Supporting Information

Development of furan-2,5-dicarboxylic acid (FDCA)-based organogelators

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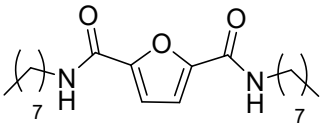
Experimental data.

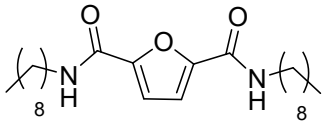
Diamides.

*N^2, N^5-dioctylfuran-2,5-dicarboxamide (**2a**)*



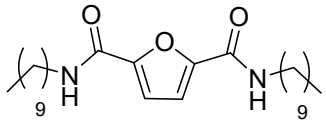
61%; white powder; **Tf:** 75,2°C; **^{1}H NMR** (300 MHz, DMSO-d_6), δ (ppm): 8.42 (t, J = 5.9 Hz, 2H, N**H**), 7.09 (s, 2H, C**H** furan), 3.25 (q, J = 6.7 Hz, 4H, C**H$_2$**-NH), 1.50 (m, J = 7.0 Hz, 4H, C**H$_2$**-CH_2-NH), 1.26 (m, 20H, (C**H$_2$**)$_5$), 0.84 (t, 6H, C**H$_3$**); **^{13}C NMR** (101 MHz, DMSO-d_6, 340K), δ (ppm): 157.07 (**C**=O), 148.16, 114.17, 38.47, 38.35, 31.22, 29.26, 28.70, 28.61, 26.43, 22.06, 13.89.

*N^2, N^5-dinonylfuran-2,5-dicarboxamide (**2b**)*



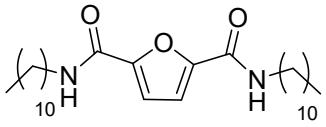
86%; white powder; **Tf:** 77,3-83,7°C; **^{1}H NMR** (300 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 8.21 (t, *J* = 5.9 Hz, 2H, N**H**), 7.01 (d, *J* = 4.1 Hz, 2H, C**H** furan), 3.29 (q, *J* = 6.6 Hz, 4H, C**H$_2$**-NH), 1.55 (p, *J* = 6.7 Hz, 4H, C**H$_2$**-CH_2-NH), 1.26 (m, 24H, (C**H$_2$**)$_6$), 0.85 (t, 6H, C**H$_3$**); **^{13}C NMR** (101 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 157.04 (**C**=O), 148.08, 113.71, 38.45, 31.22, 29.26, 28.89, 28.74, 28.61, 26.42, 22.02, 13.58.

*N^2, N^5-didecylfuran-2,5-dicarboxamide (**2c**)*



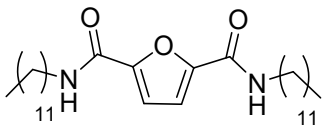
43%; white powder; **Tf:** 88,8°C; **^{1}H NMR** (300 MHz, DMSO-d_6), δ (ppm): 8.41 (t, *J* = 5.9 Hz, 2H, N**H**), 7.09 (s, 2H, C**H** furan), 3.30-3.22 (q, 4H, C**H$_2$**-NH), 1.50 (m, *J* = 7.0 Hz, 4H, C**H$_2$**-CH_2-NH), 1.26 (m, 28H, (C**H$_2$**)$_7$), 0.84 (t, 6H, C**H$_3$**); **^{13}C NMR** (151 MHz, DMSO-d_6, 340K), δ (ppm): 156.89 (**C**=O), 156.82 (**C**=O), 148.09, 113.72, 38.31, 38.19, 30.92, 28.90, 28.88, 28.58, 28.57, 28.38, 28.28, 26.11, 21.67, 13.47.

*N^2, N^5-diundecylfuran-2,5-dicarboxamide (**2d**)*



73%; white powder; **Tf:** 91,7°C; **^{1}H NMR** (300 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 8.13 (q, *J* = 5.6 Hz, 2H, N**H**), 7.00 (s, 2H, C**H** furan), 3.31 (q, *J* = 6.7 Hz, 4H, C**H$_2$**-NH), 1.55 (q, *J* = 7.1 Hz, 4H, C**H$_2$**-CH_2-NH), 1.27 (m, 32H, (C**H$_2$**)$_8$), 0.86 (t, 6H, C**H$_3$**); **^{13}C NMR** (101 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 157.02 (**C**=O), 148.08, 113.74, 38.43, 31.22, 29.24, 28.93, 28.71, 28.64, 26.40, 22.01, 13.62.

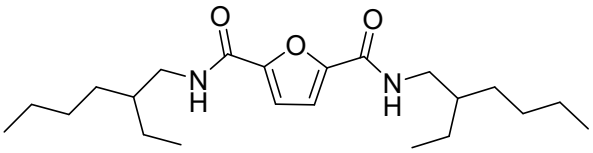
*N^2, N^5-didodecylfuran-2,5-dicarboxamide (**2e**)*



25%; white powder; **Tf:** 96,3°C; **^{1}H NMR** (400 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 8.15 (t, *J* = 5.9 Hz, 2H, N**H**), 7.01 (s, 2H, C**H** furan), 3.30 (q, *J* = 6.8 Hz, 4H, C**H$_2$**-NH), 1.56 (m, *J* = 7.2 Hz, 4H, C**H$_2$**-CH_2-NH), 1.46-1.11 (m, 36H, (C**H$_2$**)$_9$), 0.86 (t, *J* = 6.7 Hz, 6H, C**H$_3$**); **^{13}C NMR** (151 MHz, DMSO-d_6, 340K),

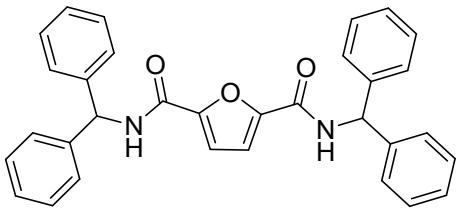
δ (ppm): 156.85 (**C**=O), 148.07, 113.68, 38.28, 30.90, 28.88, 28.63, 28.60, 28.58, 28.56, 28.35, 28.28, 26.09, 21.66, 13.46.

*N^2, N^5-bis(2-ethylhexyl)furan-2,5-dicarboxamide (**2f**)*



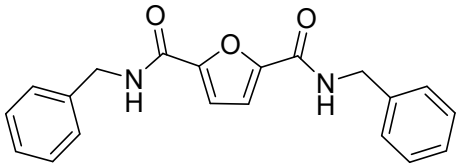
86%; white powder; **^{1}H NMR** (300 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 8.35 (t, *J* = 6.0 Hz, 2H, N**H**), 7.11 (s, 2H, C**H** furan), 3.19 (t, *J* = 6.4 Hz, 4H, C**H$_2$**-NH), 1.52 (p, *J* = 6.0 Hz, 2H, C**H**), 1.27 (m, 16H, C**H$_2$**), 0.86 (m, 12H, C**H$_3$**); **^{13}C NMR** (101 MHz, DMSO-d_6), δ (ppm): 157.22, 148.20, 114.18, 41.81, 30.31, 28.28, 23.61, 22.43, 13.85, 10.60.

*N^2, N^5-dibenzhydrylfuran-2,5-dicarboxamide (**2g**)*



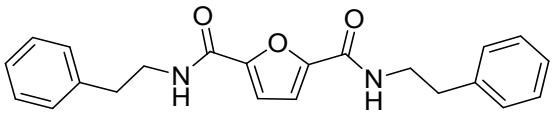
30%; white powder; **^{1}H NMR** (300 MHz, DMSO-d_6), δ (ppm): 9.26 (d, *J* = 8.7 Hz, 2H, N**H**), 7.33 (m, 22H, C**H** furan + Ar-**H**), 6.38 (d, *J* = 8.6 Hz, 2H, C**H**); **^{13}C NMR** (101 MHz, DMSO-d_6), δ (ppm): 156.78 (**C**=O), 148.12 (**C**-C=O), 141.52 (**C(i)** Ph), 128.40 (**C(m)** Ph), 127.66 (**C(o)** Ph), 127.21 (**C(p)** Ph), 115.11 (**C**H furan), 55.71 (NH-**C**H).

*N^2, N^5-dibenzylfuran-2,5-dicarboxamide (**2h**)*



66%; white powder; **^{1}H NMR** (300 MHz, DMSO-d_6), δ (ppm): 9.00 (t, *J* = 6.2 Hz, 2H, N**H**), 7.39-7.23 (m, 10H, Ar-**H**), 7.20 (s, 2H, C**H** furan), 4.51 (d, *J* = 6.1 Hz, 2H, C**H$_2$**); ^{13}C NMR (101 MHz, DMSO-d_6), δ (ppm): 157.71 (C=O), 148.54 (O-**C**-CO furan), 139.46, 128.89, 127.71, 127.47, 115.24 (**C**H furan), 42.34 (**C**H_2-NH).

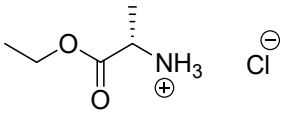
*N^2, N^5-diphenethylfuran-2,5-dicarboxamide (**2i**)*



77%; yellow oil; **^{1}H NMR** (300 MHz, DMSO-d_6), δ (ppm): 8.59 (t, *J* = 5.9 Hz, 2H, N**H**), 7.37-7.16 (m, 10H, Ar-**H**), 7.12 (s, 2H, C**H** furan), 3.50 (dt, *J* = 8.1, 6.2 Hz, 4H, C**H$_2$**-NH), 2.85 (t, 4H, C**H$_2$**-CH_2-NH); **^{13}C NMR** (101 MHz, DMSO-d_6), δ (ppm): 157.13 (**C**=O), 148.12, 139.15, 128.61, 128.37, 126.17, 114.29, 35.22.

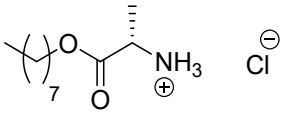
Ester ammonium salts.

