

1. Experimental data of synthesised 1,4-dihydropyridines

2,6-Di(bromomethyl)-3,5-bis(ethoxycarbonyl)-4-methyl-1,4-dihydropyridine (1a). Yield 1.25g, 59%, mp 92-94 °C. Anal. calcd. for C₁₄H₁₉Br₂NO₄: C, 39.55; H, 4.50; N, 3.29; found: C, 39.91; H, 4.37; N, 3.27.

2,6-Di(bromomethyl)-3,5-bis(ethoxycarbonyl)-4-phenyl-N-methyl-1,4-dihydropyridine (1b). Yield 2.19 g, 88 %, mp 124-126 °C. Anal. calcd. for C₂₀H₂₃Br₂NO₄: C, 47.92; H, 4.62; N, 2.79; found: 48.38; H, 4.61; N, 2.77.

2,6-Di(bromomethyl)-3,5-bis(ethoxycarbonyl)-4-(2-trifluoromethylphenyl)-1,4-dihydropyridine (1c). Yield 2.10 g , 76%, mp 111-112 °C. Anal. calcd. for C₂₀H₂₀Br₂F₃NO₄: C, 43.27; H 3.63; N 2.52; found: C, 43.52; H, 3.40; N, 2.42.

2,6-Di(bromomethyl)-3,5-bis(2-propoxyethoxycarbonyl)-4-(2-difluoromethoxyphenyl)-1,4-dihydropyridine (1d). Yield 2.1 g, 61%, mp 102-105 °C. Anal. calcd. for C₂₆H₃₃Br₂F₂NO₇: C, 46.65; H, 4.97; N, 2.09; found: 46.83; H, 4.91; N, 2.05.

1,1'-[3,5-Bis(ethoxycarbonyl)-4-methyl-1,4-dihydropyridine-2,6-diyl]dimethylene}bispyridinium dibromide (2 a). Yield 0.73 g, 63%, mp 195-197 °C. MS(+ESI) *m/z* (relative intensity) 423 [(M-2Br)⁺, 20). Anal. calcd. for C₂₄H₂₉Br₂N₃O₄: C, 49.42; H, 5.01; N, 7.20; found: C, 49.80; H, 4.83; N, 7.00.

1,1'-[3,5-Bis(ethoxycarbonyl)-4-phenyl-N-methyl-1,4-dihydropyridine-2,6-diyl]dimethylene}bispyridinium dibromide (2 b). Yield 0.86 g, 66%, mp 196-200 °C. MS(+ESI) *m/z* (relative intensity) 499 [(M-2Br)⁺, 10). Anal. calcd. for C₃₀H₃₃Br₂N₃O₄: C, 54.64; H, 5.04; N, 6.37; found: C, 54.92; H, 4.80; N, 6.08.

1,1'-[3,5-Bis(ethoxycarbonyl)-4-(2-trifluoromethylphenyl)-1,4-dihydropyridine-2,6-diyl]dimethylene}bispyridinium dibromide (2 c). Yield 1.32 g, 93%, mp 204-205 °C. MS(+ESI) *m/z* (relative intensity) 553 [(M-2Br)⁺, 15). Anal. calcd. for C₃₀H₃₀Br₂F₃N₃O₄: C, 50.51; H, 4.24; N, 5.89; found: C, 50.23; H, 4.15; N, 5.73.

1,1'-[3,5-Bis(2-propoxyethoxycarbonyl)-4-(2-difluoromethoxyphenyl)-1,4-dihydropyridine-2,6-diyl]dimethylene}bispyridinium dibromide (2 d). Yield 1.23 g, 74%, mp 174 °C. MS(+ESI) *m/z*

(relative intensity) 669 $[(M-2Br)^+, 31]$. Anal. calcd. for $C_{36}H_{43}Br_2F_2N_3O_7$: C, 52.25; H 5.23; N 5.08; found: C, 52.24; H, 5.17; N, 4.89.

1,1'-{[3,5-Bis(methoxycarbonyl)-4-(2-difluoromethoxyphenyl)-N-methyl-2,6-diyl]dimethylene}bispyridinium dibromide (2 h). Yield 1.15 g, 82%, mp 198-200 °C. MS(+ESI) m/z (relative intensity) 537 $[(M-2Br)^+, 25]$. Anal. calcd. For $C_{29}H_{29}Br_2F_2N_3O_5$: C, 49.95; H, 4.19; N, 6.03; found: C, 50.15; H, 4.30; N, 5.86.

