

# TABLES

Table S1: Acquisition and Processing Parameters for NMR Experiments recorded on CBDN1.

Experiment	nucleus	acq. pts (complex)	spectral width (Hz)	carrier freq. (ppm)	processing	matrix dim. (real points)	reference
$^1\text{H}$ - $^{15}\text{N}$ HSQC	$t_1=^{15}\text{N}$	128	1450	120.59	ss (70°)	1024	Bodenhausen & Ruben, 1980
	$t_2=^1\text{H}$	1024	6500	4.67	tdc, gm (10), poly	1024	Kay et al., 1992
$^1\text{H}$ - $^{15}\text{N}$ HMQC-J	$t_1=^{15}\text{N}$	341	1450	120.59	gm (2, 5, 10, 15)	4096	Kay & Bax, 1990
	$t_2=^1\text{H}$	1024	6500	4.67	tdc, gm (5), poly	1024	
$^1\text{H}$ - $^{13}\text{C}$ HSQC (aliphatic)	$t_1=^{13}\text{C}$	512	8050	43.03	sb (72°), poly	1024	
	$t_2=^1\text{H}$	1024	6500	4.67	tdc, sb (72°), pol	1024	
$^1\text{H}$ - $^{13}\text{C}$ HSQC (aliphatic)	$t_1=^{13}\text{C}^{\text{ct}}$	236	8050	43.03	lp, ss (90°), poly	1024	Vuister & Bax, 1992
	$t_2=^1\text{H}$	1024	6500	4.67	tdc, ss( 90°), poly	1024	Santoro & King, 1992
$^1\text{H}$ - $^{13}\text{C}$ HSQC (aromatic)	$t_1=^{13}\text{C}^{\text{ct}}$	101	6200	125.47	lp, ss (80°)	1024	Vuister & Bax, 1992
	$t_2=^1\text{H}$	1024	6500	4.67	tdc, gm( 10°)	1024	Santoro & King, 1992
$^{15}\text{N}$ NOESY-HSQC	$t_1=^1\text{H}$	128	6500	4.67	lp, sb (72°)	512	Marion et al., 1989b

(125 msec mixing time)	$t_2=^{15}\text{N}$	54	1450	120.59	Ip, sb (72°)	128	Zuiderweg & Fesik, 1989
	$t_3=^1\text{HN}$	512	6500	4.67	tdc, sb (72°), poly	256	
$^{15}\text{N}$ TOCSY-HSQC	$t_1=^1\text{H}$	108	6500	4.67	Ip, sb (80°)	512	Marion et al., 1989c
(40, 72 msec mixing times)	$t_2=^{15}\text{N}$	54	1450	120.59	Ip, sb (80°)	128	
	$t_3=^1\text{HN}$	512	6500	4.67	tdc, sb (80°), poly	256	
HNHB	$t_1=^1\text{H}$	96	6500	4.67	Ip, sb (80°)	256	Archer et al., 1991
	$t_2=^{15}\text{N}$	54 <sup>ct</sup>	1450	120.59	Ip, sb (80°)	128	
	$t_3=^1\text{HN}$	512	6500	4.67	tdc, sb (80°), poly	256	
HNCO	$t_1=^{13}\text{C}'$	64	1170	174.71	Ip, ss (90°)	256	Ikura et al., 1990
	$t_2=^{15}\text{N}$	35 <sup>ct</sup>	1450	120.59	Ip, sb (90°)	128	Muhandiram & Kay, 1994
	$t_3=^1\text{HN}$	512	6500	4.67	tdc, sb (60°), poly	128	
HNCACB	$t_1=^{13}\text{C}\alpha\beta$	45	8050	43.04	Ip, ss (90°)	256	Wittekind & Müller, 1993
	$t_2=^{15}\text{N}$	35 <sup>ct</sup>	1450	120.59	Ip, sb (80°)	128	
	$t_3=^1\text{HN}$	512	6500	4.67	tdc, sb (90°), poly	256	
CBCA(CO)NH	$t_1=^{13}\text{C}\alpha\beta$	53	8050	43.04	Ip, ss (90°)	256	Grzesiek & Bax, 1992
	$t_2=^{15}\text{N}$	35 <sup>ct</sup>	1450	120.59	Ip, ss (70°)	128	

