## HP35 Fast Dynamics for Folded and Urea-unfolded Conditions

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## **Supporting Information**

## **2D NMR Spectra**



**Figure S1**  ${}^{1}\text{H}/{}^{13}\text{C}$  HSQC (top) and HMBC (bottom) NMR spectra of HP35-P<sub>2</sub>. The peaks at 118.0 and 118.3 ppm are not apparent in the HSQC, which means that the resonances are not directly attached to  ${}^{1}\text{H}$ . At the same time, they correlate to  ${}^{1}\text{H}$  in the HMBC from Phe and not

Trp. These observations indicate that the peaks are those of Phe-attached CN. HSQC spectrum was acquired with 1 scan of 2048 points in  $t_2$  and 100 points in  $t_1$  with an acquisition time of 0.17 s and a recycle delay of 1.5 s. HMBC spectrum was acquired with 32 scans of 2048 points in  $t_2$  and 180 points in  $t_1$  with an acquisition time of 0.17 s and recycle delay of 2 s.

$1D^{13}C$ (ppm)	HSQC (ppm)	HMBC (ppm)	Assignment	Linewidth (Hz)	T2* (ms)
107.2	-	107.4	W	3.7	86
108.9	-	108.9	F <sub>CN</sub>	3.5	90
108.9	-	108.9	F <sub>CN</sub>	3.5	90
111.1	111.3	111.1			
112.0					
114.3		114.6	F (terminal)	0.5	630
116.7				0.4	800
117.3	117.1	117.1	W	20	16
118.0		117.7	CN	9	35
118.3		118.3	CN	13	24
118.6	118.5	118.6	W	23	14

**Table S1** Peak assignments from natural abundance 1D <sup>13</sup>C, <sup>1</sup>H/<sup>13</sup>C HSQC and HMBC spectra.