Reference Table: Projection NMR Nomenclature (August 2006)

Research Group	Projection NMR experiments (with Tilt angles)	Equivalent GFT NMR experiment(s) (with corresponding scaling factors)
Marion and co-workers	1. 3D $^{13}C/^{15}N$ filtered NOESY[1]	(4,3)D [H$\underline{C}^{ali}$]-NOESY-[$\underline{N}$H][2]
Kozminski and co-workers	1. 2D RD-H$\underline{NCA}$[3] 2. 2D RD-H$\underline{N}$(CO)$\underline{CA}$[3] 3. 2D RD-$\underline{HACAN}$H[3] 4. 2D DQ-H$\underline{N}${$\underline{CACB}$}[4] 5. 2D DQ-H$\underline{N}$(CO){$\underline{CACB}$}[4] 6. 2D H$\underline{NCO}$[5] 7. 2D H$\underline{NCA}$[5] 8. 2D H$\underline{N}$(CO)$\underline{CA}$[5] 9. 2D H(N)$\underline{COCA}$[5]	(3,2)D HN$\underline{NCA}$ [6] (3,2)D HN$\underline{N}$(CO)$\underline{CA}$ [6] (4,2)D $\underline{HACAN}$H (4,2)D HN$\underline{NC}^{\alpha\beta}\underline{C}^{\alpha}$ (4,2)D HN$\underline{N}$(CO)$\underline{C}^{\alpha\beta}\underline{C}^{\alpha}$ (3,2)D HN$\underline{NCO}$ [6] (3,2)D HN$\underline{NCA}$ [6] (3,2)D HN$\underline{N}$(CO)$\underline{CA}$[6] (3,2)D HN(N)$\underline{COCA}$
Brutscher and co-workers	1. 2D DQ/ZQ HNCA[7] 2. 2D DQ/ZQ HN(CO)CA[7] 3. 2D DQ/ZQ HNCACB[7] 4. 2D DQ/ZQ HN(COCA)CB[7] 5. 2D DQ/ZQ HN(CA)HA[7] **6.** 2D DQ/ZQ HN(COCA)HA[7]	(3,2)D HN$\underline{NCA}$ [6] (3,2)D HN$\underline{N}$(CO)$\underline{CA}$[6] (3,2)D HN$\underline{NC}^{\alpha\beta}\underline{C}^{\alpha}$ [8] (3,2)D HN$\underline{N}$(COCA)$\underline{CB}$ [6] (3,2)D HN$\underline{N}$(CA)$\underline{HA}$ (3,2)D HN$\underline{N}$(COCA)$\underline{HA}$
Kupce and Freeman	**1. 3D PR-HNCO**[9] Tilt angles: $\alpha=30^0$ Tilt angles: $\alpha=0^0, 90^0$ **2. 3D PR-HNCA**[10] Tilt angles: $\alpha=\pm30^0$ Tilt angles: $\alpha=0^0, 90^0$ **3. 3D PR-HN(CO)CA**[10] Tilt angles: $\alpha=\pm60^0$ Tilt angles: $\alpha=0^0, 90^0$ **4. 4D PR-HNCOCA**[11] Tilt angles: $\alpha=\pm45^0$; $\beta=\pm45^0$ Tilt angles: $\alpha=0^0$; $\beta=0^0$ $\alpha=90^0$; $\beta=0^0$ $\alpha=0^0$; $\beta=90^0$ **5. The 'TILT' experiment: 3D ^{15}N-**	**1. (3,2)D HN$\underline{NCO}$**[6] Scaling factors (κ): N=0.5; CO=0.87 2D [^{13}C', ^{1}H] Projection of 3D HNNCO, 2D [^{15}N, ^{1}H] HSQC **2. (3,2)D HN$\underline{NCA}$**[6] Scaling factors (κ): N=0.5; CA=0.87 2D [^{13}C', ^{1}H] Projection of 3D HNNCA, 2D [^{15}N, ^{1}H] HSQC **3. (3,2)D HN$\underline{N}$(CO)$\underline{CA}$**[6] Scaling factors (κ): N=0.87; CA=0.5 2D [^{13}C', ^{1}H] Projection of 3D HNN(CO)CA, 2D [^{15}N, ^{1}H] HSQC **4. (4,2)D HN$\underline{NCOCA}$** Scaling factors(κ): N=0.71; CO=0.5; CA=0.5 2D [^{13}C', ^{1}H] Projection of 4D HNNCOCA 2D [$^{13}C^{\alpha}$, ^{1}H] Projection of 4D HNNCOCA 2D [^{15}N, ^{1}H] HSQC **5. (3,2)D [$\underline{H}$]-NOESY-[$\underline{N}$H] /(3,2)D [$\underline{H}$]-**

	NOESY-HSQC and ^{15}N-TOCSY-HSQC[12] Tilt angle: $\alpha=0^0$, $\alpha=\pm30^0$	**TOCSY-[NH]**[2] Scaling factors(κ): H=1.0, N=0.0 H=0.87, N=0.5
	6. Hyper-dimensional NMR using PR-NMR experiments described in 1-4 above[13]	**6. A set of (3,2)D and (4,2)D GFT NMR experiments described in 1-4 above**
Zhou and co-workers	**1. 5-D HACACONH**[14] Tilt angles: N=±60, CO=±60, CA=±60, HA=±60 Tilt angles: N=0^0, CO=90^0, CA=90^0, HA=90^0 N=90^0, CO=0^0, CA=90^0, HA=90^0 N=90^0, CO=90^0, CA=0^0, HA=90^0 N=90^0, CO=90^0, CA=90^0, HA=0^0	**1. (5,2)D HACACONHN**[15] Scaling factor (κ): N=0.5, CO=0.5, CA=0.5, HA=0.5 2D [^{15}N, ^{1}H] HSQC 2D [^{13}C', ^{1}H] Projection of 4D/5D HACACONHN 2D [$^{13}C^{\alpha}$, ^{1}H] Projection of 4D/5D HACACONHN 2D [$^1H^{\alpha}$, ^{1}H] Projection of 4D/5D HACACONHN
	2. (4,2)D PR-HNCACB[16] Tilt angles: N=86.0^0, CA=15.5^0, CB=75.0^0 N=73.9^0, CA=33.7^0, CB=61.3^0 N=54.7^0, CA=54.7^0, CB=54.7^0 N=33.7^0, CA=73.9^0, CB=61.3^0 N=15.5^0, CA=86.0^0, CB=75.0^0 Tilt angles: N=0^0, CA=90^0, CB=90^0 N=90^0, CA=0^0, CB=90^0 N=90^0, CA=90^0, CB=0^0	**2. (4,2)D HNNC$^{\alpha\beta}$C$^{\alpha}$** Scaling factors(κ): N=0.07, C^{α}=0.96, C^{β}=0.26 N=0.28, C^{α}=0.83, C^{β}=0.48 N=0.58,C^{α}=0.58, C^{β}=0.58 N=0.83, C^{α}=0.28, C^{β}=0.48 N=0.96, C^{α}=0.07, C^{β}=0.26 2D [^{15}N, ^{1}H] HSQC 2D [$^{13}C^{\alpha}$, ^{1}H] Projection of 3D/4D HNNCACB 2D [$^{13}C^{\beta}$, ^{1}H] Projection of 4D HNNCACB
	3. (4,2)D PR-HN(CO)CACB[16] Tilt angles same as in (2)	**3. (4,2)D HNN(CO)C$^{\alpha\beta}$C$^{\alpha}$** Scaling Factors same as in (2)
	4. (4,2)D PR-Intra-HNCACB[16] Tilt angles same as in (2)	**4. (4,2)D Intra-HNNC$^{\alpha\beta}$C$^{\alpha}$** Scaling Factors same as in (2)
	5. (4,2)D PR-HNCACO[16] Tilt angles same as in (2) with CB shift evolution replaced by CO	**5. (4,2)D Intra-HNNCACO** Scaling Factors same as in (2) with C^{β} shift evolution replaced by CO