2. Table of 1H NMR spectral data.

Table of ¹H NMR spectral data

Comp.	Solvent	Residual ¹ H NMR signals of compounds 1-5
1a	CDCl ₃	1.02(d, <i>J</i> =6.8Hz, 3H, CH ₃) 1.32(t, <i>J</i> =7.2 Hz, 6H, 2CH ₃), 3.89(kv, <i>J</i> =6.8 Hz, 1H, CH), 4.22-4.29(m, 4H, 2CH ₂)
	DMSO	0.82(d, <i>J</i> =6.6Hz, 3H, CH ₃), 1.22(t, <i>J</i> =7.1Hz, 6H, 2CH ₃), 3.71(kv, <i>J</i> =6.6Hz, 1H, CH), 4.10-4.19(m, 4H, 2CH ₂)
1b	CDCl ₃	1.31(t, <i>J</i> =7.3Hz, 6H, 2CH ₃), 3.46(s, 3H, NCH ₃), 4.24(kv, <i>J</i> =7.3Hz, 4H, 2CH ₂), 5.23(s, 1H, CH), 7.16-7.23 (m, 5H, C ₆ H ₅)
	DMSO	1.21(t, <i>J</i> =7.2Hz, 6H, 2CH ₃), 3.42(s, 3H, CH ₃), 4.14(kv, <i>J</i> =7.2Hz, 4H, 2CH ₂), 5.03(s, 1H, CH), 7.08-7.23 (m, 5H, C ₆ H ₅)
1c	CDCl ₃	1.20(t, <i>J</i> =7.1Hz, 6H, 2CH ₃), 4.03-4.21(m, 4H, 2CH ₂), 5.62 (kv, <i>J</i> =1Hz, 1H, CH), 7.29-7.51(m, 4H, C ₆ H ₄)
	DMSO	1.10(t, <i>J</i> =7.1Hz, 6H, 2CH ₃), 3.94-4.06(m, 4H, 2CH ₂), 5.44(kv, <i>J</i> =1 Hz, 1H, CH), 7.37-7.56(m, 4H, C ₆ H ₄)
1d	CDCl ₃	0.88(t, <i>J</i> =6.8Hz, 6H, 2CH ₃), 1.55(m, 4H, 2CH ₂), 3.35(t, <i>J</i> =6.8Hz, 4H, 2CH ₂), 3.59 (m, 4H, 2CH ₂), 4.20(t, <i>J</i> =4.9Hz, 4H, 2CH ₂), 5.33(s, 1H, CH), 60(t, <i>J</i> =75Hz, 1H, CH) 7.01(d, <i>J</i> =8.4Hz, 1H, C ₆ H ₄), 7.08(td, <i>J</i> =7.4; <i>J</i> =0.9Hz, 1H, C ₆ H ₄), 7.17(td, <i>J</i> =7.6 Hz, <i>J</i> =0.9 Hz, C ₆ H ₄), 7.37(dd, <i>J</i> =7.8 Hz, <i>J</i> =1.6 Hz, 1H, C ₆ H ₄)
	DMSO	0.81(t, <i>J</i> =7.5Hz, 6H, 2CH ₃), 1.44(m, 4H, 2CH ₂), 3.28(t, <i>J</i> =6.8Hz, 4H, 2CH ₂), 3.52(t, <i>J</i> =4.7Hz, 4H, 2CH ₂), 4.06-4.12(m, 4H, 2CH ₂), 5.22(s, 1H, CH), 7.01(d, <i>J</i> =8.3Hz, 1H, C ₆ H ₄), 7.04(t, <i>J</i> =74Hz, 1H, C ₆ H ₄), 7.09(td, <i>J</i> =7.6 Hz, <i>J</i> =0.8 Hz, 1H, C ₆ H ₄), 7.20(td, <i>J</i> =7.6 Hz, <i>J</i> =0.9 Hz, 1H, C ₆ H ₄), 7.26(dd, <i>J</i> =7.6 Hz, <i>J</i> =1.2 Hz, 1H, C ₆ H ₄)
1e	CDCl ₃	1.31(t, <i>J</i> =7.1Hz, 6H, 2CH ₃), 3.64(s, 3H, CH ₃), 4.20-4.30 (m, 4H, 2CH ₂), 4.97(s, 1H, CH)
	DMSO	1.21(t, <i>J</i> =7.1Hz, 6H, 2CH ₃), 3.51(s, 3H, CH ₃), 4.11-4.21(m, 4H, 2CH ₂), 4.79(s, 1H, CH)
1f	CDCl ₃	1.25(t, <i>J</i> =7Hz, 6H, 2CH ₃), 4.14(m, 4H, 2CH ₂), 5.02(s, 1H, CH), 7.17-7.27(m, 5H, C ₆ H ₅)
	DMSO	1.15(t, <i>J</i> =7 Hz, 6H, 2CH ₃), 4.05(m, 4H, 2CH ₂), 4.89(s, 1H, CH), 7.12-7.24(m, 5H, C ₆ H ₅)