*ethyl L-alaninate ammonium chloride salt (**3a**)*



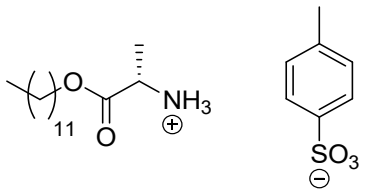
99%; white powder; **^{1}H NMR** (400 MHz, DMSO-d_6), δ (ppm): 8.74 (s, 3H, N**H$_3$**), 4.17 (m, 2H, C**H$_2$**-O), 3.98 (q, *J* = 7.1 Hz, 1H, C**H**), 1.42 (d, *J* = 7.1 Hz, 3H, C**H$_3$**-CH-NH_3), 1.21 (t, *J* = 7.1 Hz, 3H, C**H$_3$**-CH_2); **^{13}C NMR** (75 MHz, DMSO-d_6), δ (ppm): 169.88 (**C**=O), 61.60 (**C**H_2-O), 47.80 (**C**H), 15.64, 13.92.

*octyl L-alaninate ammonium chloride salt (**3c**)*



37%; white powder; **^{1}H NMR** (300 MHz, DMSO-d_6), δ (ppm): 8.64 (s, 3H, N**H$_3$**), 4.21-3.97 (m, 3H, C**H$_2$**-O + C**H**-NH_3), 1.60 (p, *J* = 6.6 Hz, 2H, C**H$_2$**-CH_2-O), 1.42 (d, *J* = 7.1 Hz, 3H, C**H$_3$**-CH-NH_3), 1.25 (m, 10H, CH_3-(C**H$_2$**)$_5$), 0.84 (t, 3H, C**H$_3$**-CH_2); **^{13}C NMR** (101 MHz, DMSO-d_6), δ (ppm): 170.00 (**C**=O), 65.51 (**C**H_2-O), 47.83 (**C**H), 31.20, 28.57, 27.95, 25.17, 22.08, 15.71, 13.95.

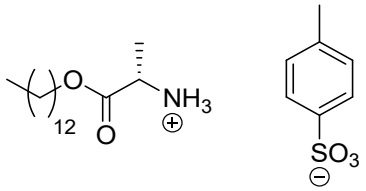
*dodecyl L-alaninate ammonium tosylate salt (**3d**)*



90%; white powder; **^{1}H NMR** (300 MHz, DMSO-d_6), δ (ppm): 8.15 (s, 3H, N**H$_3$**), 7.49 (d, *J* = 8.1 Hz, 2H, Ar-**H**), 7.12 (d, *J* = 7.9 Hz, 2H, Ar-**H**), 4.21-4.05 (m, 3H, C**H$_2$**-O + C**H**-NH_3), 2.29 (s, 3H, Ar-C**H$_3$**), 1.59 (m, *J* = 6.7 Hz, 2H, C**H$_2$**-CH_2-O), 1.38 (d, *J* = 7.2 Hz, 3H, C**H$_3$**-CH-NH_3), 1.24 (m, 18H, CH_3-(C**H$_2$**)$_9$), 0.85

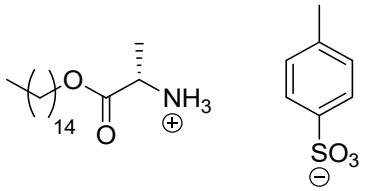
(t, 3H, C**H$_3$**-CH$_2$); **^{13}C NMR** (75 MHz, DMSO-d$_6$), δ (ppm): 169.92 (**C**=O), 145.23, 138.00, 128.18, 125.56, 65.69 (**C**H$_2$-O), 47.86 (**C**H), 31.37, 29.11, 29.08, 29.04, 28.99, 28.78, 28.68, 27.99, 25.23, 22.16, 20.82, 15.62, 15.59, 13.97.

*tridecyl L-alaninate ammonium tosylate salt (**3e**)*



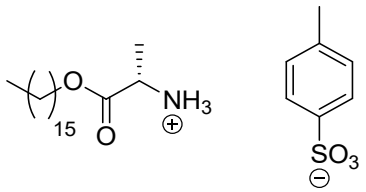
97%; white powder; **^{1}H NMR** (300 MHz, DMSO-d$_6$), δ (ppm): 8.32 (s, 3H, N**H$_3$**), 7.51 (d, *J* = 8.1 Hz, 2H, Ar-**H**), 7.13 (d, *J* = 8.0 Hz, 2H, Ar-**H**), 4.21-4.05 (m, 3H, C**H$_2$**-O + C**H**-NH$_3$), 2.30 (s, 3H, Ar-C**H$_3$**), 1.60 (t, *J* = 7.0 Hz, 2H, C**H$_2$**-CH$_2$-O), 1.40 (d, *J* = 7.2 Hz, 3H, C**H$_3$**-CH-NH$_3$), 1.25 (m, 20H, CH$_3$-(C**H$_2$**)$_{10}$), 0.86 (t, 3H, C**H$_3$**-CH$_2$); **^{13}C NMR** (75 MHz, DMSO-d$_6$), δ (ppm): 169.94 (**C**=O), 145.33, 137.79, 128.06, 125.48, 65.57 (**C**H$_2$-O), 47.93 (**C**H), 31.29, 29.06, 29.03, 29.01, 28.97, 28.92, 28.71, 28.61, 27.92, 25.15, 22.08, 20.74, 15.67, 13.90.

*pentadecyl L-alaninate ammonium tosylate salt (**3f**)*



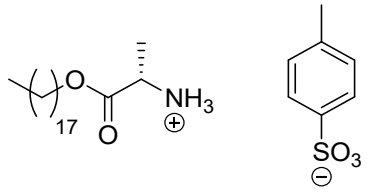
98%; white powder; **^{1}H NMR** (400 MHz, DMSO-d$_6$), δ (ppm): 8.33 (s, 3H, N**H$_3$**), 7.52 (d, *J* = 7.9 Hz, 2H, Ar-**H**), 7.13 (d, *J* = 7.8 Hz, 2H, Ar-**H**), 4.21-4.07 (m, 3H, C**H$_2$**-O + C**H**-NH$_3$), 2.30 (s, 3H, Ar-C**H$_3$**), 1.59 (t, *J* = 6.7 Hz, 2H, C**H$_2$**-CH$_2$-O), 1.40 (d, *J* = 7.2 Hz, 3H, C**H$_3$**-CH-NH$_3$), 1.25 (m, 24H, CH$_3$-(C**H$_2$**)$_{12}$), 0.86 (t, 3H, C**H$_3$**-CH$_2$); **^{13}C NMR** (101 MHz, DMSO-d$_6$), δ (ppm): 169.94 (**C**=O), 145.26, 137.83, 128.07, 125.49, 65.56, 47.94, 31.32, 29.08, 29.06, 29.04, 29.01, 28.95, 28.74, 28.65, 27.94, 25.18, 22.10, 20.75, 15.67, 13.89.

*hexadecyl L-alaninate ammonium tosylate salt (**3g**)*



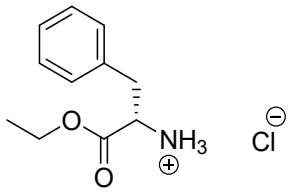
99%; white powder; **^{1}H NMR** (300 MHz, DMSO-d_6), δ (ppm): 8.31 (s, 3H, N**H$_3$**), 7.50 (d, 2H, Ar-**H**), 7.12 (d, *J* = 7.8 Hz, 2H, Ar-**H**), 4.24-4.02 (m, 3H, C**H$_2$**-O + C**H**-NH_3), 2.29 (s, 3H, Ar-C**H$_3$**), 1.59 (t, *J* = 7.0 Hz, 2H, C**H$_2$**-CH_2-O), 1.39 (d, *J* = 7.2 Hz, 3H, C**H$_3$**-CH-NH_3), 1.24 (m, 26H, CH_3-(C**H$_2$**)$_{13}$), 0.86 (t, 3H, C**H$_3$**-CH_2); **^{13}C NMR** (75 MHz, DMSO-d_6), δ (ppm): 169.93 (**C**=O), 145.35, 137.74, 128.03, 125.48, 65.55, 47.92, 31.31, 29.08, 29.04, 29.01, 28.95, 28.73, 28.64, 27.94, 25.17, 22.09, 20.73, 15.65, 13.86.

*octadecyl L-alaninate ammonium tosylate salt (**3h**)*



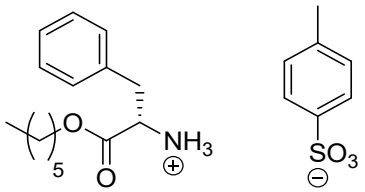
99%; white powder; **^{1}H NMR** (400 MHz, DMSO-d_6), δ (ppm): 8.32 (s, 3H, N**H$_3$**), 7.49 (d, *J* = 7.8 Hz, 2H, Ar-**H**), 7.11 (d, *J* = 7.8 Hz, 2H, Ar-**H**), 4.20-4.05 (m, 3H, C**H$_2$**-O + C**H**-NH_3), 2.29 (s, 3H, Ar-C**H$_3$**), 1.59 (m, *J* = 6.7 Hz, 2H, C**H$_2$**-CH_2-O), 1.38 (d, *J* = 7.2 Hz, 3H, C**H$_3$**-CH-NH_3), 1.23 (m, 30H, CH_3-(C**H$_2$**)$_{15}$), 0.85 (t, 3H, C**H$_3$**-CH_2). **^{13}C NMR** (75 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 169.72 (**C**=O), 144.18, 138.23, 127.86, 125.29, 65.57, 48.06, 31.27, 29.03, 28.99, 28.95, 28.87, 28.69, 28.57, 27.82, 25.11, 22.05, 20.48, 15.43, 13.48.

*ethyl L-phenylalaninate ammonium chloride salt (**4a**)*



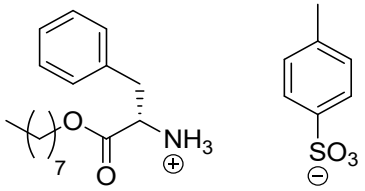
99%; white powder; **^{1}H NMR** (300 MHz, DMSO-d_6), δ (ppm): 8.84 (s, 3H, N**H$_3$**), 7.40-7.18 (m, 5H, Ar-**H**), 4.18 (dd, *J* = 8.1, 5.4 Hz, 1H, NH_3-C**H**), 4.08 (qd, *J* = 7.1, 2.1 Hz, 2H, C**H$_2$**-O), 3.33-3.01 (m, 2H, NH_3-CH-C**H$_2$**), 1.08 (t, *J* = 7.1 Hz, 3H, C**H$_3$**-CH_2); **^{13}C NMR** (75 MHz, DMSO-d_6), δ (ppm): 168.84 (**C**=O), 134.61 (**C(i)** Ph), 129.42 (**C**H**(m)** Ph), 128.47 (**C**H**(o)** Ph), 127.15 (**C**H**(p)** Ph), 61.45 (**C**H_2-O), 53.23 (**C**H), 35.91 (**C**H_2-Ph), 13.72 (**C**H_3).