	$t_3=^1\text{HN}$	512	6500	4.67	tdc, sb (60°), poly	256	
CBCACO(CA)HA	$t_1=^{13}\text{C}'$	56	1050	176.95	lp, ss (90°)	256	Kay, 1993
	$t_2=^{13}\text{C}\alpha\beta$	64ct	8050	43.04	lp, ss (90°)	128	
	$t_3=^1\text{H}\alpha$	512	6500	4.67	sb (60°), poly	256	
H(CCO)NH	$t_1=^1\text{H}$	64	6500	3.15	lp, sb (80°) <sup>a</sup> , poly	256	Logan et al., 1992
	$t_2=^{15}\text{N}$	35	1450	120.59	lp, ss (72°), poly	128	Montelione et al. 1992
	$t_3=^1\text{HN}$	512	4050	4.67	sol, sb (80°), poly	256	Grzesiek et al., 1993a
C(CO)NH	$t_1=^{13}\text{C}$	64	8050	43.04	lp, sb (72°), poly	256	Logan et al., 1992
	$t_2=^{15}\text{N}$	35	1450	120.59	lp, ss (72°), poly	128	Grzesiek et al., 1993a
	$t_3=^1\text{HN}$	512	6500	4.67	sol, sb (72°), poly	256	
HCCH-TOCSY	$t_1=^1\text{H}$	96	4050	3.15	lp, sb (72°) <sup>a</sup> , poly	256	Bax et al., 1990
	$t_2=^{13}\text{C}$	40ct	4025	43.04	lp, sb (72°), poly	256	Kay et al., 1993
	$t_3=^1\text{H}$	512	6500	4.67	sol, sb (72°), poly	256	
12.2 msec DIPSI	$t_1=^1\text{H}$	128	4050	3.15	lp, sb (72°) <sup>a</sup> , poly	256	Kay et al., 1990
	$t_2=^{13}\text{C}$	31	4025	43.04	lp, sb (72°), poly	256	Ikura et al., 1991
	$t_3=^1\text{H}$	512	6500	4.67	sol, sb (72°), poly	256	

CBCACO(CA)HA	$t_1=^{13}\text{C}$	38	1864	43.04	Ip, ss (72°), poly	256	Kay, 1993
-for sidechain NH <sub>2</sub>	$t_2=^{13}\text{C}\alpha\beta\gamma$	56ct	8050	43.04	Ip, ss (72°), poly	256	
	$t_3=^1\text{H}\beta\gamma$	512	6500	4.67	sb (72°), poly	520	
HNCO	$t_1=^{13}\text{C}$	44	1864	176.47	Ip, ss (72), poly	128	Ikura et al., 1990
-for sidechain NH <sub>2</sub>	$t_2=^{15}\text{N}$	28ct	1450	120.59	Ip, ss (72°), poly	128	Muhandiram & Kay, 1994
	$t_3=^1\text{HN}$	512	6500	4.67	sol, sb (72°), poly	512	Schleucher et al., 1994
(H $\beta$ )C $\beta$ (C $\gamma$ C $\delta$ )H $\delta$	$t_1=^{13}\text{C}$	32ct	4000	35.0	Ip, ss (80°)	512	Yamakazi et al., 1993
	$t_2=^1\text{H}$	512	6500	4.67	tdc, gm (-10)	1024	
(H $\beta$ )C $\beta$ (C $\gamma$ C $\delta$ C $\epsilon$ )H $\epsilon$	$t_1=^{13}\text{C}$	32ct	4000	35.0	Ip, ss (80°)	512	Yamakazi et al., 1993
	$t_2=^1\text{H}$	512	6500	4.67	tdc, gm (-10)	1024	
<sup>1</sup> H- <sup>1</sup> H-clean TOCSY	$t_1=^1\text{H}$	300-320	6500	4.67	ss (65°)	2048	Griesinger et al., 1988
(70 msec MLEV-17)	$t_2=^1\text{H}$	1024	6500	4.67	tdc, ss (75°), poly	2048	
<sup>1</sup> H- <sup>1</sup> H NOESY	$t_1=^1\text{H}$	231-474	6500	4.67	sb (90°)	2048	Macura et al., 1981
(85, 150 msec mixing time)	$t_2=^1\text{H}$	1024	6500	4.67	sb (90°), poly	2048	

$^{13}\text{C}/^{15}\text{N}$ NOESY-HSQC (50, 85 msec mixing time)	$t_1=^1\text{H}$	128	6500	4.67	lp, sb (72°), poly	256	Pascal et al., 1994
	$t_2=^{13}\text{C}$	30	3000	66.99	lp, sb (72°), poly	128	
	$t_3=^1\text{H}$	512	6500	4.67	tdc, sb(72°), poly	256	
4D $^{13}\text{C}$ - $^{13}\text{C}$ NOESY (150 msec mixing time)	$t_1=^1\text{H}$	64	5000	3.20	lp, sb (80°), poly	128	Clore et al., 1991
	$t_2=^{13}\text{C}$	16	3000	66.99	lp, sb (90°)	64	
	$t_3=^{13}\text{C}$	16	3000	66.99	lp, sb (90°)	64	
	$t_4=^1\text{H}$	256	6500	3.20	ss (80°), poly	256	
Long Range CC Correlation	$t_1=^{13}\text{C}$	48	8050	43.04	lp, ss (110°)	128	Bax et al., 1992
	$t_2=^{13}\text{C}$	51 <sup>ct</sup>	2512	43.04	lp, ss (110°)	128	
	$t_3=^1\text{H}$	512	6500	4.67	sb (110°), poly	256	
$^{13}\text{C}$ - $\{^{15}\text{N}\}$ spin echo HSQC	$t_1=^{13}\text{C}$	310	5530	34.99	gm (4)	1024	Grzesiek et al., 1993b
	$t_2=^1\text{H}$	512	6500	4.67	gm (5), poly	1024	
$^{13}\text{C}$ - $\{^{13}\text{C}'\}$ spin echo HSQC	$t_1=^{13}\text{C}$	310	5530	34.99	gm (4),poly	1024	Vuister et al., 1993
	$t_2=^1\text{H}$	512	6500	4.67	gm (5), poly	1024	