1g	CDCl ₃	3.66(s, 6H, 2CH ₃), 5.35(s, 1H, CH), 6.50 (t, <i>J</i> =75Hz, 1H, CH), 7.01(d, <i>J</i> =7.6 Hz, 1H, C ₆ H ₄), 7.10(t, <i>J</i> =7.6Hz, 1H, C ₆ H ₄), 7.19(t, <i>J</i> =7.6Hz, 1H, C ₆ H ₄), 7.33(d, <i>J</i> =7.6Hz, 1H, C ₆ H ₄)
	DMSO	3.55(s, 6H, 2CH ₃), 5.26(s, 1H, CH), 7.02(d, <i>J</i> =7.8Hz, 1H, C ₆ H ₄), 7.10(td, <i>J</i> =7.5Hz, <i>J</i> =1.1Hz, 1H, C ₆ H ₄), 7.12(t, <i>J</i> =74.3Hz, 1H, CH), 7.21(td, <i>J</i> =7.5Hz, <i>J</i> =1.8Hz, 1H, C ₆ H ₄), 7.24(dd, <i>J</i> =7.5, <i>J</i> =1.8Hz, 1H, C ₆ H ₄)
1h	CDCl ₃	0.89(t, <i>J</i> =7Hz, 6H, 2CH ₃), 1.27(m, 36H, 18CH ₂), 1.61(t, <i>J</i> =7 Hz, 4H, 2CH ₂), 4.07(m, 4H, 2CH ₂), 5.02(s, 1H), 7.16-7.28(m, 5H, C ₆ H ₅)
	DMSO	0.83(t, <i>J</i> =7Hz, 6H, 2CH ₃), 1.23(m, 36H, 18CH ₂), 1.53(m, 4H, 2CH ₂), 3.98(t, <i>J</i> =6.1Hz, 4H, 2CH ₂), 4.91(s, 1H), 7.10-7.21(m, 5H, C ₆ H ₅)
1i	CDCl ₃	3.49(s, 3H, NCH ₃), 3.75 (s, 6H, 2CH ₃), 5.26(s, 1H, CH), 6.50(t, <i>J</i> =75.5 Hz, 1H, CHF ₂), 7.01 (d, <i>J</i> =8.2Hz, 1H, C ₆ H ₄), 7.07(td, <i>J</i> =7.8Hz, <i>J</i> =1.1Hz, 1H, C ₆ H ₄), 7.11(dd, <i>J</i> =7.7Hz, <i>J</i> =1.8Hz, 1H, C ₆ H ₄), 7.19(td, <i>J</i> =7.7Hz, <i>J</i> =1.8Hz, 1H, C ₆ H ₄)
	DMSO	3.41(s, 3H, NCH ₃), 3.66 (s, 6H, 2CH ₃), 5.35(s, 1H, CH), 7.0 (dd, <i>J</i> =7.8Hz; 1.3 Hz, 1H, C ₆ H ₄), 7.06 (td, <i>J</i> =7.8Hz, <i>J</i> =1.3Hz, 1H, C ₆ H ₄), 7.19(t, <i>J</i> =74 Hz, 1H, CHF ₂), 7.23(m, 2H, C ₆ H ₄)
2a	CDCl ₃	1.16(d, <i>J</i> =6.5Hz, 3H, CH ₃), 1.33(t, <i>J</i> =7.4Hz, 6H, 2CH ₃), 3.96(kv, <i>J</i> =6.5Hz, 1H, CH), 4.21-4.30(m, 4H, 2CH ₂), 8.20(t, <i>J</i> =7.4Hz, 4H, 2C ₆ H ₄ N), 8.69(t, <i>J</i> =7.4Hz, 2H, 2C ₆ H ₄ N), 9.31(dd, <i>J</i> =7.4Hz, <i>J</i> =1.2Hz, 4H, 2C ₆ H ₄ N).
	DMSO	1.03(d, <i>J</i> =6.5Hz, 3H, CH ₃), 1.15(t, <i>J</i> =7.4Hz, 6H, 2CH ₃), 3.86(kv, <i>J</i> =6.5Hz, 1H, CH), 4.09-4.19(m, 4H, 2CH ₂), 8.06(t, <i>J</i> =7.4Hz, 4H, 2C ₆ H ₄ N), 8.55(t, <i>J</i> =7.5Hz, <i>J</i> =1.1Hz, 2H, 2C ₆ H ₄ N), 8.91(dd, <i>J</i> =7.5Hz, <i>J</i> =1.2Hz, 4H, 2C ₆ H ₄ N)
2b	CDCl ₃	1.30(t, <i>J</i> =7.7Hz, 6H, 2CH ₃), 3.55(s, 3H, CH ₃), 4.22 (kv, <i>J</i> =7.7Hz, 4H, 2CH ₂), 5.26(s, 1H, CH), 7.26-7.36 (m, 5H, C ₆ H ₅), 8.10(t, <i>J</i> =7.2Hz, 4H, 2C ₆ H ₄ N), 8.43(t, <i>J</i> =7.2Hz, 2H, 2C ₆ H ₄ N), 9.39(d, <i>J</i> =7.2Hz, 4H, 2C ₆ H ₄ N)