*hexyl L-phenylalaninate ammonium tosylate salt (**4b**)*



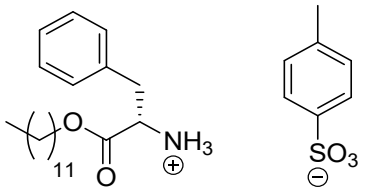
90%; white powder; **^{1}H NMR** (300 MHz, DMSO-d_6), δ (ppm): 8.45 (s, 3H, N**H$_3$**), 7.51 (d, *J* = 8.1 Hz, 2H, Ar-**H**), 7.39-7.18 (m, 5H, Ar-**H**), 7.13 (d, *J* = 7.9 Hz, 2H, Ar-**H**), 4.28 (t, *J* = 6.9 Hz, 1H, NH_3-C**H**), 4.02 (t, *J* = 6.5 Hz, 2H, C**H$_2$**-O), 3.24-2.94 (m, 2H, NH_3-CH-C**H$_2$**), 2.29 (s, 3H, Ar-C**H$_3$**), 1.42 (p, *J* = 6.7 Hz, 2H, C**H$_2$**-CH_2-O), 1.31-1.06 (m, 6H, CH_3-(C**H$_2$**)$_3$), 0.85 (t, *J* = 6.9 Hz, 3H, C**H$_3$**-CH_2); **^{13}C NMR** (75 MHz, DMSO-d_6), δ (ppm): 169.05 (**C**=O), 145.37, 137.81, 134.61, 129.29, 128.53, 128.09, 127.23, 125.49, 65.56 (**C**H_2-O), 53.24 (**C**H), 36.15 (**C**H_2-Ph), 30.77, 27.72, 24.75, 21.90, 20.76, 13.84.

*octyl L-phenylalaninate ammonium tosylate salt (**4c**)*



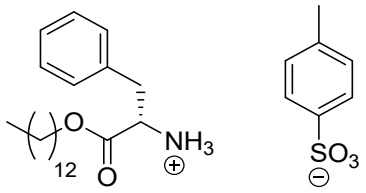
92%; white powder; **^{1}H NMR** (300 MHz, DMSO-d_6), δ (ppm): 8.44 (s, 3H, N**H$_3$**), 7.51 (d, *J* = 8.1 Hz, 2H, Ar-**H**), 7.39-7.18 (m, 5H, Ar-**H**), 7.12 (d, *J* = 7.8 Hz, 2H, Ar-**H**), 4.28 (dd, *J* = 8.0, 5.8 Hz, 1H, NH_3-C**H**), 4.02 (t, *J* = 6.5 Hz, 2H, C**H$_2$**-O), 3.26-2.91 (m, 2H, NH_3-CH-C**H$_2$**), 2.29 (s, 3H, Ar-C**H$_3$**), 1.42 (p, *J* = 6.8 Hz, 2H, C**H$_2$**-CH_2-O), 1.18 (m, 10H, CH_3-(C**H$_2$**)$_5$), 0.86 (t, *J* = 6.6 Hz, 3H, C**H$_3$**-CH_2); **^{13}C NMR** (75 MHz, DMSO-d_6), δ (ppm): 169.05 (**C**=O), 145.43, 137.75, 134.60, 129.29, 128.52, 128.06, 127.21, 125.48, 65.56 (**C**H_2-O), 53.22 (**C**H), 36.15 (**C**H_2-Ph), 31.17, 28.52, 28.49, 27.75, 25.09, 22.05, 20.75, 13.91.

*dodecyl L-phenylalaninate ammonium tosylate salt (**4d**)*



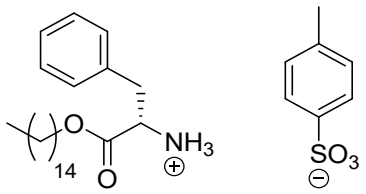
96%; white powder; **^{1}H NMR** (300 MHz, DMSO-d_6), δ (ppm): 8.49 (s, 3H, N**H$_3$**), 7.50 (d, *J* = 8.2 Hz, 2H, Ar-**H**), 7.37-7.19 (m, 5H, Ar-**H**), 7.12 (d, *J* = 7.9 Hz, 2H, Ar-**H**), 4.29 (m, *J* = 7.9, 5.9 Hz, 1H, NH_3-C**H**), 4.03 (t, *J* = 6.4 Hz, 2H, C**H$_2$**-O), 3.19-2.98 (m, 2H, NH_3-CH-C**H$_2$**), 2.29 (s, 3H, Ar-C**H$_3$**), 1.42 (m, *J* = 6.8 Hz, 2H, C**H$_2$**-CH_2-O), 1.22 (m, 18H, CH_3-(C**H$_2$**)$_9$), 0.85 (t, 3H, C**H$_3$**-CH_2); **^{13}C NMR** (101 MHz, DMSO-d_6), δ (ppm): 169.01 (**C**=O), 145.23, 137.94, 134.65, 129.32, 128.53, 128.13, 127.21, 125.53, 65.58, 53.19, 36.11, 31.34, 29.08, 29.05, 29.00, 28.90, 28.75, 28.62, 27.79, 25.14, 22.13, 20.78, 13.95.

*tridecyl L-phenylalaninate ammonium tosylate salt (**4e**)*



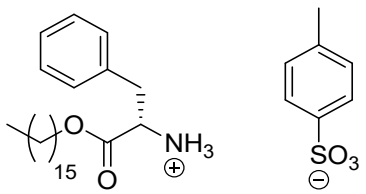
99%; white powder; **^{1}H NMR** (300 MHz, DMSO-d_6), δ (ppm): 8.46 (s, 3H, N**H$_3$**), 7.52 (d, 2H, Ar-**H**), 7.42-7.18 (m, 5H, Ar-**H**), 7.13 (d, *J* = 7.9 Hz, 2H, Ar-**H**), 4.28 (m, *J* = 7.0 Hz, 1H, NH_3-C**H**), 4.02 (t, *J* = 6.4 Hz, 2H, C**H$_2$**-O), 3.26-2.94 (m, 2H, NH_3-CH-C**H$_2$**), 2.30 (s, 3H, Ar-C**H$_3$**), 1.43 (m, *J* = 6.4 Hz, 2H, C**H$_2$**-CH_2-O), 1.25 (m, 20H, CH_3-(C**H$_2$**)$_{10}$), 0.86 (t, 3H, C**H$_3$**-CH_2); **^{13}C NMR** (75 MHz, DMSO-d_6), δ (ppm): 169.03 (**C**=O), 145.36, 137.78, 134.62, 129.29, 128.49, 128.06, 127.17, 125.49, 65.54, 53.24, 36.15, 31.29, 29.05, 29.03, 29.01, 28.96, 28.86, 28.71, 28.58, 27.76, 25.10, 22.08, 20.75, 13.90.

*pentadecyl L-phenylalaninate ammonium tosylate salt (**4f**)*



99%; white powder; **^{1}H NMR** (400 MHz, DMSO-d_6), δ (ppm): 8.46 (s, 3H, N**H$_3$**), 7.53 (d, *J* = 7.9 Hz, 2H Ar-**H**), 7.38 – 7.18 (m, 5H, Ar-**H**), 7.14 (d, *J* = 7.8 Hz, 2H Ar-**H**), 4.28 (m, 1H, NH_3-C**H**), 4.02 (t, *J* = 6.4 Hz, 2H, C**H$_2$**-O), 3.26 – 2.94 (m, 2H, NH_3-CH-C**H$_2$**), 2.30 (s, 3H, Ar-C**H$_3$**), 1.42 (m, *J* = 6.6 Hz, 2H, C**H$_2$**-CH_2-O), 1.25 (m, 24H, CH_3-(C**H$_2$**)$_{12}$), 0.86 (t, 3H, C**H$_3$**-CH_2); **^{13}C NMR** (101 MHz, DMSO-d_6), δ (ppm): 169.04 (**C**=O), 145.22, 137.90, 134.65, 129.30, 128.49, 128.11, 127.17, 125.51, 65.53, 53.26, 36.16, 31.31, 29.07, 29.03, 29.00, 28.89, 28.73, 28.62, 27.78, 25.13, 22.10, 20.76, 13.91.

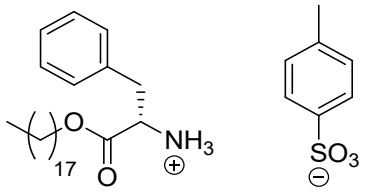
*hexadecyl L-phenylalaninate ammonium tosylate salt (**4g**)*



99%; white powder; **^{1}H NMR** (300 MHz, DMSO-d_6), δ (ppm): 8.45 (s, 3H, N**H$_3$**), 7.52 (d, 2H Ar-**H**), 7.38-7.18 (m, 5H, Ar-**H**), 7.12 (d, *J* = 7.8 Hz, 2H Ar-**H**), 4.27 (m, 1H, NH_3-C**H**), 4.01 (m, 2H, C**H$_2$**-O), 3.26-2.92 (m, 2H, NH_3-CH-C**H$_2$**), 2.29 (s, 3H, Ar-C**H$_3$**), 1.40 (d, *J* = 6.9 Hz, 2H, C**H$_2$**-CH_2-O), 1.24 (m, 26H, CH_3-(C**H$_2$**)$_{13}$), 0.84 (t, 3H, C**H$_3$**-CH_2); **^{13}C NMR** (75 MHz, DMSO-d_6), δ (ppm): 169.03 (**C**=O), 145.30,

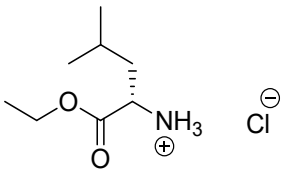
137.81, 134.64, 129.29, 128.47, 128.07, 127.15, 125.50, 65.51, 53.25, 36.15, 31.31, 29.07, 29.03, 29.00, 28.89, 28.73, 28.62, 27.77, 25.12, 22.09, 20.74, 13.88.