ct=constant time; lp=linear prediction (or mirror image linear prediction with constant-time); ss=sinebell squared (degrees shifted); sb=sinebell (degrees shifted); gm=Lorentzian-to-Gaussian multiplication with a maximum at approximately 0.1 of the acquisition time (Hz line broadening); poly=polynomial baseline flattening; tdc=time domain convolution; sol=solvent filter.

a4.342 degree first order phase shift applied to the FID prior to linear prediction to shift the carrier position.

Table S2. Assignment of the  $^1\text{H}$ ,  $^{13}\text{C}$ , and  $^{15}\text{N}$  NMR spectra of CBDN1 in the presence of cellotetraose (35 °C, pH\* 5.90).

residue	$^{15}\text{N}$ (HN)	$\text{C}^{\prime}$	$^{13}\text{C}^{\alpha}$ ( $\text{H}^{\alpha}$ )	$^{13}\text{C}^{\beta}$ ( $\text{H}^{\beta}$ ) <sup>a</sup>	other
A1	172.89	172.89	52.13 (4.19)	19.56 (1.56)	
S2	118.27 (8.39)		57.78 (5.13)	64.48 (4.66)	
P3	177.36	177.36	65.38 (4.54)	32.51 (1.98, 2.60)	$\gamma$ 28.12 (2.15, 2.35) $\delta$ 51.65 (4.05, 4.34)
I4	109.59 (7.26)	175.34	61.39 (4.50)	37.63 (2.26)	$\gamma^2$ 18.78 (0.95) $\gamma^1$ 26.49 (1.19, 1.34) $\delta^1$ 15.04 (0.91)
G5	112.30 (8.12)	174.84	43.80 (3.90, 4.62)		
E6	125.20(9.43)	178.72	59.29 (4.01)	29.48 (2.23)	$\gamma$ 36.28 (2.46) $\delta$ 183.2
G7	112.45 (10.39)		45.68 (3.28, 4.40)		
T8	105.13 (7.07)	176.55	60.75 (4.47)	70.17 (4.47)	$\gamma^2$ (1.18)
F9	119.10 (8.05)	174.83	60.52 (4.51)	34.92 (2.86, 2.97)*	$\delta$ 131.5 (7.38) $\epsilon$ 131.74 (6.86) $\zeta$ 128.44 (5.86)
D10	118.47 (7.83)	177.12	56.24 (4.43)	40.96 (2.70, 2.58)*	$\gamma$ 179.94
D11	118.76 (8.81)	175.76	53.03 (4.81)	41.08 (2.72, 2.65)*	$\gamma$ 180.84
G12	110.62 (7.70)		44.89 (3.86, 4.70)		
P13		175.59	64.41 (4.52)	32.35 (2.04, 2.48)	$\gamma$ 26.83 (2.04, 2.12) $\delta$ 49.49 (3.61, 3.89)
E14	117.23 (8.75)	176.13	57.14 (3.90)	27.81 (2.61)	$\gamma$ 36.25 (2.36,2.58) $\delta$ 183.8
G15	106.97 (8.19)	175.05	45.52 (3.79, 4.09)		
W16	125.76 (8.33)	176.03	59.53 (4.46)	29.12 (3.37, 2.96)*	$\delta^1$ 129.3 (8.02) $\epsilon^1$ 132.79 (11.04) $\zeta^2$ 113.52 (7.22) $\zeta^3$ 121.0 (6.95) $\epsilon^3$ 121.04 (7.39) $\eta^2$ 122.5 (6.98)