	DMSO	1.17(t, $J=7.6$ Hz, 6H, 2CH ₃), 3.28(s, 3H, CH ₃), 4.17 (kv, $J=7.6$ Hz, 4H, 2CH ₂), 5.13(s, 1H, CH), 7.26-7.34 (m, 5H, C ₆ H ₅), 8.02(t, $J=7.1$ Hz, 4H, 2C ₆ H ₄ N), 8.50(t, $J=7.2$ Hz, 2H, 2C ₆ H ₄ N), 8.84(d, $J=7.2$ Hz, 4H, 2C ₆ H ₄ N)
2c	CDCl ₃	1,20(t, $J=7.2$ Hz, 6H, 2CH ₃), 4.09-4.23 (m, 4H, 2CH ₂), 5.79(kv, $J=2.1$ Hz, 1H, CH), 7.33(t, $J=7.8$ Hz, 1H, C ₆ H ₄), 7.54(d, $J=7.8$ Hz, 1H, C ₆ H ₄), 7.59(d, $J=7.8$ Hz, 1H, C ₆ H ₄), 7.69(t, $J=7.8$ Hz, 4H, C ₆ H ₄), 8.20(t, $J=7.1$ Hz, 4H, 2C ₆ H ₄ N), 8.55(t, $J=7.1$ Hz, 2H, 2C ₆ H ₄ N), 9.40(d, $J=7.1$ Hz, 4H, 2C ₆ H ₄ N)
	DMSO	1,02(t, $J=7.2$ Hz, 6H, 2CH ₃), 3.92-4.06 (m, 4H, 2CH ₂), 5.58(kv, $J=2.1$ Hz, 1H, CH), 7.42(t, $J=7.6$ Hz, 1H, C ₆ H ₄), 7.57(d, $J=7.6$ Hz, 1H, C ₆ H ₄), 7.62(t, $J=7.6$ Hz, 1H, C ₆ H ₄), 7.70(d, $J=7.6$ Hz, H, C ₆ H ₄), 8.13(t, $J=7.4$ Hz, 4H, 2C ₆ H ₄ N), 8.59(t, $J=7.4$, 2H, 2C ₆ H ₄ N), 9.06(d, $J=7.4$ Hz, 4H, 2C ₆ H ₄ N)
2d	CDCl ₃	0.84(t, $J=7.8$ Hz, 6H, 2CH ₃), 1.49(m, 4H, 2CH ₂), 3.30(m, 4H, 2CH ₂), 3.52(m, 4H, 2CH ₂), 4.18(m, 4H, 2CH ₂), 5.33(s, 1H, CH), 6.91(t, $J=64.7$ Hz, 1H, CHF ₂), 7.03(t, $J=7.8$ Hz, 1H, C ₆ H ₄), 7.06(d, $J=7.8$, $J=1.8$ Hz, 1H, C ₆ H ₄), 7.19(td, $J=7.8$ Hz, $J=1.8$ Hz, 1H, C ₆ H ₄), 7.36(dd, $J=7.8$ Hz, $J=1.8$ Hz, 1H, C ₆ H ₄), 8.19(t, $J=7.8$ Hz, 4H, 2C ₆ H ₄ N), 8.67(td, $J=7.8$ Hz, $J=1.2$ Hz, 2H, 2C ₆ H ₄ N), 9.44(dd, $J=7.8$ Hz, $J=1.1$ Hz, 4H, 2C ₆ H ₄ N).