*octadecyl L-phenylalaninate ammonium tosylate salt (**4h**)*



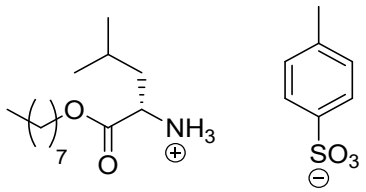
99%; white powder; **^{1}H NMR** (400 MHz, DMSO-d_6), δ (ppm): 8.49 (s, 3H, N**H$_3$**), 7.50 (d, *J* = 8.2 Hz, 2H, Ar-**H**), 7.37-7.19 (m, 5H, Ar-**H**), 7.12 (d, *J* = 7.8 Hz, 2H, Ar-**H**), 4.29 (t, *J* = 7.0 Hz, 1H, NH_3-C**H**), 4.03 (t, *J* = 6.4 Hz, 2H, C**H$_2$**-O), 3.19-2.98 (m, 2H, NH_3-CH-C**H$_2$**), 2.29 (s, 3H, Ar-C**H$_3$**), 1.42 (m, *J* = 6.8 Hz, 2H, C**H$_2$**-CH_2-O), 1.22 (m, 30H, CH_3-(C**H$_2$**)$_{15}$), 0.85 (t, 3H, C**H$_3$**-CH_2). **^{13}C NMR** (75 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 168.77, (**C**=O), 144.31, 138.16, 134.25, 129.01, 128.18, 127.85, 126.91, 125.31, 65.53, 53.39, 36.01, 31.26, 29.01, 28.97, 28.93, 28.82, 28.67, 28.54, 27.67, 25.41, 25.06, 22.03, 13.50.

*ethyl L-leucinate ammonium chloride salt (**5a**)*



99%; white powder; **^{1}H NMR** (300 MHz, DMSO-d_6), δ (ppm): 8.75 (s, 3H, N**H$_3$**), 4.18 (m, *J* = 7.1, 2.7 Hz, 2H, C**H$_2$**-O), 3.84 (q, *J* = 6.9 Hz, 1H, NH_3-C**H**), 1.87-1.56 (m, 5H, $(CH_3)_2$-C**H**-C**H$_2$** + C**H$_2$**-CH_2-O), 1.22 (t, *J* = 7.1 Hz, 3H, C**H$_3$**-CH_2), 0.88 (d, *J* = 6.2 Hz, 6H, (C**H$_3$**)$_2$-CH); **^{13}C NMR** (75 MHz, DMSO-d_6), δ (ppm): 169.73 (**C**=O), 61.58 (**C**H_2-O), 50.48 (**C**H-NH), 39.11 (**C**H_2-$(CH_3)_2$), 23.73, 22.19, 21.92, 13.90.

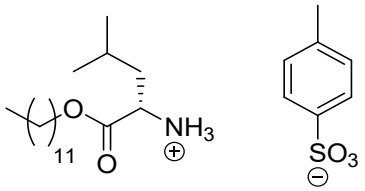
*octyl L-leucinate ammonium tosylate salt (**5c**)*



40%; white powder; **^{1}H NMR** (300 MHz, DMSO-d_6), δ (ppm): 8.33 (s, 3H, N**H$_3$**), 7.50 (d, *J* = 8.0 Hz, 2H, Ar-**H**), 7.12 (d, *J* = 7.8 Hz, 2H Ar-**H**), 4.15 (m, 2H, C**H$_2$**-O), 3.96 (q, *J* = 6.2 Hz, 1H, NH_3-C**H**), 2.29 (s, 3H, Ar-C**H$_3$**), 1.83-1.50 (m, 5H, $(CH_3)_2$-C**H**-C**H$_2$** + C**H$_2$**-CH_2-O), 1.26 (m, 10H, (C**H$_2$**)$_5$), 0.88 (m, 9H, C**H$_3$**); **^{13}C NMR** (75 MHz, DMSO-d_6), δ (ppm): 169.89 (**C**=O), 145.33 (**C(i)** Tosyl), 137.81 (**C(p)** Tosyl),

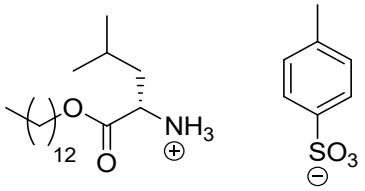
128.07 (**C(m)** Tosyl), 125.48 (**C(o)** Tosyl), 65.60 (**C**H_2-O), 50.63 (**C**H-NH), 39.21 (**C**H_2-(CH_3)$_2$), 31.15, 28.54, 28.48, 27.86, 25.18, 23.79, 22.10, 22.05, 21.87, 20.75, 13.90.

*dodecyl L-leucinate ammonium tosylate salt (**5d**)*



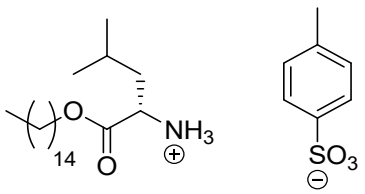
99%; white powder; **^{1}H NMR** (400 MHz, DMSO-d_6), δ (ppm): 8.34 (s, 3H, N**H$_3$**), 7.51 (d, *J* = 7.8 Hz, 2H, Ar-**H**), 7.13 (d, *J* = 7.8 Hz, 2H Ar-**H**), 4.14 (m, *J* = 10.8, 6.4 Hz, 2H, C**H$_2$**-O), 3.97 (q, *J* = 6.0 Hz, 1H, NH_3-C**H**), 2.30 (s, 3H, Ar-C**H$_3$**), 1.82-1.51 (m, 5H, (CH_3)$_2$-C**H**-C**H$_2$** + C**H$_2$**-CH_2-O), 1.25 (m, 18H, (C**H$_2$**)$_9$), 0.88 (m, 9H, C**H$_3$**); **^{13}C NMR** (75 MHz, DMSO-d_6), δ (ppm): 169.88 (**C**=O), 145.34 (**C(i)** Tosyl), 137.78 (**C(p)** Tosyl), 128.05 (**C(m)** Tosyl), 125.48 (**C(o)** Tosyl), 65.59 (**C**H_2-O), 50.62 (**C**H-NH), 39.21 (**C**H_2-(CH_3)$_2$), 31.29, 29.03, 29.00, 28.92, 28.90, 28.69, 28.54, 27.87, 25.19, 23.78, 22.10, 22.08, 21.86, 20.75, 13.90.

*tridecyl L-leucinate ammonium tosylate salt (**5e**)*



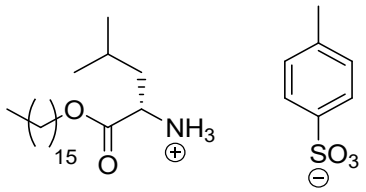
99%; white powder; **^{1}H NMR** (400 MHz, DMSO-d_6), δ (ppm): 8.33 (s, 3H, N**H$_3$**), 7.50 (d, *J* = 7.9 Hz, 2H, Ar-**H**), 7.12 (d, *J* = 7.8 Hz, 2H Ar-**H**), 4.13 (m, *J* = 10.8, 6.5 Hz, 2H, C**H$_2$**-O), 3.96 (s, 1H, NH_3-C**H**), 2.29 (s, 3H, Ar-C**H$_3$**), 1.82-1.47 (m, 5H, (CH_3)$_2$-C**H**-C**H$_2$** + C**H$_2$**-CH_2-O), 1.24 (m, 20H, (C**H$_2$**)$_{10}$), 0.88 (m, 9H, C**H$_3$**); **^{13}C NMR** (75 MHz, DMSO-d_6), δ (ppm): 169.87 (**C**=O), 145.30 (**C(i)** Tosyl), 137.80 (**C(p)** Tosyl), 128.05 (**C(m)** Tosyl), 125.49 (**C(o)** Tosyl), 65.57 (**C**H_2-O), 50.63 (**C**H-NH), 39.20 (**C**H_2-(CH_3)$_2$), 31.29, 29.05, 29.03, 29.01, 28.93, 28.91, 28.71, 28.55, 27.87, 25.20, 23.78, 22.09, 21.84, 20.74, 13.89.

*pentadecyl L-leucinate ammonium tosylate salt (**5f**)*



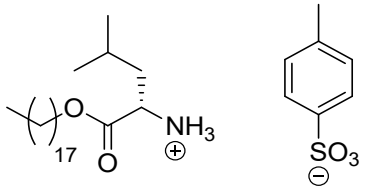
99%; white powder; **^{1}H NMR** (400 MHz, DMSO-d_6), δ (ppm): 8.33 (s, 3H, N**H$_3$**), 7.50 (d, *J* = 7.8 Hz, 2H, Ar-**H**), 7.12 (d, *J* = 7.8 Hz, 2H Ar-**H**), 4.12 (m, 2H, C**H$_2$**-O), 3.96 (q, *J* = 6.0 Hz, 1H, NH_3-C**H**), 2.29 (s, 3H, Ar-C**H$_3$**), 1.82-1.50 (m, 5H, $(CH_3)_2$-C**H**-C**H$_2$** + C**H$_2$**-CH_2-O), 1.24 (m, 24H, $(CH_2)_{12}$), 0.87 (m, 9H, C**H$_3$**); **^{13}C NMR** (75 MHz, DMSO-d_6), δ (ppm): 169.87 (**C**=O), 145.33 (**C(i)** Tosyl), 137.78 (**C(p)** Tosyl), 128.04 (**C(m)** Tosyl), 125.49 (**C(o)** Tosyl), 65.57 (**C**H_2-O), 50.62 (**C**H-NH), 39.20 (**C**H_2-$(CH_3)_2$), 31.30, 29.06, 29.04, 29.01, 28.93, 28.91, 28.71, 28.55, 27.87, 25.21, 23.78, 22.09, 21.84, 20.74, 13.88.