V17	116.62 (9.23)	173.61	59.97 (4.69)	36.13 (2.26)	$\gamma^1$ 21.71 (1.04) $\gamma^2$ 19.89 (0.97)
A18	124.30 (8.56)	176.42	49.87 (5.65)	23.74 (1.43)	
Y19	119.18 (8.86)	174.36	56.07 (5.13)	41.38 (3.09, 2.95)*	$\delta$ 133.7 (6.81) $\epsilon$ 117.3 (6.70)
G20	111.62 (9.01)	173.77	45.83 (3.82, 4.72)		
T21	108.29 (7.07)	174.70	60.73 (4.09)	69.85 (4.51)	$\gamma^2$ 22.85 (0.81)
D22	123.07 (8.65)	176.21	53.09 (4.74)	40.04 (2.08, 2.71)*	$\gamma$ 179.4
G23	113.60 (7.70)		44.04 (3.89, 4.26)		
P24		177.71	62.37 (4.52)	32.85 (2.15, 2.33)	$\gamma$ 26.78 (1.93, 2.06) $\delta$ 49.29 (3.59, 3.64)
L25	120.89 (8.22)	175.22	55.84 (4.16)	42.45 (1.47, 1.55)	$\gamma$ 26.31 (1.81) $\delta^1$ 25.55 (0.86) $\delta^2$ 23.64 (1.57)
D26	124.10 (8.42)	176.58	53.19 (5.03)	44.49 (2.62)	$\gamma$ 180.9
T27	117.65 (8.86)	177.65	61.34 (5.51)	68.21 (4.69)	$\gamma^2$ 21.49 (0.82)
S28	123.57 (8.75)	176.54	62.84 (4.12)	(3.95)	
T29	113.12 (8.46)	176.10	62.27 (4.46)	70.44 (4.46)	$\gamma^2$ 21.21 (1.18)
G30	112.01 (8.23)	171.27	45.30 (3.75, 4.28)		
A31	124.90 (7.37)	173.39	49.93 (4.39)	21.7 (1.04)	
L32	124.52 (8.25)	175.29	54.81 (3.86)	40.16 (-0.63, 0.68)*	$\gamma$ 27.2 (0.73) $\delta^1$ 26.10 (0.27) $\delta^2$ 25.30 (0.14)
C33	126.39 (8.60)	174.26	55.00 (6.13)	47.35 (2.96, 2.75)*	
V34	116.72 (9.02)	172.14	58.88 (4.39)	35.87 (1.71)	$\gamma^1$ 22.36 (0.57) $\gamma^2$ 18.81 (0.41)
A35	127.51 (8.28)	175.47	50.60 (4.42)	19.23 (1.34)	



V36	129.50 (9.11)	59.54 (3.82)	32.00 (0.80)	$\gamma^1$ 20.79 (0.80) $\gamma^2$ 21.20 (-0.30)
P37		176.69	32.42 (1.91, 2.24)	$\gamma$ 27.29 (1.91) $\delta$ 51.87 (3.55, 3.82)
A38	123.83 (8.55)	169.78	18.77 (1.51)	
G39	109.67 (8.40)	175.05	46.79 (3.83)	
S40	114.71 (7.43)	173.07	65.23 (4.12, 3.84)*	
A41	124.79 (8.65)	177.82	21.48 (1.34)	
Q42	124.10 (8.42)	176.51	27.87 (1.48, 1.35)*	$\gamma$ 32.33 (0.59, 1.46) $\delta$ 179.5 $\epsilon^2$ 112.31 (6.41, 6.80)
Y43	122.08 (9.41)	177.82	36.38 (3.27)	$\delta$ 132.6 (6.97) $\epsilon$ 118.3 (6.74)
G44	110.34 (8.56)	172.94	49.47 (3.80, 4.30)	
V45	116.63 (7.11)	175.25	59.33 (4.54)	$\gamma^1$ 21.84 (0.77) $\gamma^2$ 21.77 (0.95)
G46	117.65 (7.83)	179.66	46.21 (3.68, 4.65)	
V47	120.81 (8.60)	175.26	35.09 (1.97)	$\gamma^1$ 22.23 (1.00) $\gamma^2$ 22.73 (0.86)
V48	122.63 (9.59)	173.26	36.96 (2.01)	$\gamma^1$ 22.70 (0.95) $\gamma^2$ 21.60 (1.01)
L49	128.41 (8.66)	175.02	41.12 (-1.51, 0.64)	$\gamma$ 26.61 (0.70) $\delta^1$ 22.00 (0.22) $\delta^2$ 26.45 (0.51)
N50	124.84 (8.38)	175.88	40.27 (2.47, 2.75)*	$\gamma$ 173.46 $\delta^2$ 113.79 (7.20, 6.68)
G51	111.04 (8.29)	173.44	46.65 (4.03, 4.17)	
V52	125.18 (7.54)	172.93	33.60 (1.45)	$\gamma^1, \gamma^2$ 21.09 (0.62)
A53	128.04 (7.89)	177.22	19.57 (1.36)	
I54	125.22 (8.51)	174.90	39.83 (1.50)	$\gamma^1$ 25.48 (0.95, 1.45) $\gamma^2$ 18.55 (0.70) $\delta^1$ 8.60 (0.15)

