	2.15	P6 ₅ 22	58	4	50 25% 2%	10 0% 0%	8 0% 0%
1dy5	246	0.87	P2₁	37	6	43 100% 19%	20 100% 20%	14 100% 29%
1e8a	175	1.95	R3	59	8	61 63% 13%	22 50% 18%	8 25% 25%
1gmg	126	1.90	C2	39	4	55 50% 4%	19 25% 5%	8 25% 13%
1gmg_{test}	126	1.90	C2	39	4	101 100% 8%	25 100% 16%	10 100% 40%
1kf3	124	1.05	P2 ₁	46	2	44 50% 5%	20 50% 5%	16 50% 6%
1kqw	134	1.80	I4	50	2	34 100% 15%	12 50% 8%	7 50% 14%
1lat	145	1.90	P2 ₁ 2 ₁ 2 ₁	74	4	44 75% 73%	7 75% 29%	6 25% 17%
1lys	258	1.72	P2 ₁	33	8	113 100% 15%	37 75% 14%	18 50% 17%
1na7	326	2.40	P2 ₁	41	6	163 100% 6%	40 83% 15%	19 67% 21%
1s31	273	2.70	I23	74	2	59 100% 34%	9 100% 22%	6 100% 33%
1xyg	1380	2.19	P2 ₁	44	32	115	34	21

						81%	56%	47%
						37%	41%	48%
1ycn	619	2.51	C222 ₁	58	32	63	20	9
						72%	63%	53%
1yxa	740	2.10	P2 ₁ 2 ₁ 2 ₁	53	17	65%	45%	67%
						61	19	7
						53%	41%	29%
2a03	394	2.33	P6 ₅ 22	66	16	33%	37%	43%
						59	7	6
						63%	44%	44%
2b5o	584	2.50	P3 ₂ 21	32	14	37%	57%	67%
						53	12	6
						86%	79%	50%
2f53	820	1.99	P2 ₁	54	5	79%	75%	83%
						164	40	30
						80%	80%	60%
2f84	323	2.10	P2 ₁ 2 ₁ 2	47	13	6%	10%	10%
						35	18	6
						46%	46%	31%
2f8m	472	2.09	P2 ₁ 2 ₁ 2	54	12	43%	44%	83%
						75	24	12
						92%	67%	17%
2fc3	124	1.54	P2 ₁ 2 ₁ 2 ₁	41	5	31%	33%	17%
						50	22	13
						80%	60%	60%
2gq3	1434	2.30	P41 21 2	56	40	20%	14%	23%
						45	13	11
						68%	60%	58%
2gza	982	2.60	C222 ₁	52	31	69%	92%	100%
						56	17	8
						74%	45%	29%
2h8q	864	2.00	P6 ₅ 22	54	4	66%	59%	63%
						44	5	5
						75%	50%	50%
2hyu	308	1.86	P2 ₁ 2 ₁ 2	58	20	21%	60%	60%
						44	14	11
						50%	25%	25%
2hyw	616	2.10	P2 ₁	58	38	34%	29%	36%
						104	35	27
						76%	58%	58%
2i3p	304	2.30	P2 ₁	52	10	31%	31%	41%
						48	19	10
						40%	20%	10%
2o3k	307	2.30	P2 ₁ 2 ₁ 2 ₁	40	12	13%	11%	10%
						76	24	13
						83%	75%	67%
2omt	567	2.00	P2 ₁ 2 ₁ 2 ₁	46	1	17%	38%	54%
						65	24	19
						100%	100%	0%
2p0g	318	2.30	P3 ₁ 21	40	8	5%	4%	0%
						48	7	5
						63%	50%	38%
2pby	1155	2.07	P2 ₁	49	46	83%	43%	40%
						134	28	24
						74%	57%	54%
2qu5	292	2.86	P2₁2₁2	69	8	40%	54%	58%
						53	19	13
						100%	63%	63%
2sar	192	1.85	P2 ₁ 2 ₁ 2 ₁	48	2	28%	26%	39%
						28	13	8
						50%	50%	50%
						4%	8%	13%