	6. (4,2)D PR-HNCOCA[16] Tilt angles same as in (2) with CA shift evolution replaced by CO and CB shift evolution replaced by CA	**6. (4,2)D HNNCOCA** Scaling Factors same as in (2) with C^{α} replaced by CO and C^{β} replaced by CA
	7. (4,2)D PR-HNCO$_{i-1}$CA$_i$[16] Tilt angles same as in (2) with CA shift evolution replaced by CO and CB shift evolution replaced by CA	**7. (4,2)D HNN<CO,CA>** Scaling Factors same as in (2) with C^{α} shift evolution replaced by CO and C^{β} shift evolution replaced by CA

	8. (4,2)D PR-HACANH[16] Tilt angles same as in (2) with CA shift evolution replaced by HA and CB shift evolution replaced by CA	**8. (4,2)D HACANHN** Scaling Factors same as in (2) with C^{α} shift evolution replaced by HA and C^{β} shift evolution replaced by CA
	9. (4,2)D PR-HACA(CO)NH[16] Tilt angles same as in (2) with CA shift evolution replaced by HA and CB shift evolution replaced by CA	**9. (4,2)D HACA(CO)NH**[15] Tilt angles same as in (2) with CA shift evolution replaced by HA and CB shift evolution replaced by CA
	10. (4,2)D PR CH_3-N NOESY[17] Tilt angles: 100 Projection angles distributed evenly in angle space: N=α_i; H= β_i; C=γ_i; i=1..100	**10. (4,2)D [HC^{ali}]-NOESY-[NH]**[12] Scaling factors(κ): N = cos(α_i), H = cos(β_i), C^{ali}= cos(γ_i); i=1..100
	11. (4,3)D HC(CO)NH-TOCSY and (4,3)D HC(C)NH-TOCSY[18] Tilt angles: $\alpha=0^0, \pm18^0, \pm36^0, \pm54^0, \pm72^0, 90^0$	**11. (4,3)D HC(CO)NH-TOCSY and (4,3)D HC(C)NH-TOCSY** Scaling factors(κ): ^{1}H=1.0, 0.95, 0.81, 0.58, 0.31, 0.0 ^{13}C=0.0, 0.31, 0.58, 0.81, 0.95, 1.0
Wüthrich and co-workers	**1. 4D APSY-HNCOCA**[19] Tilt angles: $\alpha=\pm30^0$; $\beta=0^0$ $\alpha=\pm60^0$; $\beta=0^0$ Tilt angles: $\alpha=0^0$; $\beta=\pm30^0$ $\alpha=0^0$; $\beta=\pm60^0$ Tilt angles: $\alpha=90^0$; $\beta=\pm30^0$ $\alpha=90^0$; $\beta=\pm60^0$ Tilt angles: $\alpha=\pm30^0$; $\beta=\pm30^0$ $\alpha=\pm60^0$; $\beta=\pm30^0$ $\alpha=\pm45^0$; $\beta=\pm60^0$ Tilt angles: $\alpha=0^0$; $\beta=0^0$ $\alpha=90^0$; $\beta=0^0$ $\alpha=0^0$; $\beta=90^0$ **2. 