*hexadecyl L-leucinate ammonium tosylate salt (**5g**)*



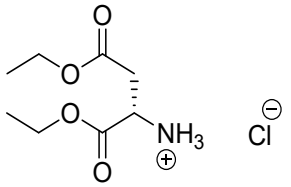
93%; white powder; **^{1}H NMR** (400 MHz, DMSO-d_6), δ (ppm): 8.33 (s, 3H, N**H$_3$**), 7.50 (d, *J* = 7.9 Hz, 2H, Ar-**H**), 7.12 (d, *J* = 7.8 Hz, 2H Ar-**H**), 4.13 (m, *J* = 10.8, 6.4 Hz, 2H, C**H$_2$**-O), 3.96 (t, *J* = 7.0 Hz, 1H, NH_3-C**H**), 2.29 (s, 3H, Ar-C**H$_3$**), 1.82-1.50 (m, 5H, $(CH_3)_2$-C**H**-C**H$_2$** + C**H$_2$**-CH_2-O), 1.24 (m, 26H, $(CH_2)_{13}$), 0.88 (m, 9H, C**H$_3$**); **^{13}C NMR** (75 MHz, DMSO-d_6), δ (ppm): 169.87 (**C**=O), 145.37 (**C(i)** Tosyl), 137.74 (**C(p)** Tosyl), 128.03 (**C(m)** Tosyl), 125.48 (**C(o)** Tosyl), 65.57 (**C**H_2-O), 50.61 (**C**H-NH), 39.20 (**C**H_2-$(CH_3)_2$), 31.30, 29.04, 29.01, 28.94, 28.92, 28.71, 28.55, 27.87, 25.21, 23.78, 22.09, 21.84, 20.73, 13.88.

*octadecyl L-leucinate ammonium tosylate salt (**5h**)*



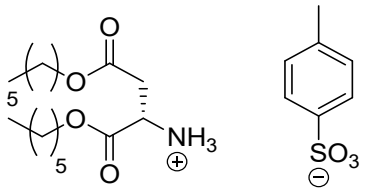
99%; white powder; **^{1}H NMR** (400 MHz, DMSO-d_6), δ (ppm): 8.33 (s, 3H, N**H$_3$**), 7.51 (d, *J* = 7.8 Hz, 2H, Ar-**H**), 7.12 (d, *J* = 7.8 Hz, 2H Ar-**H**), 4.14 (m, *J* = 11.1, 6.4 Hz, 2H, C**H$_2$**-O), 3.97 (t, *J* = 6.9 Hz, 1H, NH_3-C**H**), 2.30 (s, 3H, Ar-C**H$_3$**), 1.83-1.48 (m, 5H, $(CH_3)_2$-C**H**-C**H$_2$** + C**H$_2$**-CH_2-O), 1.24 (m, 30H, $(CH_2)_{15}$), 0.87 (m, 9H, C**H$_3$**); **^{13}C NMR** (75 MHz, DMSO-d_6), δ (ppm): 169.87 (**C**=O), 145.41 (**C(i)** Tosyl), 137.71 (**C(p)** Tosyl), 128.02 (**C(m)** Tosyl), 125.48 (**C(o)** Tosyl), 65.56 (**C**H_2-O), 50.60 (**C**H-NH), 39.20 (**C**H_2-$(CH_3)_2$), 31.30, 29.05, 29.02, 28.95, 28.93, 28.72, 28.57, 27.87, 25.21, 23.77, 22.08, 21.84, 20.73, 13.86.

*diethyl L-aspartate ammonium chloride salt (**6a**)*



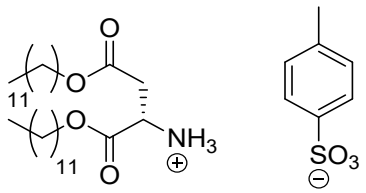
99%; white powder; **^{1}H NMR** (300 MHz, DMSO-d_6), δ (ppm): 8.85 (s, 3H, N**H$_3$**), 4.37-3.98 (m, 5H, C**H$_2$**-O + C**H**), 3.01 (m, 2H, C**H$_2$**), 1.20 (td, *J* = 7.1, 1.8 Hz, 6H, C**H$_3$**); **^{13}C NMR** (75 MHz, DMSO-d_6), δ (ppm): 169.02 (**C**=O), 168.14 (**C**=O), 61.91 (**C**H$_2$-O), 60.84 (**C**H$_2$-O), 48.44 (**C**H), 34.18 (**C**H$_2$), 13.91 (**C**H$_3$), 13.79 (**C**H$_3$).

*dihexyl L-aspartate ammonium tosylate salt (**6b**)*



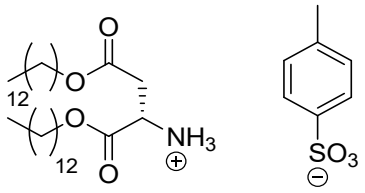
63%; white powder; **^{1}H NMR** (300 MHz, DMSO-d_6), δ (ppm): 8.41 (s, 3H, N**H$_3$**), 7.50 (d, *J* = 8.1 Hz, 2H, Ar-**H**), 7.12 (d, *J* = 7.8 Hz, 2H Ar-**H**), 4.35 (t, *J* = 5.4 Hz, 1H, C**H**), 4.22-3.95 (m, 4H, C**H$_2$**-O), 2.91 (m, 2H, C**H$_2$**), 2.29 (s, 3H, Ar-C**H$_3$**), 1.56 (m, *J* = 7.1 Hz, 4H, C**H$_2$**-CH$_2$-O), 1.28 (m, 12H, (C**H$_2$**)$_3$), 0.87 (t, 6H, C**H$_3$**); **^{13}C NMR** (75 MHz, DMSO-d_6), δ (ppm): 169.13 (**C**=O), 168.31 (**C**=O), 145.31 (**C(i)** Tosyl), 137.83 (**C(p)** Tosyl), 128.07 (**C(m)** Tosyl), 125.49 (**C(o)** Tosyl), 65.89 (**C**H$_2$-O), 64.88 (**C**H$_2$-O), 48.58 (**C**H-NH), 34.26 (CH-**C**H$_2$), 30.87, 30.82, 27.92, 27.82, 24.95, 24.81, 21.97, 20.75, 13.82.

*didodecyl L-aspartate ammonium tosylate salt (**6d**)*



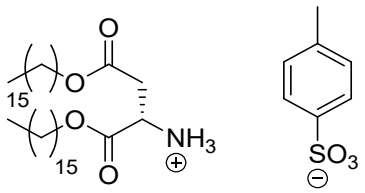
98%; white powder; **^{1}H NMR** (300 MHz, DMSO-d_6), δ (ppm): 8.44 (s, 3H, N**H$_3$**), 7.50 (d, 2H, Ar-**H**), 7.11 (d, *J* = 7.9 Hz, 2H Ar-**H**), 4.36 (t, *J* = 5.4 Hz, 1H, C**H**), 4.23-3.98 (m, 4H, C**H$_2$**-O), 2.92 (qd, *J* = 17.4, 5.4 Hz, 2H, C**H$_2$**), 2.29 (s, 3H, Ar-C**H$_3$**), 1.56 (m, *J* = 6.9 Hz, 4H, C**H$_2$**-CH$_2$-O), 1.24 (m, 36H, (C**H$_2$**)$_9$), 0.85 (t, 6H, C**H$_3$**); **^{13}C NMR** (75 MHz, DMSO-d_6), δ (ppm): 169.04, 168.19, 145.35, 137.74, 128.03, 125.49, 65.87, 64.84, 48.50, 34.15, 31.33, 29.13, 29.10, 29.06, 29.00, 28.76, 28.70, 27.99, 27.87, 25.32, 25.21, 22.10, 20.73, 13.85.

*ditridecyl L-aspartate ammonium tosylate salt (**6e**)*



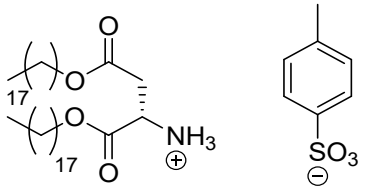
99%; white powder; **^{1}H NMR** (300 MHz, DMSO-d_6), δ (ppm): 8.44 (s, 3H, N**H$_3$**), 7.50 (d, 2H, Ar-**H**), 7.11 (d, *J* = 7.9 Hz, 2H Ar-**H**), 4.36 (t, *J* = 5.4 Hz, 1H, C**H**), 4.24-3.94 (m, 4H, C**H$_2$**-O), 2.92 (qd, *J* = 17.4, 5.4 Hz, 2H, C**H$_2$**), 2.29 (s, 3H, Ar-C**H$_3$**), 1.54 (m, *J* = 6.7 Hz, 4H, C**H$_2$**-CH_2-O), 1.24 (m, 40H, (C**H$_2$**)$_{10}$), 0.84 (t, 6H, C**H$_3$**); **^{13}C NMR** (75 MHz, DMSO-d_6), δ (ppm): 169.02, 168.19, 145.35, 137.73, 128.02, 125.49, 65.86, 64.82, 48.49, 34.14, 31.34, 29.14, 29.11, 29.07, 29.02, 28.76, 28.71, 28.00, 27.87, 25.32, 25.22, 22.10, 20.73, 13.83.

*dihexadecyl L-aspartate ammonium tosylate salt (**6g**)*



99%; white powder; **^{1}H NMR** (300 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 8.47 (s, 3H, N**H$_3$**), 7.56 (d, 2H, Ar-**H**), 7.11 (d, *J* = 7.9 Hz, 2H Ar-**H**), 4.40-3.94 (m, 5H, C**H** + C**H$_2$**-O), 2.94 (m, 2H, C**H$_2$**), 2.31 (s, 3H, Ar-C**H$_3$**), 1.58 (p, *J* = 6.9 Hz, 4H, C**H$_2$**-CH_2-O), 1.24 (m, 52H, (C**H$_2$**)$_{13}$), 0.86 (t, 6H, C**H$_3$**).

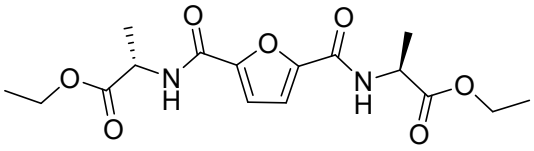
*dioctadecyl L-aspartate ammonium tosylate salt (**6h**)*



99%; white powder; **^{1}H NMR** (300 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 8.49 (s, 3H, N**H$_3$**), 7.59 (d, 2H, Ar-**H**), 7.11 (d, *J* = 7.8 Hz, 2H Ar-**H**), 4.32-3.99 (m, 5H, C**H** + C**H$_2$**-O), 2.97 (dd, *J* = 5.4, 3.0 Hz, 2H, C**H$_2$**), 2.32 (s, 3H, Ar-C**H$_3$**), 1.59 (m, *J* = 6.5 Hz, 4H, C**H$_2$**-CH_2-O), 1.24 (m, 60H, (C**H$_2$**)$_{15}$), 0.86 (t, 6H, C**H$_3$**).

