

Supplementary Table S1: The proteins used in this study.

Proteins and Positions			
P26039_116	P17710_879	Q8BUM3_244	O75694_974
P26039_709	Q9JKR6_352	P06800_382	P52948_760
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P26039_732	Q9DB29_137	Q9DCL9_295	O15381_192
P26039_956	Q9DB29_173	P42669_271	O15381_626
P26039_1023	O55135_63	P46664_58	P08559_261
P26039_1045	O55135_152	Q99LL5_489	P08559_273
P26039_1087	Q8VI75_726	Q921W4_40	Q8IYS1_30
P26039_1353	Q8VI75_727	Q8C551_275	Q8IYS1_303
P26039_1392	P05555_494	P35282_175	Q32P28_483
P26039_1506	P05555_721	Q8C570_106	Q32P28_645
P26039_1509	Q9WUA3_359	Q9CW46_255	Q13310_128
P26039_1558	Q9WUA3_722	Q80UJ7_873	Q13310_339
P26039_1661	Q6PHZ2_273	P27671_118	Q8NF37_330
P26039_1927	Q6PHZ2_481	Q80WQ6_520	Q8NF37_443
P26039_1939	P28867_127	Q3V0F0_49	Q16513_118
P26039_2196	P28867_507	Q922Q2_82	Q16513_338
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P53996_57	Q6A0A2_656	P19253_190	Q99575_745
P53996_78	P16045_43	Q9CZM2_110	P30044_100
P53996_88	P16045_61	P35980_101	P30044_204
P53996_99	Q9QXD8_142	P84099_17	O43395_37
P53996_102	Q9QXD8_303	O09167_56	O43395_651
P53996_112	P48678_522	P67984_25	Q96EY7_139
P53996_120	P48678_572	P41105_13	Q96EY7_551
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P53996_133	Q8CGK3_626	P62911_96	P60484_124
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P53996_159	Q922Q8_59	P14148_208	Q14671_1102
P53996_162	Q9JKP5_27	P14869_119	P07919_53
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Q8CGC7_381	P14152_137	Q9CPR5_8	Q92900_374
Q8CGC7_680	P14152_154	Q9D338_212	Q92900_657
Q8CGC7_692	Q99J09_26	Q9ET26_65	Q96EL3_49
Q8CGC7_697	Q99J09_247	Q91YL2_29	Q96EL3_63
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Q8CGC7_1377	Q9WTI7_498	P14131_25	Q9Y2L1_799

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Q8K385_303	Q8BP40_200	Q09161_320	
Q3U0V1_177	Q69ZK0_32	Q9UBB6_158	
Q3U0V1_437	P33610_384	Q9UBB6_725	
Q80VA0_325	P11680_332	O60502_863	
Q80VA0_640	O88685_403	O60502_896	
Q8BUV3_26	Q9R1P4_85	P55769_30	
Q8BUV3_284	Q9R1P0_74	P55769_102	
P50431_104	Q9R1P3_91	O00567_384	
P50431_198	Q9R1P1_19	O00567_472	
P28798_177	Q60692_185	P29474_689	
P28798_333	P70195_74	P29474_908	
P38647_366	Q9Z2X2_107	O75607_41	
P38647_608	Q8BG32_289	O75607_105	
Q8JZK9_86	Q9D8W5_31	Q9Y639_218	
Q8JZK9_417	P26516_116	Q9Y639_259	
O35737_22	Q99JI4_112	P46459_264	
O35737_267	P61290_92	P46459_599	
Q99P31_22	Q8BHL8_203	Q08J23_184	
Q99P31_199	P0C7N9_64	Q08J23_321	
P17710_431	Q8R2Y8_88	O75694_917	

Supplementary Table S2: The value of van der Waals volumes of each amino acid residue.

Amino acid	A/C	D/E	F/G	H/I	K/L	M/N	P/Q	R/S	T/V	W/Y
VDWV value	1.00	2.78	5.89	4.66	4.77	4.43	2.72	6.13	2.60	8.08
	2.43	3.78	0.00	4.00	4.00	2.95	3.95	1.60	3.00	6.47

Supplementary Table S3: The top 20 amino acid indexes and their description.

1	HUTJ700103	Entropy of formation
2	AURR980119	Normalized positional residue frequency at helix termini C'''
3	PALJ810116	Normalized frequency of turn in alpha/beta class
4	FAUJ880104	STERIMOL length of the side chain
5	BAEK050101	Linker index
6	GOLD730102	Residue volume
7	LEVM760105	Radius of gyration of side chain (Levitt, 1976)
8	LEVM760102	Distance between C-alpha and centroid of side chain
9	NAKH920101	AA composition of CYT of single-spanning proteins
10	SUYM030101	Linker propensity index
11	MCMT640101	Refractivity
12	RACS820104	Average relative fractional occurrence in EL(i)
13	WILM950103	Hydrophobicity coefficient in RP-HPLC, C4 with 0.1%TFA/MeCN/H2O
14	NAKH900101	AA composition of total proteins
15	KRIW710101	Side chain interaction parameter
16	PRAM820103	Correlation coefficient in regression analysis
17	FUKS010110	Entire chain composition of amino acids in intracellular proteins of mesophiles (percent)
18	NADH010106	Hydropathy scale based on self-information values in the two-state model (36% accessibility)
19	NAKH920106	AA composition of CYT of multi-spanning proteins
20	AURR980102	Normalized positional residue frequency at helix termini N'''