	DMSO	0.77(t, $J=7.8$ Hz, 6H, 2CH ₃), 1.38(m, 4H, 2CH ₂), 3.20(t, $J=6.8$ Hz, 4H, 2CH ₂), 3.44(m, 4H, 2CH ₂), 4.07(m, 4H, 2CH ₂), 5.32(s, 1H, CH), 7.04(d, $J=7.6$ Hz, 1H, C ₆ H ₄), 7.11(t, $J=74.3$ Hz, 1H, CHF ₂) 7.12(t, $J=7.3$ Hz, 1H, C ₆ H ₄), 7.28(t, $J=7.8$ Hz, 1H, C ₆ H ₄), 7.42(d, $J=7.8$ Hz, 1H, C ₆ H ₄), 8.11(t, $J=7.7$ Hz, 4H, 2C ₆ H ₄ N), 8.60(t, $J=7.7$ Hz, 2H, 2C ₆ H ₄ N), 9.03(d, $J=7.2$ Hz, 4H, 2C ₆ H ₄ N).
2e	CDCl ₃	1.29(t, $J=7.4$ Hz, 6H, 2CH ₃), 3.69(s, 3H, CH ₃), 4.19-4.30 (m., 4H, 2CH ₂), 5.11 (s, 1H, CH), 8.17 (t, $J=7.1$ Hz, 4H, 2C ₆ H ₄ N), 8.60(t, $J=7.1$ Hz, 2H, 2C ₆ H ₄ N), 9.32(d, $J=7.6$ Hz, 4H, 2C ₆ H ₄ N)
	DMSO	1.13(t, $J=7.4$ Hz, 6H, 2CH ₃), 3.58(s, 3H, CH ₃), 4.09-4.19 (m., 4H, 2CH ₂), 4.91 (s, 1H, CH), 8.12 (t, $J=7.2$ Hz, 4H, 2C ₆ H ₄ N), 8.60(t, $J=7.2$ Hz, 2H, 2C ₆ H ₄ N), 8.89(d, $J=7.6$ Hz, 4H, 2C ₆ H ₄ N)
2f	CDCl ₃	1,23(t, $J=7.1$ Hz, 6H, 2CH ₃), 4.09(m, 4H, 2CH ₂), 5.10(s, 1H, CH), 7.21-7.28 (m, 5H, C ₆ H ₅), 8.19(t, $J=7.5$ Hz, 4H, 2C ₆ H ₄ N), 8.60(tt, $J=7.5$ Hz, $J=1$ Hz, 1Hz, 2H, 2C ₆ H ₄ N), 9.36(d, $J=7.5$ Hz, 4H, 2C ₆ H ₄ N),
	DMSO	1,18(t, $J=7.4$ Hz, 6H, 2CH ₃), 4.04(m, 4H, 2CH ₂), 5.01(s, 1H, CH), 7.18-7.28 (m, 5H, C ₆ H ₅), 8.10(t, $J=7.5$ Hz, 4H, 2C ₆ H ₄ N), 8.58(tt, $J=7.5$, $J=1.2$ Hz, 2H, 2C ₆ H ₄ N), 8.99(dd, $J=7.5$, $J=1.1$ Hz, 4H, 2C ₆ H ₄ N)
2g	CDCl ₃	3.68(s, 6H, 2CH ₃), 5.45(s, 1H, CH), 6.89(t, $J=74.1$ Hz, 1H, CHF ₂), 7.08 (d, $J=7.6$ Hz, 1H, C ₆ H ₄), 7.14 (t, $J=7.6$ Hz, 1H, C ₆ H ₄), 7.24(t, $J=7.6$ Hz, 1H, C ₆ H ₄), 7.34(dd, $J=7.8$ Hz, $J=1.7$ Hz, 1H, C ₆ H ₄), 8.16(t, $J=7.4$ Hz, 4H, 2C ₆ H ₄ N), 8.56(t, $J=7.5$ Hz, 2H, 2C ₆ H ₄ N), 8.16(d, $J=7.5$ Hz, 4H, 2C ₆ H ₄ N)