5D APSY-HACACONH**[19] Tilt angles: $\alpha=\pm30^0$; $\beta=0^0$; $\gamma=0^0$ $\alpha=\pm60^0$; $\beta=0^0$; $\gamma=0^0$	**1. Set of (3,2)D and (4,2)D GFT NMR experiments:** **(3,2)D HN(N)COCA** Scaling factors(κ): CO=0.5; CA=0.87; CO=0.87; CA=0.5 **(3,2)D HNN(CO)CA** [6] Scaling factors(κ): N=0.5; CA=0.87 N=0.87; CA=0.5 **(3,2)D HNNCO**[6] Scaling factors(κ): N=0.5; CO=0.87 N=0.87; CO=0.5 **(4,2)D HNNCOCA** Scaling factors(κ): N=0.5; CO=0.44; CA=0.75 N=0.5; CO=0.75; CA=0.44 N=0.87; CO=0.35; CA=0.35 2D [$^{13}C^{\alpha}$, ^{1}H] Projection of 4D HNNCOCA 2D [^{13}C', ^{1}H] Projection of 4D HNNCOCA 2D [^{15}N, ^{1}H] HSQC **2. A set of (3,2)D GFT NMR experiments** **(3,2)D (HACA)CONHN** Scaling factors(κ): N= 0.87; CO=0.5 Scaling factors(κ): N= 0.5; CO=0.87

Tilt angles: $\alpha=0^0$; $\beta=\pm30^0$; $\gamma=0^0$ $\alpha=0^0$; $\beta=\pm60^0$; $\gamma=0^0$	**(3,2)D (HA)CA(CO)NHN** Scaling factors(κ): N= 0.87; CA=0.5 N= 0.5; CA=0.87
Tilt angles: $\alpha=0^0$; $\beta=0^0$; $\gamma=\pm30^0$ $\alpha=0^0$; $\beta=0^0$; $\gamma=\pm60^0$	**(3,2)D HA(CACO)NHN** Scaling factors(κ): N= 0.87; HA=0.5 N= 0.5; HA=0.87
Tilt angles: $\alpha=90^0$; $\beta=\pm30^0$; $\gamma=0^0$ $\alpha=90^0$; $\beta=\pm60^0$; $\gamma=0^0$	**(3,2)D (HA)CACO(N)HN** Scaling factors(κ): CA= 0.5; CO=0.87 CA= 0.87; CO=0.5
Tilt angles: $\alpha=90^0$; $\beta=0^0$; $\gamma=\pm30^0$ $\alpha=90^0$; $\beta=0^0$; $\gamma=\pm60^0$	**(3,2)D HA(CA)CO(N)HN** Scaling factors(κ): CO= 0.87; HA=0.5 CO= 0.5; HA=0.87
Tilt angles: $\alpha=0^0$; $\beta=90^0$; $\gamma=\pm30^0$ $\alpha=0^0$; $\beta=90^0$; $\gamma=\pm60^0$	**(3,2)D HACA(CON)HN** Scaling factors(κ): CA= 0.87; HA=0.5 CA= 0.5; HA=0.87
Tilt angles: $\alpha=0^0$; $\beta=0^0$; $\gamma=0^0$ $\alpha=90^0$; $\beta=0^0$; $\gamma=0^0$ $\alpha=0^0$; $\beta=90^0$; $\gamma=0^0$ $\alpha=0^0$; $\beta=0^0$; $\gamma=90^0$	2D [^{15}N, ^{1}H] HSQC 2D [^{13}C', ^{1}H] Projection of 4D HNNCOCA 2D [$^{13}C^{\alpha}$, ^{1}H] Projection of 4D HNNCOCA 2D [$^{1}H^{\alpha}$, ^{1}H] Projection of 4D HNNCOCA
3. 6D APSY-HACACONH[20]	**3. Set of (3,2)D GFT NMR experiments:**
Tilt angles: $\alpha=0^0$; $\beta=0^0$; $\gamma=90^0$; $\delta=\pm30^0$	**(3,2)D HNN(COCAN)HN** Scaling factors(κ): N= 0.87; HN=0.5
Tilt angles: $\alpha=0^0$; $\beta=90^0$; $\gamma=0^0$; $\delta=\pm60^0$	**(3,2)D HN(N)CO(CAN)HN** Scaling factors(κ): CO= 0.5; HN=0.87
Tilt angles: $\alpha=90^0$; $\beta=0^0$; $\gamma=0^0$; $\delta=\pm30^0$	**(3,2)D HN(NCO)CA(N)HN** Scaling factors(κ): CA= 0.87; HN=0.5