3gwh	222	1.94	P₂₁	29	10	188	31	16
						90%	70%	50%
						7%	19%	25%
3gwh_{test}	222	1.94	P₂₁	29	10	1782		38
						90%		50%
						13%		11%
3kut	194	1.50	P1	71	8	139	46	2
						63%	63%	25%
						19%	9%	100%
6rhn	115	2.15	P ₄ ₃ ₂ ₁ ₂	48	2	34	11	10
						50%	50%	50%
						3%	9%	10%
2bw4	334	0.90	P ₂ ₁ ₃	42	3	74	9	6
						100%	100%	100%
						23%	22%	33%
1fx2	235	1.46	P ₂ ₁ ₂ ₁ ₂ ₁	46	6	49	20	17
						50%	50%	50%
						10%	10%	12%
2yzw	283	1.70	P ₂ ₁ ₂ ₁ ₂ ₁	38	14	78	24	15
						79%	57%	50%
						35%	29%	40%
1us0	314	0.66	P ₂ ₁	46	10	107	38	30
						100%	40%	30%
						16%	13%	13%
2bf9	35	0.99	C2	33	1	48	23	3
						100%	100%	100%
						2%	4%	33%
1a6k	151	1.10	P ₂ ₁	35	5	85	32	24
						60%	20%	20%
						6%	3%	4%
1fy2	220	1.20	C2	51	6	47	20	17
						50%	50%	50%
						11%	20%	24%
9pti	58	1.22	P ₂ ₁ ₂ ₁ ₂ ₁	38	1	34	19	13
						100%	100%	0%
						3%	5%	0%
2f14	257	1.71	P ₂ ₁	41	1	84	18	14
						100%	100%	100%
						1%	6%	7%
1exr	146	1.01	P1	49	7	147	55	16
						86%	86%	57%
						8%	11%	25%
1bkr	108	1.10	P ₂ ₁	41	4	83	33	23
						100%	50%	50%
						8%	6%	9%
1o6g	151	1.14	P ₂ ₁	35	6	86	31	21
						67%	33%	33%
						8%	7%	10%
1lri	98	1.45	C ₂₂₂ ₁	43	5	46	18	15
						80%	80%	60%
						26%	28%	27%
1cnr	48	0.83	P ₂ ₁	33	2	70	27	16
						100%	50%	50%
						6%	4%	6%
1e29	135	1.21	C ₂₂₂ ₁	48	3	43	15	7
						67%	67%	33%
						7%	13%	14%
1cy0	88	1.40	P ₂ ₁ ₂ ₁ ₂ ₁	42	1	60	15	7
						100%	100%	0%
						2%	7%	0%
1gy0	212	1.20	P ₃ ₁	61	3	42	19	17
						67%	0%	0%

						7%	0%	0%
ljm1	202	1.11	P6 ₁	63	1	18	9	8
						100%	100%	100%
li76	163	1.20	P2 ₁ 2 ₁ 2 ₁	44	3	11%	11%	13%
						50	19	13
						67%	67%	67%
1931	129	1.33	P4 ₃ 2 ₁ 2	41	3	8%	11%	15%
						28	12	8
						67%	67%	33%
1mnz	387	1.00	I222	57	12	18%	17%	13%
						83	27	23
						92%	58%	50%
1m1f	212	1.25	P2 ₁	44	4	31%	33%	35%
						88	32	22
						100%	50%	25%
1b9o	123	1.15	P2₁2₁2₁	39	2	5%	6%	5%
						20	12	6
						0%	0%	0%
						0%	0%	0%
1dxd	154	1.40	P6	59	6	60	15	14
						83%	33%	33%
1nkd	59	1.10	C2	46	2	12%	13%	14%
						61	31	6
						100%	0%	0%
1zs0	163	1.56	P2 ₁ 2 ₁ 2 ₁	43	3	3%	0%	0%
						49	19	12
						67%	67%	67%
likj	184	1.27	C2	36	2	8%	11%	17%
						68	28	19
						50%	50%	50%
1eb6	177	1.01	P2 ₁	40	6	6%	4%	5%
						83	33	26
						83%	67%	67%
1e3u	970	1.65	P2 ₁	51	26	7%	12%	15%
						119	39	31
						81%	54%	46%
2pvb	107	0.91	P2 ₁ 2 ₁ 2 ₁	36	5	29%	31%	32%
						26	12	6
						60%	60%	40%
1paz	120	1.55	P6 ₅	56	2	35%	33%	33%
						38	13	8
						100%	50%	50%
2erl	40	1.00	C2	22	2	18%	15%	13%
						100	27	18
						100%	100%	100%
ligd	61	1.10	P2 ₁ 2 ₁ 2 ₁	46	1	5%	7%	11%
						60	20	15
						100%	100%	100%
3pyp	125	0.86	P6 ₃	34	1	2%	5%	7%
						14	5	2
						100%	100%	100%
1ea0	248	1.40	C2	50	2	21%	20%	50%
						88	26	18
						50%	0%	0%
1wkq	313	1.15	C222 ₁	44	12	1%	0%	0%
						51	19	13
						67%	50%	42%
1aho	64	0.96	P2 ₁ 2 ₁ 2 ₁	42	1	37%	32%	39%
						27	13	11
						100%	100%	100%
						11%	8%	9%

lie9	255	1.40	P2 ₁ 2 ₁ 2 ₁	54	9	56	22	18
						78%	56%	56%
						21%	27%	28%
1fs3	124	1.35	P3 ₂ 21	56	2	51	14	9
						100%	50%	50%
						6%	7%	11%