E55	128.06 (8.84)	175.24	54.61 (4.60)	31.50 (1.96)	$\gamma$ 35.74 (2.23) $\delta$ 183.6
E56	127.82 (8.18)	177.42	57.97 (3.40)	28.92 (1.64)	$\gamma$ 34.95 (1.99) $\delta$ 182.2
G57	115.48 (9.09)	174.35	44.87 (3.49, 4.32)		
T58	122.00 (8.08)	172.39	63.38 (4.16)	69.41 (4.39)	$\gamma^2$ 21.21 (0.56)
T59	126.56 (8.47)	172.31	62.70 (4.80)	69.28 (3.78)	$\gamma^2$ 21.66 (0.94)
Y60	128.06 (8.84)	174.96	56.58 (4.98)	43.68 (1.41, 2.47)	$\delta$ 133.0 (6.61) $\epsilon$ 117.7 (6.83)
T61	116.08 (8.84)	174.11	61.86 (5.24)	71.55 (3.86)	$\gamma^2$ 22.23 (1.08)
L62	132.71 (9.58)	174.09	53.79 (5.38)	44.76 (1.42, 2.11)*	$\gamma$ 28.41 (1.80) $\delta^1$ 23.12 (1.20) $\delta^2$ 26.17 (0.80)
R63	127.76 (9.31)	175.05	53.94 (5.73)	34.56 (1.84)	$\gamma$ 28.18 (1.70) $\delta$ 43.56 (1.70) $\epsilon$ 118.32 (8.82)
Y64	115.18 (8.18)	172.56	58.03 (4.90)	40.13 (3.65, 2.71)*	$\delta$ 132.8 (6.63) $\epsilon$ 117.32 (6.50)
T65	118.00 (8.86)	173.83	61.02 (5.37)	70.02 (3.86)	$\gamma^2$ 21.86 (1.02)
A66	128.89 (8.54)	176.91	50.46 (5.63)	24.61 (1.47)	
T67	117.76 (8.73)	172.01	61.76 (4.52)	71.58 (3.78)	$\gamma^2$ 21.61 (0.97)
A68	129.41 (8.44)	177.18	50.21 (5.75)	25.65 (1.46)	
S69	113.12 (8.46)	173.71	59.74 (4.27)	63.74 (3.95)	
T70	118.3 (7.35)	170.06	59.44 (4.36)	70.22 (3.94)	$\gamma^2$ 18.17 (0.53)
D71	122.74 (7.40)	175.55	54.42 (4.97)	39.86 (2.55)	$\gamma$ 180.3
V72	125.73 (7.82)	171.87	60.24 (4.16)	34.68 (1.17)	$\gamma^1$ 17.80 (-0.45) $\gamma^2$ 20.44 (0.15)
T73	125.36 (7.64)	173.50	61.46 (4.92)	70.12 (3.75)	$\gamma^2$ 21.45 (0.91)

V74	115.64 (7.11)	173.17	57.82 (3.50)	31.48 (2.68)	$\gamma^1$ 23.54 (0.93) $\gamma^2$ 18.07(0.77)
R75	121.90 (7.58)	174.01	54.99 (5.47)	34.31 (2.06, 1.93)*	$\gamma$ 27.17 (1.36) $\delta$ 44.63 (3.31) $\epsilon$ 116.12 (7.29)
A76	131.15 (8.22)	176.16	50.41 (5.15)	20.73 (0.78)	
L77	125.20 (9.34)	174.48	53.47 (4.96)	45.80 (1.60, 1.97)	$\gamma$ 25.05 (1.82) $\delta^1$ 25.75 (0.77) $\delta^2$ 26.93 (0.69)
V78	120.86 (8.17)	176.66	61.53 (5.06)	32.97 (1.62)	$\gamma^1$ 20.83 (0.84) $\gamma^2$ 20.83 (0.89)
G79	116.70 (8.75)	171.66	47.40 (4.10, 4.97)		
Q80	117.22 (8.02)	177.93	55.61 (3.43)	31.78 (1.72, 1.32)*	$\gamma$ 35.97 (1.32, 1.57) $\delta$ 179.76 $\epsilon^2$ 117.13 (6.81, 8.84)
N81	124.48 (9.18)	174.24	51.56 (4.76)	36.26 (2.07, 2.67)*	$\gamma$ 177.84 $\delta^2$ 116.60 (8.08)
G82	110.35 (7.01)	170.64	43.91 (3.28, 3.79)		
A83	124.45 (7.91)		51.21 (3.34)	16.89 (1.11)	
P84		175.73	64.08 (4.39)	32.95 (2.05, 2.46)	$\gamma$ 24.85 (1.63, 1.91) $\delta$ 49.57 (3.38)
Y85	124.62 (9.43)	176.09	60.36 (4.02)	34.94 (3.09, 3.38)*	$\delta$ 133.7 (7.10) $\epsilon$ 118.0 (6.6)
G86	109.38 (8.99)	172.30	45.55 (3.67, 4.09)		
T87	107.21 (7.70)	175.28	60.55 (5.28)	72.88 (4.24)	$\gamma^2$ 22.80 (1.19)
V88	110.32 (8.35)	174.96	60.46 (4.54)	33.26 (2.42)	$\gamma^1$ 21.83 (1.01) $\gamma^2$ 19.97 (0.76)
L89	124.53 (7.36)	174.41	55.06 (4.10)	44.02 (0.03, 1.01)	$\gamma$ 27.19 (1.30) $\delta^1$ 23.04 (0.74) $\delta^2$ 25.88 (0.62)
D90	129.12 (8.62)	175.30	54.61 (4.84)	41.60 (2.55, 2.85)*	$\gamma$ 181.3
T91	116.69 (8.37)	173.91	59.87 (4.88)	73.89 (4.22)	$\gamma^2$ 22.87 (1.09)
S92	117.91 (8.64)		54.14 (5.79)	64.68 (3.70)	