Tilt angles: $\alpha=90^0$; $\beta=0^0$; $\gamma=0^0$; $\delta=\pm30^0$	**(3,2)D HN(NCOCA)NHN** Scaling factors(κ): N= 0.5; HN=0.87
Tilt angles: $\alpha=0^0$; $\beta=90^0$; $\gamma=\pm30^0$; $\delta=0^0$	**(3,2)D (HN)NCO(CAN)HN** Scaling factors(κ): CO= 0.87; N=0.5
Tilt angles: $\alpha=90^0$; $\beta=0^0$; $\gamma=\pm60^0$; $\delta=0^0$	**(3,2)D (HN)N(CO)CA(N)HN** Scaling factors(κ): CA= 0.5; N=0.87
Tilt angles: $\alpha=0^0$; $\beta=0^0$; $\gamma=\pm30^0$; $\delta=0^0$	**(3,2)D (HN)N(COCA)NHN** Scaling factors(κ): CA= 0.87; N=0.5
Tilt angles: $\alpha=90^0$; $\beta=\pm60^0$; $\gamma=0^0$; $\delta=0^0$	**(3,2)D (HNN)COCA(N)HN** Scaling factors(κ): CA= 0.5; CO=0.87
Tilt angles: $\alpha=0^0$; $\beta=\pm30^0$; $\gamma=0^0$; $\delta=0^0$	**(3,2)D (HNN)CO(CA)NHN** Scaling factors(κ): CA= 0.87; CO=0.5
Tilt angles: $\alpha=\pm30^0$; $\beta=0^0$; $\gamma=0^0$; $\delta=0^0$	**(3,2)D (HNNCO)CANHN**

		Scaling factors(κ): N= 0.87; CA=0.5
	Tilt angles: $\alpha=0^0$; $\beta=0^0$; $\gamma=0^0$; $\delta=0^0$ $\alpha=90^0$; $\beta=0^0$; $\gamma=0^0$; $\delta=0^0$ $\alpha=0^0$; $\beta=90^0$; $\gamma=0^0$; $\delta=0^0$ $\alpha=0^0$; $\beta=0^0$; $\gamma=90^0$; $\delta=0^0$ $\alpha=0^0$; $\beta=0^0$; $\gamma=0^0$; $\delta=90^0$	2D [^{15}N, ^{1}H] HSQC 2D [$^{13}C^{\alpha}$, ^{1}H] Projection of 3D HNNCA 2D [^{13}C', ^{1}H] Projection of 3D HNN(CA)CO 2D [^{15}N, ^{1}H] Projection of 3D HNNCO 2D [^{1}H, ^{1}H] Projection of 4D HNNCOCA
Wagner and co-workers	**3D RD-HCcoNH-TOCSY**[21]	**(4,3)D HC(CO)NHN-TOCSY**
Markley and co-workers	**1. 3D HNCO**[22] Tilt angles: $\alpha=50^0, 35^0, 10^0, 70^0, 20^0, 25^0, 45^0$ **2. 3D HNCACB**[22] Tilt angles: $\alpha=20^0, 10^0, 30^0, 40^0, 50^0, 60^0, 70^0$ **3. 3D CBCA(CO)NHN**[22] Tilt angles: $\alpha=50^0, 55^0, 40^0, 70^0, 30^0, 65^0, 20^0$	**1. (3,2)D HNNCO**[6] Scaling factors(κ): N=0.76, 0.57, 0.17, 0.94, 0.34, 0.42, 0.71 CO =0.64, 0.82, 0.98, 0.34, 0.94, 0.90, 0.71 **2. (3,2)D HNNCACB**[6] Scaling factors(κ): N=0.34, 0.17, 0.50, 0.64, 0.76, 0.87, 0.94 CA/CB=0.94, 0.98, 0.87, 0.76, 0.64, 0.50, 0.34 **3. (3,2)D CBCA(CO)NHN**[6] Scaling factors(κ): N=0.76, 0.82, 0.65, 0.94, 0.87, 0.90, 0.34 CA/CB=0.64, 0.57, 0.76, 0.34, 0.50, 0.42, 0.94

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