	DMSO	3.31(s, 6H, 2CH ₃), 5.36(s, 1H, CH), 7.03(d, $J=7.8$, 1H, C ₆ H ₄), 7.15 (t, $J=7.8$ Hz, 1H, C ₆ H ₄), 7.16 (t, $J=74.2$ Hz, CHF ₂), 7.27 (td, $J=7.6$ Hz, 1H, C ₆ H ₄), 7.41(dd, $J=7.6$ Hz, $J=1.2$ Hz, 1H, C ₆ H ₄), 8.11(t, $J=7.6$ Hz, 4H, 2C ₆ H ₄ N), 8.59(t, $J=7.6$ Hz, 2H, 2C ₆ H ₄ N), 9.02(d, $J=7.6$ Hz, 4H, 2C ₆ H ₄ N)
2h	CDCl ₃	3.53(s, 3H, NCH ₃), 3.76(s, 6H, 2CH ₃), 6.68(t, $J=74.2$ Hz, 1H, CHF ₂), 5.53 (s, 1H), 7.09 (d, $J=7.8$ Hz, 1H, C ₆ H ₄), 7.26-7.33 (m, 3H, C ₆ H ₄), 8.11(t, $J=7.8$ Hz, 4H, 2C ₆ H ₄ N), 8.49(t, $J=7.8$ Hz, 2H, 2C ₆ H ₄ N), 9.41 (d, $J=7.8$ Hz, 4H, 2C ₆ H ₄ N)
	DMSO	3.28(s, 3H, NCH ₃), 3.76(s, 6H, 2CH ₃), 5.49 (s, 1H, CH), 7.17 (t, $J=8.1$ Hz, 1H, C ₆ H ₄), 7.20(d, $J=8.1$ Hz, 1H, C ₆ H ₄), 7.27(d, $J=8.2$ Hz, 1H, C ₆ H ₄), 7.28(t, $J=73.6$ Hz, 1H, CHF ₂), 7.34(t, $J=8.2$ Hz, 1H, C ₆ H ₄), 8.01(t, $J=7.5$ Hz, 4H, 2C ₆ H ₄ N), 8.50(t, $J=7.6$ Hz, 2H, 2C ₆ H ₄ N), 8.81(d, $J=7.6$ Hz, 4H, 2C ₆ H ₄ N)
3a	CDCl ₃	0.89(t, $J=6.5$ Hz, 6H, 2CH ₃), 1.25(m, 28H, 14CH ₂), 1.61(m, 4H, 2CH ₂), 4.07(t, $J=6.5$ Hz, 4H, 2CH ₂), 5.09(s, 1H, CH), 7.22-7.29(m, 5H, C ₆ H ₅), 8.19(t, $J=7.5$ Hz, 4H, 2C ₆ H ₄ N), 8.60(t, $J=7.5$ Hz 2H, 2C ₆ H ₄ N), 9.34(d, $J=7.2$, 4H, 2C ₆ H ₄ N)
	DMSO	0.84(t, $J=6.9$ Hz, 6H, 2CH ₃), 1.20(m, 28H, 14CH ₂), 1.49(m, 4H, 2CH ₂), 3.98(t, $J=6.5$ Hz, 4H, 2CH ₂), 5.00(s, 1H, CH), 7.19-7.27(m, 5H, C ₆ H ₅), 8.08(t, $J=7.7$ Hz, 4H, 2C ₆ H ₄ N), 8.57(t, $J=7.7$ Hz, 2H, 2C ₆ H ₄ N), 8.94(d, $J=7.2$ Hz, 4H, 2C ₆ H ₄ N)
3b	CDCl ₃	0.88(t, $J=6.9$ Hz, 6H, 2CH ₃), 1.26(m, 36H, 18CH ₂), 1.60(m, 4H, 2CH ₂), 4.07(t, $J=7.1$ Hz, 4H, 2CH ₂), 5.08(s, 1H, CH), 7.20-7.29(m, 5H, C ₆ H ₅), 8.20(t, $J=7.3$ Hz, 4H, 2C ₆ H ₄ N), 8.61(t, $J=7.3$ Hz, 2H, 2C ₆ H ₄ N), 9.34(d, $J=7.3$, 4H, 2C ₆ H ₄ N)