P93	175.25	62.82 (4.30)	32.63 (1.73, 2.25)	$\gamma$ 26.43 (1.69, 1.98) $\delta$ 49.52 (3.38, 3.45)
A94	125.73 (7.82)	177.29	18.83 (1.29)	
L95	126.35 (9.14)	176.31	45.24 (1.78, 1.35)*	$\gamma$ 27.00 (1.75) $\delta$ 27.69 (0.82) $\delta$ 22.80 (0.83)
T96	115.65 (8.91)	174.08	71.52 (4.38)	$\gamma^2$ 20.47 (1.15)
S97	115.89 (8.23)	175.09	63.25 (3.76, 4.05)*	
E98	124.46 (7.78)	53.13 (4.75)	30.74 (1.81, 1.96)*	$\gamma$ 35.80 (2.22) $\delta$ 183.9
P99	176.90	63.36 (4.33)	31.63 (1.72, 1.94)	$\gamma$ 27.50 (1.97, 2.09) $\delta$ 50.47 (3.74, 3.84)
R100	125.51 (8.06)	174.23	33.31 (1.81, 1.99)*	$\gamma$ 27.84 (1.51) $\delta$ 43.82 (3.14, 3.34) $\epsilon$ 115.90 (7.44)
Q101	127.12 (8.50)	175.34	29.00 (2.08, 1.89)*	$\gamma$ 34.47 (2.27) $\delta$ 180.9 $\epsilon^2$ 113.71 (6.61, 7.31)
V102	132.90 (9.26)	175.28	32.91 (0.55)	$\gamma^1$ 21.89 (0.84) $\gamma^2$ 20.58 (0.63)
T103	122.41 (8.12)	174.19	71.24 (3.93)	$\gamma^2$ 21.62 (1.10)
E104	127.02 (9.38)	175.34	33.29 (1.86, 2.19)*	$\gamma$ (2.42)
T105	123.29 (8.86)	174.37	70.85 (3.87)	$\gamma^2$ 21.78 (1.13)
F106	125.20 (9.34)	172.19	41.54 (3.03, 3.25)*	$\delta$ (6.96) $\epsilon$ 128.2 (6.72)
T107	121.41 (9.14)	175.58	69.38 (3.90)	$\gamma^2$ 21.48 (1.00)
A108	132.06 (8.83)	178.47	20.07 (1.86)	
S109	119.19 (8.14)	171.92	63.90 (4.30, 3.99)*	
A110	124.36 (7.18)	172.96	23.00 (1.06)	
T111	115.08 (7.80)	175.00	71.32 (3.90)	$\gamma^2$ 22.06 (1.30)

Y112	129.18 (9.44)	50.81 (5.66)	39.50 (2.60, 3.22)*	$\delta$ 131.54 (6.97) $\varepsilon$ 116.8 (6.29)
P113	174.93	61.72 (4.73)	33.22 (2.25, 2.37)	$\gamma$ 26.78 (2.39, 2.47) $\delta$ (4.10)
A114	119.13 (8.41)	53.20 (3.85)	19.68 (1.41)	
T115	111.01 (7.2)	57.68 (4.71)	70.57 (4.06)	$\gamma^2$ 21.26 (1.20)
P116	176.63	63.27 (4.51)	32.49 (2.45)	$\gamma$ 27.05 (2.01,) $\delta$ 50.61 (3.53, 3.82)
A117	124.93 (8.18)	50.14 (4.60)	22.23 (1.88, 1.52)	
A118	126.55 (8.56)	54.67 (3.93)	17.74 (1.34)	
D119	117.59 (8.41)	54.32 (4.01)	40.33 (2.77)	$\gamma$ 181.3
D120	120.10 (7.59)	52.17 (5.07)	41.93 (2.81, 2.22)*	$\gamma$ 180.0
P121	175.09	62.59 (4.18)	32.38 (1.22, 1.87)	$\gamma$ 26.78 (1.45, 1.56) $\delta$ 49.29 (3.55, 3.66)
E122	121.34 (9.30)	54.35 (4.38)	29.81 (1.26, 1.93)	$\gamma$ 35.82 (2.18, 2.37) $\delta$ 182.0
G123	107.86 (7.69)	174.50	45.06 (4.06, 4.25)	
Q124	120.68 (9.27)	174.24	53.57 (5.61)	$\gamma$ 33.20 (1.67, 2.11) $\delta$ 179.4 $\varepsilon^2$ 113.66 (8.42)
I125	121.96 (8.20)	174.45	60.73 (4.64)	$\gamma^1$ 27.71 (1.57, 1.77) $\gamma^2$ 17.76 (0.92) $\delta^1$ 15.36 (1.03)
A126	127.97 (8.93)	174.62	51.06 (5.34)	22.56 (1.12)
F127	122.26 (9.13)	175.77	56.91 (5.02)	$\delta$ 131.08 (6.91) $\varepsilon$ 131.09 (6.55) $\zeta$ 128.4 (5.89)
Q128	123.94 (9.39)	175.77	55.85 (4.82)	$\gamma$ 33.62 (2.31, 2.55) $\delta$ 179.6 $\varepsilon^2$ 113.44 (6.84, 7.68)
L129	119.56 (8.07)	177.14	54.57 (4.98)	$\gamma$ 27.19 (1.74) $\delta^1$ 25.76 (0.47) $\delta^2$ 23.10 (0.98)
G130	108.65 (8.00)	174.63	44.45 (3.72, 4.13)	