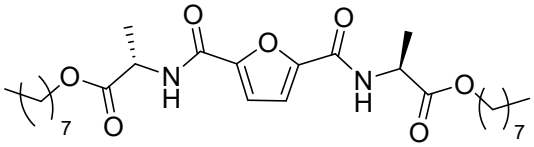
Di(amido-esters).

*N^2, N^5-di(ethyl L-alaninate)-furan-2,5-dicarboxamide (**8a**)*



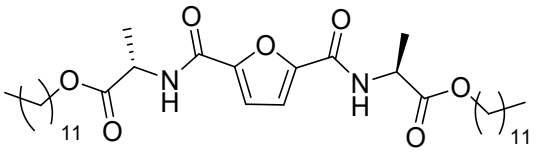
84%; yellow solid; **Tf:** 109,6°C; **^{1}H NMR** (400 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 8.49 (d, *J* = 7.9 Hz, 2H, N**H**), 7.13 (s, 2H, C**H** furan), 4.58 (m, 2H, C**H**-NH), 4.23-4.05 (m, 4H, C**H$_2$**-O), 1.49 (d, *J* = 7.3 Hz, 6H, C**H$_3$**-CH-NH), 1.25 (t, *J* = 7.1 Hz, 6H, C**H$_3$**-CH_2); **^{13}C NMR** (75 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 172.00 (**C**=O ester), 156.84 (**C**=O amide), 147.69 (**C**-C=O amide), 114.65 (**C**H furan), 60.54 (**C**H_2-O), 47.42 (NH-**C**H), 16.77 (**C**H_3-CH), 13.47 (**C**H_3-CH_2).

*N^2, N^5-di(octyl L-alaninate)-furan-2,5-dicarboxamide (**8c**)*



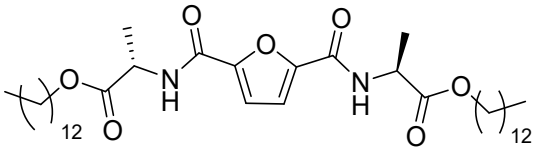
84%; yellow solid; **Tf:** 51,3°C; **^{1}H NMR** (300 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 8.53 (d, *J* = 7.6 Hz, 2H, N**H**), 7.13 (s, 2H, C**H** furan), 4.58 (p, *J* = 7.4 Hz, 2H, C**H**-NH), 4.22-3.94 (m, 4H, C**H$_2$**-O), 1.61 (p, *J* = 6.7 Hz, 4H, C**H$_2$**-CH_2-O), 1.48 (d, *J* = 7.3 Hz, 6H, C**H$_3$**-CH-NH), 1.26 (m, 20H, CH_3-(C**H$_2$**)$_5$), 0.84 (t, 6H, C**H$_3$**-CH_2); **^{13}C NMR** (75 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 172.09 (**C**=O ester), 156.90 (**C**=O amide), 147.72 (**C**-C=O amide), 114.68 (**C**H furan), 64.63 (**C**H_2-O), 47.50 (NH-**C**H), 31.12, 28.52, 27.98, 25.20, 22.00, 16.78, 13.46.

*N^2, N^5-di(dodecyl L-alaninate)-furan-2,5-dicarboxamide (**8d**)*



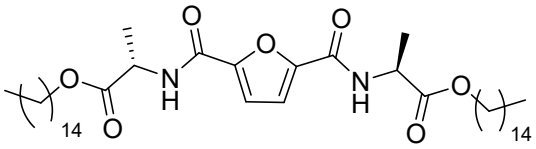
75%; yellow paste; **^{1}H NMR** (300 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 8.44 (d, *J* = 7.8 Hz, 2H, N**H**), 7.11 (s, 2H, C**H** furan), 4.61 (p, *J* = 7.3 Hz, 2H, C**H**-NH), 4.18-4.04 (m, 4H, C**H$_2$**-O), 1.62 (p, *J* = 6.9 Hz, 4H, C**H$_2$**-CH_2-O), 1.49 (d, *J* = 7.3 Hz, 6H, C**H$_3$**-CH-NH), 1.25 (m, 36H, CH_3-(C**H$_2$**)$_9$), 0.86 (t, *J* = 6.5 Hz, 6H, C**H$_3$**-CH_2); **^{13}C NMR** (101 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 172.07 (**C**=O ester), 156.84 (**C**=O amide), 147.71 (**C**-C=O amide), 114.63 (**C**H furan), 64.63 (**C**H_2-O), 47.44 (NH-**C**H), 31.27, 28.99, 28.97, 28.91, 28.87, 28.69, 28.57, 27.97, 25.20, 22.04, 16.80, 13.43.

*N^2, N^5-di(tridecyl L-alaninate)-furan-2,5-dicarboxamide (**8e**)*



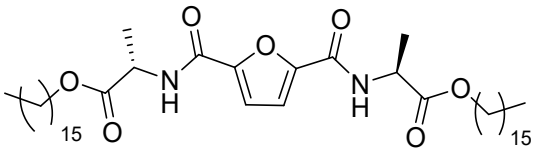
80%; yellow paste; **^{1}H NMR** (400 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 8.52 (d, *J* = 7.7 Hz, 2H, N**H**), 7.12 (s, 2H, C**H** furan), 4.59 (p, *J* = 7.4 Hz, 2H, C**H**-NH), 4.09 (m, *J* = 10.8, 6.6 Hz, 4H, C**H$_2$**-O), 1.61 (p, *J* = 6.7 Hz, 4H, C**H$_2$**-CH_2-O), 1.48 (d, *J* = 7.3 Hz, 6H, C**H$_3$**-CH-NH), 1.24 (m, 40H, CH_3-(C**H$_2$**)$_{10}$), 0.86 (t, *J* = 6.7 Hz, 6H, C**H$_3$**-CH_2); **^{13}C NMR** (101 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 172.04 (**C**=O ester), 156.83 (**C**=O amide), 147.63 (**C**-C=O amide), 114.63 (**C**H furan), 64.58 (**C**H_2-O), 47.45 (NH-**C**H), 31.25, 28.99, 28.96, 28.89, 28.85, 28.67, 28.55, 27.96, 25.18, 22.02, 16.77, 13.47.

*N^2, N^5-di(pentadecyl L-alaninate)-furan-2,5-dicarboxamide (**8f**)*



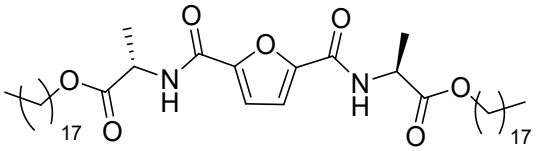
63%; yellow paste; **^{1}H NMR** (400 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 8.50 (d, *J* = 7.7 Hz, 2H, N**H**), 7.12 (s, 2H, C**H** furan), 4.59 (p, *J* = 7.3 Hz, 2H, C**H**-NH), 4.09 (m, *J* = 10.8, 6.5 Hz, 4H, C**H$_2$**-O), 1.61 (p, *J* = 6.8 Hz, 4H, C**H$_2$**-CH_2-O), 1.48 (d, *J* = 7.3 Hz, 6H, C**H$_3$**-CH-NH), 1.24 (m, 48H, CH_3-(C**H$_2$**)$_{12}$), 0.86 (t, *J* = 6.5 Hz, 6H, C**H$_3$**-CH_2); **^{13}C NMR** (101 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 172.04 (**C**=O ester), 156.82 (**C**=O amide), 147.70 (**C**-C=O amide), 114.62 (**C**H furan), 64.58 (**C**H_2-O), 47.43 (NH-**C**H), 31.25, 29.01, 28.99, 28.97, 28.89, 28.85, 28.67, 28.55, 27.96, 25.18, 22.02, 16.77, 13.46.

*N^2, N^5-di(hexadecyl L-alaninate)-furan-2,5-dicarboxamide (**8g**)*



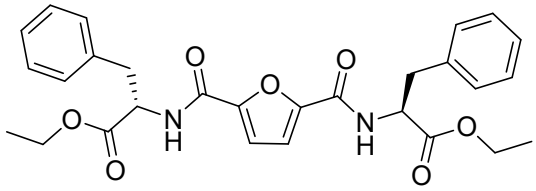
71%; yellow solid; **Tf:** 32°C; **^{1}H NMR** (400 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 8.51 (d, *J* = 7.6 Hz, 2H, N**H**), 7.12 (s, 2H, C**H** furan), 4.60 (p, *J* = 7.3 Hz, 2H, C**H**-NH), 4.09 (m, 4H, C**H$_2$**-O), 1.61 (p, *J* = 6.9 Hz, 4H, C**H$_2$**-CH_2-O), 1.48 (d, *J* = 7.3 Hz, 6H, C**H$_3$**-CH-NH), 1.24 (m, 52H, CH_3-(C**H$_2$**)$_{13}$), 0.86 (t, *J* = 6.7 Hz, 6H, C**H$_3$**-CH_2); **^{13}C NMR** (101 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 172.19 (**C**=O ester), 172.04 (**C**=O ester), 156.82 (**C**=O amide), 147.70 (**C**-C=O amide), 147.66 (**C**-C=O amide), 114.61 (**C**H furan), 64.58 (**C**H_2-O), 47.43 (NH-**C**H), 47.36 (NH-**C**H), 31.25, 29.12 – 28.44 (m), 27.96, 25.18, 22.02, 16.77 (CH-**C**H_3), 16.69 (CH-**C**H_3), 13.45.