	DMSO	0.84(t, $J=6.9\text{Hz}$, 6H, 2CH ₃), 1.23(m, 36H, 18CH ₂), 1.59(m, 4H, 2CH ₂), 3.98(t, $J=7.1\text{Hz}$, 4H, 2CH ₂), 5.01(s, 1H, CH), 7.18-7.28(m, 5H, C ₆ H ₅), 8.07(t, $J=7.2\text{Hz}$, 4H, 2C ₆ H ₄ N), 8.56(t, $J=7.2\text{Hz}$, 2H, 2C ₆ H ₄ N), 8.92(d, $J=7.2$, 4H, 2C ₆ H ₄ N)
3c	CDCl ₃	0.82(t, $J=6.9\text{Hz}$, 6H, 2CH ₃), 1.22(m, 44H, 22CH ₂), 1.54(m, 4H, 2CH ₂), 4.01(t, $J=7.1\text{Hz}$, 4H, 2CH ₂), 5.02(s, 1H, CH), 7.14-7.23(m, 5H, C ₆ H ₅), 8.14(t, $J=7.6\text{Hz}$, 4H, 2C ₆ H ₄ N), 8.57(t, $J=7.6\text{Hz}$, 2H, 2C ₆ H ₄ N), 9.28(d, $J=7.6$, 4H, 2C ₆ H ₄ N)
	DMSO	0.83(t, $J=6.9\text{Hz}$, 6H, 2CH ₃), 1.21(m, 44H, 22CH ₂), 1.49(m, 4H, 2CH ₂), 3.97(t, $J=6.9\text{Hz}$, 4H, 2CH ₂), 5.01(s, 1H, CH), 7.17-7.28(m, 5H, C ₆ H ₅), 8.08(t, $J=7.5\text{Hz}$, 4H, 2C ₆ H ₄ N), 8.57(t, $J=7.5\text{Hz}$, 2H, 2C ₆ H ₄ N), 8.95(d, $J=7.5\text{Hz}$, 4H, 2C ₆ H ₄ N)
3d	CDCl ₃	0.88(t, $J=7.2\text{Hz}$, 6H, 2CH ₃), 1.24(m, 52H, 26CH ₂), 1.62(m, 4H, 2CH ₂), 4.07(t, $J=6.8\text{Hz}$, 4H, 2CH ₂), 5.09(s, 1H, CH), 7.22-7.29(m, 5H, C ₆ H ₅), 8.19(t, $J=7.1\text{Hz}$, 4H, 2C ₆ H ₄ N), 8.59(t, $J=7.1\text{Hz}$, 2H, 2C ₆ H ₄ N), 9.34(d, $J=7.1\text{Hz}$, 4H, 2C ₆ H ₄ N)
	DMSO	0.83(t, $J=7.2\text{Hz}$, 6H, 2CH ₃), 1.22(m, 52H, 26CH ₂), 1.49(m, 4H, 2CH ₂), 3.98(t, $J=6.1\text{Hz}$, 4H, 2CH ₂), 5.01(s, 1H, CH), 7.19-7.27(m, 5H, C ₆ H ₅), 8.07(t, $J=7.3\text{Hz}$, 4H, 2C ₆ H ₄ N), 8.56(t, $J=7.3\text{Hz}$, 2H, 2C ₆ H ₄ N), 8.56(d, $J=7.3\text{Hz}$, 4H, 2C ₆ H ₄ N)
3e	CDCl ₃	0.88(t, $J=7.1\text{Hz}$, 6H, 2CH ₃), 1.28(m, 36H, 18CH ₂), 1.65(m, 4H, 2CH ₂), 3.61(s, 3H, NCH ₃), 4.14(t, $J=6.7\text{Hz}$, 4H, 2CH ₂), 5.25(s, 1H, CH), 7.25-7.36(m, 5H, C ₆ H ₅), 8.16(t, $J=7.5\text{Hz}$, 4H, 2C ₆ H ₄ N), 8.49(t, $J=7.5\text{Hz}$, 2H, 2C ₆ H ₄ N), 9.38(d, $J=7.5$, 4H, 2C ₆ H ₄ N)