G131	111.26 (8.12)	173.89	45.88 (3.34, 3.52)				
F132	120.32 (6.98)	175.45	59.66 (4.51)	40.87 (2.34, 3.45)*	δ 131.8 (7.11) ε 131.3 (7.35) ζ 129.53 (7.25)		
S133	113.37 (7.80)	175.65	56.38 (4.57)	64.72 (3.45, 3.52)*			
A134	134.02 (9.12)	178.72	54.59 (4.32)	18.83 (1.47)			
D135	120.51 (7.99)	175.06	53.71 (4.75)	42.71 (2.46, 2.87)*		γ 179.9	
A136	122.68 (8.25)	178.05	52.07 (4.58)	19.81 (1.48)			
W137	120.37 (8.19)	172.86	56.34 (4.63)	29.55 (3.23)	δ <sup>1</sup> 119.9 (7.49) ε <sup>1</sup> 131.44 (10.19) ζ <sup>2</sup> 113.13 (7.57) ζ <sup>3</sup>		
					130.9 (6.55) η <sup>2</sup> 123.07 (6.92) ε <sup>3</sup> 128.39 (5.89)		
T138	115.16 (9.07)	173.12	61.21 (4.93)	72.40 (3.88)		γ <sup>2</sup> 21.69 (1.05)	
L139	129.72 (8.37)	175.61	53.25 (5.19)	44.63 (1.34, 1.59)*		γ 27.50 (1.32) δ <sup>1</sup> 24.08 (0.91) δ <sup>2</sup> 26.30 (0.61)	
C140	123.07 (8.72)	173.15	55.68 (5.63)	47.53 (2.72, 2.41)*			
L141	127.07 (9.06)	174.36	52.74 (5.05)	47.06 (0.90, 1.03)		γ 26.05 (0.96) δ <sup>1</sup> 24.70 (-0.16) δ <sup>2</sup> 23.89 (0.01)	
D142	120.31 (9.01)	173.37	51.43 (5.18)	44.56 (2.39, 2.51)*		γ 183.9	
D143	124.06 (9.03)	176.23	55.72 (4.28)	39.66 (2.60)		γ 181.4	
V144	120.40 (8.53)	176.62	60.77 (5.28)	33.40 (2.06)		γ <sup>1</sup> 21.46 (1.26) γ <sup>2</sup> 21.54 (1.03)	
A145	129.71 (9.51)	174.35	52.60 (4.38)	23.54 (1.44)			
L146	122.49 (7.61)	174.71	54.44 (5.41)	44.49 (1.25, 2.02)*		γ 27.99 (1.55) δ <sup>1</sup> 24.46 (1.06) δ <sup>2</sup> 26.80 (0.76)	
D147	128.06 (8.84)	175.58	53.27 (5.19)	44.62 (2.54, 2.79)*		γ 179.3	
S148	116.39 (8.66)	174.35	56.94 (4.65)	65.30 (3.57)			

E149	123.65 (8.20)	176.05	55.97 (4.28)	30.02 (1.78, 1.96)*	$\gamma$ 35.53 (2.13) $\delta$ 183.2
V150	122.76 (8.03)	175.71	62.08 (4.08)	33.13 (2.01)	$\gamma^1$ 21.26 (0.88) $\gamma^2$ 21.26 (0.88)
E151	126.98 (8.32)	175.20	56.28 (4.29)	30.12 (1.90, 2.04)*	$\gamma$ 35.99 (2.26) $\delta$ 180.8
L152	131.64 (7.83)		56.75 (4.17)	43.55 (1.53)	$\gamma$ 27.33 (1.53) $\delta$ (0.92) $\delta$ (0.86)

a asterisk denotes stereospecifically assigned  $\beta$  protons, reported as H $\beta^2$  and H $\beta^3$ , respectively. Otherwise all other methylene protons are listed by ascending chemical shift. Leucine and valine residues for which the methyls are not stereospecifically assigned are reported as  $\delta$  and  $\gamma$ , respectively.

