Supporting Information

Functional Implications for a Prototypical K-turn Binding Protein from Structural and Dynamical Studies of 15.5K

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Table S1. H/D exchange rates and protection factors for amide protons of 15.5K at 20°C in 100 mM sodium chloride, 100 mM sodium phosphate and pD 6.52.

	kex (min^{-1})	log(kc/kex)			kex (min^{-1})	log(kc/kex)
N7	>0.09			L72	6.74E-04	3.91
K9	>0.09			E74	4.92E-03	3.91
Y11	1.75E-02	3.01		D75	1.73E-02	2.89
A14	3.34E-03	3.79		N77	4.72E-02	3.46
D15	>0.09			Y80	3.15E-04	4.51
A16	>0.09			Y82	3.22E-04	4.64
H17	>0.09			V83	2.49E-04	4.49
T19	9.10E-03	3.29		R84	>0.09	
K20	6.86E-02	2.84		S85	>0.09	
K21	6.42E-03	3.79		K86	1.90E-02	3.50
L22	4.13E-04	4.45		Q87	>0.09	
L23	2.93E-04	4.27		A88	>0.09	
L25	1.84E-04	4.52		L89	9.29E-04	3.976
Q27	4.59E-04	4.78		G90	1.25E-03	4.48
S29	1.37E-02	3.95		R91	1.45E-03	4.61
Y32	8.87E-02	2.62		A92	1.34E-03	4.61
Q34	2.45E-02	3.31		G94	1.84E-02	4.07
R36	5.10E-03	3.68		V95	9.53E-03	3.01

K37	>0.09			S96	>0.09	
N40	>0.09			R97	>0.09	
T43	1.43E-03	4.30		V99	7.89E-04	3.68
K44	1.19E-02	3.60		I100	1.22E-02	2.57
T45	8.55E-03	3.64		A101	9.84E-04	4.30
L46	5.85E-03	3.38		C102	1.10E-03	5.10
G49	>0.09			S103	1.50E-03	5.27
I50	5.34E-03	3.23		V104	7.55E-04	4.24
S51	2.66E-02	3.24		T105	9.49E-04	4.34
E52	9.40E-04	4.38		K107	>0.09	
F53	1.73E-04	4.92		E108	>0.09	
I54	1.51E-04	4.68		G109	>0.09	
M56	3.35E-04	4.85		Q111	>0.09	
A57	5.05E-04	4.93		L112	>0.09	
A58	9.22E-04	4.56		Q117	1.34E-02	3.22
D59	6.30E-03	3.45		I119	1.02E-02	3.08
A60	6.23E-03	3.56		Q120	3.07E-03	3.86
L63	>0.09			Q121	5.25E-02	3.06
E64	>0.09			S122	2.88E-02	3.63
I65	7.67E-03	2.78		R125	3.42E-02	2.94
I66	9.22E-03	2.60		L126	2.46E-02	2.77
L67	8.16E-03	2.80		L127	6.54E-03	2.92
L69	>0.09			V128	2.69E-02	0.38
L71	5.13E-03	2.99				

Figure S1. ^{15}N transverse relaxation dispersion profiles for D59 (black circles) and L67 (blue triangles) recorded at 20°C at 600 MHz. Residue L67 was identified from Lipari-Szabo Model Free analysis as having a small but significant (2.2 sec^{-1}) R_{ex} component, yet the scatter present dispersion curves prevents observation of significant relaxation dispersion. Model Free analysis of the relaxation data for residue D59 indicated the absence of a significant R_{ex} component and this data serves as a reference curve that indicates the level of scatter typically present in the dispersion curves.