	DMSO	0.84(t, $J=7.1\text{Hz}$, 6H, 2CH ₃), 1.25(m, 36H, 18CH ₂), 1.57(m, 4H, 2CH ₂), 3.12(s, 3H, NCH ₃), 4.10(t, $J=6.2\text{Hz}$, 4H, 2CH ₂), 5.15(s, 1H, CH), 7.18-7.31(m, 5H, C ₆ H ₅), 8.02(t, $J=7.2\text{Hz}$, 4H, 2C ₆ H ₄ N), 8.50(t, $J=7.2\text{Hz}$, 2H, 2C ₆ H ₄ N), 8.86(d, $J=7.2\text{Hz}$, 4H, 2C ₆ H ₄ N)
4a	CDCl ₃	1.09(t, $J=7.3\text{Hz}$, 3H, CH ₃), 2.35(s, 3H, CH ₃), 4.01(kv, $J=7.2\text{Hz}$, 2H, CH ₂), 4.87 (s, 1H, CH), 7.18-7.27(m, 5H, C ₆ H ₅)
	DMSO	1.01(t, $J=7.5\text{Hz}$, 3H, CH ₃), 2.35(s, 3H, CH ₃), 3.90(m, 2H, CH ₂), 4.68 (s, 1H, CH), 7.12-7.25(m, 5H, C ₆ H ₅)
4f	CDCl ₃	2.32(s, 3H, CH ₃), 3.48(s, 3H, CH ₃), 5.13(s, 1H, CH), 6.50 and 6.61(dd, $J=72\text{Hz}$, $J=75\text{Hz}$, 1H, CHF ₂), 6.99(d, $J=7.8\text{Hz}$, 1H, C ₆ H ₄), 7.07(td, $J=7.6\text{Hz}$, $J=1.6$, 1H, C ₆ H ₄), 7.13(td, $J=7.6\text{Hz}$, $J=1.6\text{Hz}$, 1H, C ₆ H ₄), 7.22(dd, $J=7.6\text{Hz}$, $J=1.6\text{Hz}$, 1H, C ₆ H ₄)
	DMSO	2.37(s, 3H, CH ₃), 3.40(s, 3H, CH ₃), 5.09(s, 1H, CH), 6.57(dd, $J=72\text{Hz}$, $J=74\text{Hz}$, 1H, CHF ₂), 6.93(dt, $J=7.5\text{Hz}$, $J=1.6\text{Hz}$, 1H, C ₆ H ₄), 7.02(td, $J=7.5\text{Hz}$, $J=1.6\text{Hz}$, 1H, C ₆ H ₄), 7.05(td, $J=7.5\text{Hz}$, $J=1.6\text{Hz}$, 1H, C ₆ H ₄), 7.17(dd, $J=7.5\text{Hz}$, $J=1.6\text{Hz}$, 1H, C ₆ H ₄)
5a	DMSO	4.67(s, 1H, CH), 7.08-7.21(m, 5H, C ₆ H ₅),
5f	DMSO	4.92(s, 1H, CH), 6.54(t, $J=75.2\text{Hz}$, 1H), 6.93(d, $J=7.5\text{Hz}$, 1H, C ₆ H ₄), 7.03(td, $J=7.5\text{Hz}$, $J=1.9\text{Hz}$, 1H, C ₆ H ₄), 7.08(td, $J=7.5\text{Hz}$, $J=1.9\text{Hz}$, 1H, C ₆ H ₄), 7.14(dd, $J=7.5\text{Hz}$, $J=1.9\text{Hz}$, 1H, C ₆ H ₄)