## SUPPLEMENTARY FIGURE LEGEND

**Figure S1.** (A) Distribution of NOE restraints per residue. Filled bars represent the number of long range NOEs ( $|i - j| > 4$ ), open bars represent the sum of non-trivial intraresidue, sequential and short range NOEs ( $1 < |i - j| \leq 4$ ). For every restraint the originating and destination residues were each counted once. (B, C, D) Angular order parameters  $S\phi$ ,  $S\psi$ , and  $S\chi_1$  for the  $\phi$  and  $\psi$  main chain, and side chain  $\chi_1$  dihedral angles, respectively, observed in the final ensemble of 25 structures (Hyberts et al., 1992). (E, F) The rms deviation for all heavy atoms and main chain atoms, respectively, for the ensemble of 25 structures, aligned against the average structure obtained by superimposing residues 4-148. The locations of the ten  $\beta$ -strands are indicated on the top of the figure.



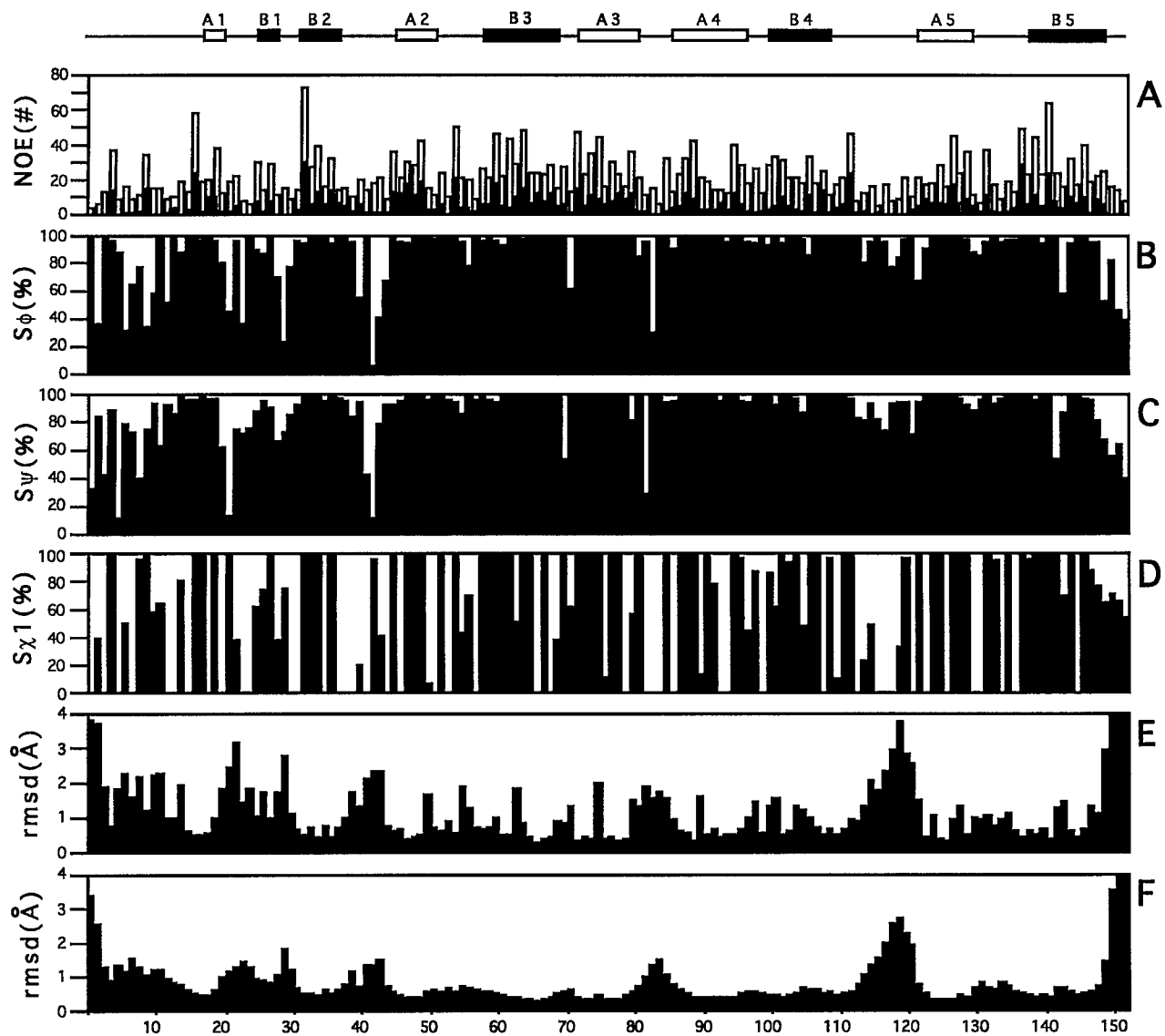


FIGURE 5/  
 Johnson et al  
 Structure of the N-terminal