*N^2, N^5-di(octadecyl L-alaninate)-furan-2,5-dicarboxamide (**8h**)*



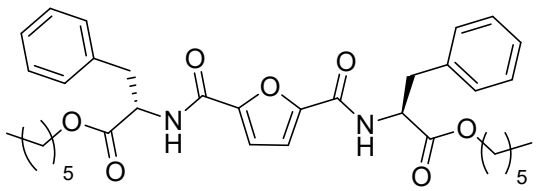
88%; white solid; **Tf:** 45,3°C; **^{1}H NMR** (400 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 8.49 (dd, *J* = 13.4, 7.7 Hz, 2H, N**H**), 7.12 (d, *J* = 2.3 Hz, 2H, C**H** furan), 4.62 (pd, *J* = 7.4, 3.1 Hz, 2H, C**H**-NH), 4.18-4.04 (m, 4H, C**H_2**-O), 1.62 (m, 4H, C**H_2**-CH_2-O), 1.50 (dd, *J* = 7.4, 1.7 Hz, 6H, C**H_3**-CH-NH_3), 1.26 (m, 60H, CH_3-(C**H_2**)$_{15}$), 0.87 (t, *J* = 6.6 Hz, 6H, C**H_3**-CH_2); **^{13}C NMR** (101 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 172.03 (**C**=O ester), 156.80 (**C**=O amide), 147.67 (**C**-C=O amide), 114.59 (**C**H furan), 64.59, 47.40, 31.23, 28.99, 28.95, 28.88, 28.83, 28.65, 28.54, 27.94, 25.16, 22.01, 16.78, 16.69, 13.41.

*N^2, N^5-di(ethyl L-phenylalaninate)-furan-2,5-dicarboxamide (**9a**)*



62%; yellow solid; **^{1}H NMR** (300 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 8.56 (d, *J* = 8.1 Hz, 2H, N**H**), 7.32-7.15 (m, 10H, Ar-**H**), 7.10 (s, 2H, C**H** furan), 4.77 (td, *J* = 8.5, 6.0 Hz, 2H, C**H**-NH), 4.14 (q, *J* = 7.1 Hz, 4H, C**H_2**-O), 3.30-3.07 (m, 4H, C**H_2**-Ph), 1.19 (t, *J* = 7.1 Hz, 6H, C**H_3**); **^{13}C NMR** (75 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 170.91 (**C**=O ester), 156.93 (**C**=O amide), 147.65 (**C**-C=O amide), 136.73 (**C(i)** Ph), 128.74 (**CH(m)** Ph), 127.88 (**CH(o)** Ph), 126.20 (**CH(p)** Ph), 114.67 (**C**H furan), 60.63 (**C**H_2-O), 53.39 (NH-**C**H), 36.75 (**C**H_2-Ph), 13.49 (**C**H_3).

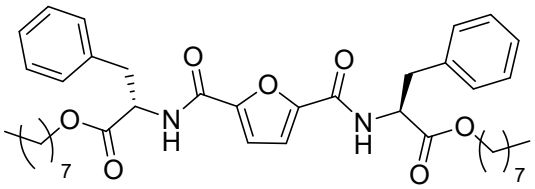
*N^2, N^5-di(hexyl L-phenylalaninate)-furan-2,5-dicarboxamide (**9b**)*



81%; yellow oil; **^{1}H NMR** (400 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 8.61 (q, *J* = 7.5, 6.1 Hz, 2H, N**H**), 7.38-7.15 (m, 10H, Ar-**H**), 7.11 (s, 2H, C**H** furan), 4.76 (q, *J* = 7.3, 6.8 Hz, 2H C**H**-NH), 4.07 (t, *J* = 6.5 Hz, 4H, C**H_2**-O), 3.38-3.03 (m, 4H, C**H_2**-Ph), 1.54 (m, 4H, C**H_2**-CH_2-O), 1.26 (m, 12H, (C**H_2**)$_3$), 0.85 (t, *J* = 6.1 Hz, 6H, C**H_3**); **^{13}C NMR** (101 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 171.01 (**C**=O ester), 156.95 (**C**=O amide), 147.66 (**C**-C=O amide), 136.80 (**C(i)** Ph), 128.72 (**CH(m)** Ph), 127.91 (**CH(o)** Ph), 126.22

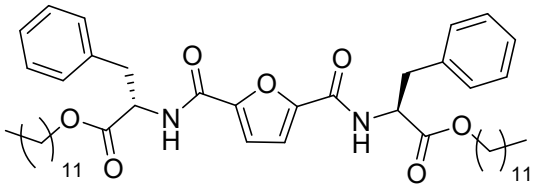
(**C**H**(p)** Ph), 114.67 (**C**H furan), 64.70 (**C**H_2-O), 53.40 (NH-**C**H), 36.73 (**C**H_2-Ph), 30.73, 27.85, 24.83, 21.86, 13.36.

*N^2, N^5-di(octyl L-phenylalaninate)-furan-2,5-dicarboxamide (**9c**)*



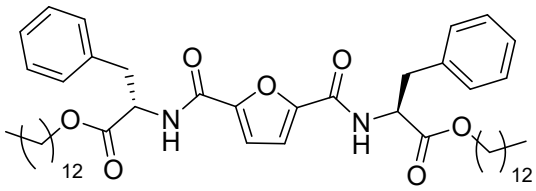
80%; yellow oil; **^{1}H NMR** (400 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 8.65 (d, *J* = 8.3 Hz, N**H (R,S)**), 8.59 (d, *J* = 8.1 Hz, 2H, N**H (S,S)**), 7.41-7.14 (m, 10H, Ar-**H**), 7.10 (s, 2H, C**H** furan **(S,S)**), 7.05 (s, C**H** furan **(R,S)**), 4.76 (m, *J* = 6.1 Hz, 2H, C**H**-NH), 4.08 (m, *J* = 6.5 Hz, 4H, C**H$_2$**-O), 3.39-2.96 (m, 4H, C**H$_2$**-Ph), 1.55 (h, *J* = 6.5 Hz, 4H, C**H$_2$**-CH_2-O), 1.25 (m, 20H, (C**H$_2$**)$_5$), 0.86 (t, *J* = 6.8 Hz, 6H, C**H$_3$**); **^{13}C NMR** (101 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 171.30 (**C**=O ester **(R,S)**), 170.99 (**C**=O ester **(S,S)**), 156.97 (**C**=O amide **(R,S)**), 156.92 (**C**=O amide **(S,S)**), 147.64 (**C**-C=O amide **(S,S)**), 147.49 (**C**-C=O amide **(R,S)**), 136.80 (**C(i)** Ph **(R,S)**), 136.77 (**C(i)** Ph **(S,S)**), 128.71 (**CH(m)** Ph), 127.92 (**CH(o)** Ph **(R,S)**), 127.89 (**CH(o)** Ph **(S,S)**), 126.24 (**CH(p)** Ph **(R,S)**), 126.20 (**CH(p)** Ph **(S,S)**), 114.65 (**C**H furan), 64.78 (**C**H_2-O **(R,S)**), 64.70 (**C**H_2-O **(S,S)**), 53.43 (NH-**C**H **(R,S)**), 53.38 (NH-**C**H **(S,S)**), 36.74 (**C**H_2-Ph **(S,S)**), 36.69 (**C**H_2-Ph **(R,S)**), 31.11, 28.49, 28.47, 27.91, 27.87, 25.16, 21.98, 13.46.

*N^2, N^5-di(dodecyl L-phenylalaninate)-furan-2,5-dicarboxamide (**9d**)*



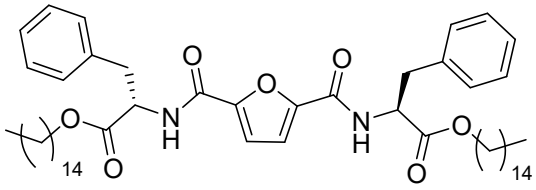
77%; yellow oil; **^{1}H NMR** (400 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 8.60 (d, *J* = 8.3 Hz, N**H (R,S)**), 8.50 (d, *J* = 8.1 Hz, 2H, N**H (S,S)**), 7.37-7.14 (m, 10H, Ar-**H**), 7.09 (s, 2H, C**H** furan **(S,S)**), 7.04 (s, C**H** furan **(R,S)**), 4.78 (m, *J* = 6.0 Hz, 2H, C**H**-NH), 4.07 (t, *J* = 6.7 Hz, 4H, C**H$_2$**-O), 3.31-3.08 (m, 4H, C**H$_2$**-Ph), 1.55 (p, *J* = 6.4 Hz, 4H, C**H$_2$**-CH_2-O), 1.25 (m, 36H, (C**H$_2$**)$_9$), 0.86 (t, 6H, C**H$_3$**); **^{13}C NMR** (101 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 171.30 (**C**=O ester **(R,S)**), 171.01 (**C**=O ester **(S,S)**), 156.98 (**C**=O amide **(R,S)**), 156.95 (**C**=O amide **(S,S)**), 147.68 (**C**-C=O amide **(S,S)**), 147.53 (**C**-C=O amide **(R,S)**), 136.84 (**C(i)** Ph), 128.74 (**CH(m)** Ph), 127.93 (**CH(o)** Ph), 126.23 (**CH(p)** Ph), 114.69 (**C**H furan), 64.77 (**C**H_2-O **(R,S)**), 64.68 (**C**H_2-O **(S,S)**), 53.44 (NH-**C**H), 36.70 (**C**H_2-Ph), 31.26, 28.99, 28.97, 28.91, 28.84, 28.68, 28.56, 27.91, 25.18, 22.04, 13.54.

*N^2, N^5-di(tridecyl L-phenylalaninate)-furan-2,5-dicarboxamide (**9e**)*



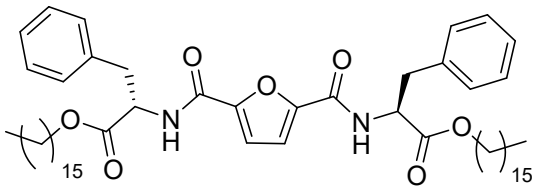
78%; yellow oil; **^{1}H NMR** (400 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 8.59 (d, *J* = 8.1 Hz, 2H, N**H**), 7.31-7.16 (m, 10H, Ar-**H**), 7.10 (s, 2H, C**H** furan), 4.77 (td, *J* = 8.4, 6.0 Hz, 2H, C**H**-NH), 4.06 (t, *J* = 6.6 Hz, 4H, C**H_2**-O), 3.28-3.10 (m, 4H, C**H_2**-Ph), 1.55 (p, *J* = 6.6 Hz, 4H, C**H_2**-CH_2-O), 1.25 m, 40H, (C**H_2**)$_{10}$), 0.87 (t, *J* = 6.6 Hz, 6H, C**H_3**); **^{13}C NMR** (101 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 170.99 (**C**=O ester), 156.92 (**C**=O amide), 147.66 (**C**-C=O amide), 136.77 (**C(i)** Ph), 128.71 (**C**H**(m)** Ph), 127.89 (**C**H**(o)** Ph), 126.20 (**C**H**(p)** Ph), 114.65 (**C**H furan), 64.69 (**C**H_2-O), 53.39 (NH-**C**H), 36.76 (**C**H_2-Ph), 31.25, 29.01, 28.97, 28.90, 28.83, 28.67, 28.55, 27.89, 25.17, 22.03, 13.49.

*N^2, N^5-di(pentadecyl L-phenylalaninate)-furan-2,5-dicarboxamide (**9f**)*



65%; yellow solid; **^{1}H NMR** (400 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 8.59 (d, *J* = 8.1 Hz, 2H, N**H**), 7.32-7.15 (m, 10H, Ar-**H**), 7.10 (s, 2H, C**H** furan), 4.77 (td, *J* = 8.4, 6.0 Hz, 2H, C**H**-NH), 4.07 (t, *J* = 6.6 Hz, 4H, C**H_2**-O), 3.30-3.09 (m, 4H, C**H_2**-Ph), 1.55 (p, *J* = 6.6 Hz, 4H, C**H_2**-CH_2-O), 1.25 m, 48H, (C**H_2**)$_{12}$), 0.87 (t, *J* = 6.7 Hz, 6H, C**H_3**); **^{13}C NMR** (101 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 171.02 (**C**=O ester), 156.97 (**C**=O amide), 147.71 (**C**-C=O amide), 136.89 (**C(i)** Ph), 128.77 (**C**H**(m)** Ph), 127.94 (**C**H**(o)** Ph), 126.25 (**C**H**(p)** Ph), 114.71 (**C**H furan), 64.68 (**C**H_2-O), 53.47 (NH-**C**H), 36.72 (**C**H_2-Ph), 31.29, 29.06, 29.02, 28.95, 28.88, 28.72, 28.60, 27.94, 25.21, 22.07, 13.57.

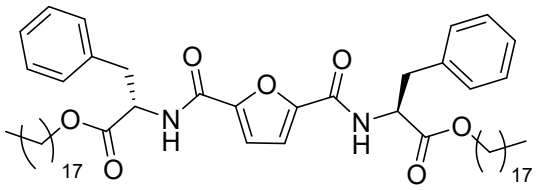
*N^2, N^5-di(hexadecyl L-phenylalaninate)-furan-2,5-dicarboxamide (**9g**)*



70%; yellow paste; **Tf:** 8°C; **^{1}H NMR** (400 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 8.66 (d, *J* = 8.3 Hz, N**H (R,S)**), 8.60 (d, *J* = 8.1 Hz, 2H, N**H (S,S)**), 7.32 – 7.16 (m, 10H, Ar-**H**), 7.10 (s, 2H, C**H** furan **(S,S)**),

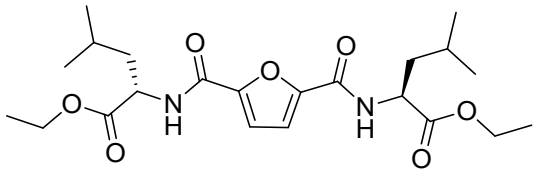
7.05 (s, C**H** furan **(R,S)**), 4.76 (td, *J* = 8.4, 6.0 Hz, 2H, C**H**-NH), 4.06 (t, *J* = 6.7 Hz, 4H, C$\mathbf{H_2}$-O), 3.31-3.07 (m, 4H, C$\mathbf{H_2}$-Ph), 1.55 (p, *J* = 6.5 Hz, 4H, C$\mathbf{H_2}$-CH_2-O), 1.24 (m, 52H, $(C\mathbf{H_2})_{13}$), 0.86 (t, *J* = 6.6 Hz, 6H, C$\mathbf{H_3}$); **^{13}C NMR** (101 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 171.29 (**C**=O ester **(R,S)**), 170.98 (**C**=O ester **(S,S)**), 156.96 (**C**=O amide **(R,S)**), 156.92 (**C**=O amide **(S,S)**), 147.67 (**C**-C=O amide **(S,S)**), 147.51 (**C**-C=O amide **(R,S)**), 136.80 (**C(i)** Ph), 128.72 (**C**H**(m)** Ph), 127.89 (**C**H**(o)** Ph), 126.25 (**C**H**(p)** Ph), 114.65 (**C**H furan), 64.77 (**C**H_2-O **(R,S)**), 64.68 (**C**H_2-O **(S,S)**), 53.40 (NH-**C**H), 36.75 (**C**H_2-Ph), 31.26, 29.02, 28.98, 28.91, 28.84, 28.68, 28.56, 27.90, 25.17, 22.03, 13.50.

*N^2, N^5-di(octadecyl L-phenylalaninate)-furan-2,5-dicarboxamide (**9h**)*



90%; white solid; **Tf:** 32,7°C; **^{1}H NMR** (400 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 8.62 (d, *J* = 8.3 Hz, N**H (R,S)**), 8.54 (d, *J* = 8.1 Hz, 2H, N**H (S,S)**), 7.35-7.16 (m, 10H, Ar-**H**), 7.10 (s, 2H, C**H** furan **(S,S)**), 7.05 (s, C**H** furan **(R,S)**), 4.79 (td, *J* = 8.4, 6.1 Hz, 2H, C**H**-NH), 4.10 (dt, *J* = 16.0, 6.7 Hz, 4H, C$\mathbf{H_2}$-O **(S,S)**), 3.94 (m, C$\mathbf{H_2}$-O **(R,S)**), 3.44 (q, *J* = 6.3 Hz, C$\mathbf{H_2}$-Ph **(R,S)**), 3.31-3.11 (m, 4H, C$\mathbf{H_2}$-Ph **(S,S)**), 1.58 (p, *J* = 6.6 Hz, 4H, C$\mathbf{H_2}$-CH_2-O), 1.26 (m, 60H, $(C\mathbf{H_2})_{15}$), 0.86 (t, *J* = 6.6 Hz, 6H, C$\mathbf{H_3}$); **^{13}C NMR** (101 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 171.27 (**C**=O ester **(R,S)**), 170.95 (**C**=O ester **(S,S)**), 156.93 (**C**=O amide **(R,S)**), 156.88 (**C**=O amide **(S,S)**), 147.63 (**C**-C=O amide **(S,S)**), 147.47 (**C**-C=O amide **(R,S)**), 136.73 (**C(i)** Ph **(R,S)**), 136.69 (**C(i)** Ph **(R,S)**), 128.67 (**C**H**(m)** Ph), 127.87 (**C**H**(o)** Ph **(R,S)**), 127.85 (**C**H**(o)** Ph **(S,S)**), 126.20 (**C**H**(p)** Ph **(R,S)**), 126.17 (**C**H**(p)** Ph **(S,S)**), 114.61 (**C**H furan), 64.77 (**C**H_2-O **(R,S)**), 64.69 (**C**H_2-O **(S,S)**), 53.39 (NH-**C**H **(R,S)**), 53.34 (NH-**C**H **(R,S)**), 36.79 (**C**H_2-Ph), 31.23, 28.99, 28.96, 28.89, 28.82, 28.65, 28.54, 27.90, 27.86, 25.15, 22.00, 13.43.

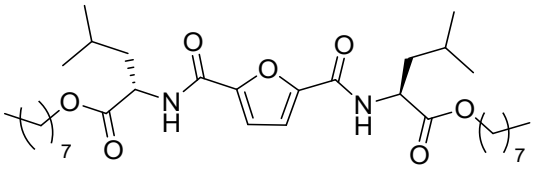
*N^2, N^5-di(ethyl L-leucinate)-furan-2,5-dicarboxamide (**10a**)*



85%; yellow oil; **^{1}H NMR** (400 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 8.51 (dd, *J* = 8.4, 2.6 Hz, 2H, N**H**), 7.17 (d, 2H, C**H** furan), 4.63 (m, 2H, C**H**-NH_3), 4.16 (m, 4H, C$\mathbf{H_2}$-O), 1.72 (m, 10H, $(CH_3)_2$-C**H**-C$\mathbf{H_2}$), 1.25 (m, 6H, C$\mathbf{H_3}$), 0.94 (m, 12H, CH-$(C\mathbf{H_3})_2$); **^{13}C NMR** (101 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm):

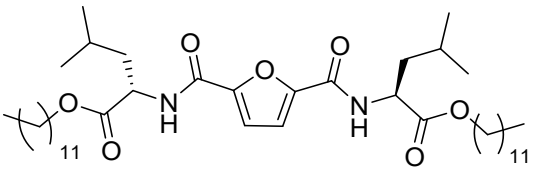
172.02 (**C**=O ester), 157.12 (**C**=O amide), 147.77 (**C**-C=O amide), 114.74 (**C**H furan), 60.49 (**C**H_2-O), 50.07 (NH-**C**H), 39.81 (**C**H-$(CH_3)_2$), 24.27, 22.33, 20.93, 13.63.

*N^2, N^5-di(octyl L-leucinate)-furan-2,5-dicarboxamide (**10c**)*



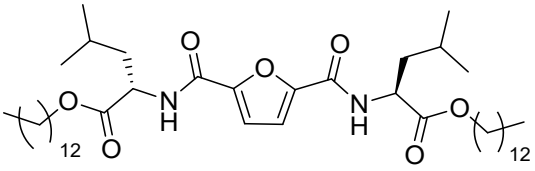
89%; yellow oil; **^{1}H NMR** (400 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 8.47 (d, *J* = 8.3 Hz, 2H, N**H**), 7.15 (s, 2H, C**H** furan), 4.62 (m, 2H, C**H**-NH_3), 4.09 (m, 4H, C$\mathbf{H_2}$-O), 1.83-1.55 (m, 10H, $(CH_3)_2$-C**H**-C$\mathbf{H_2}$ + C$\mathbf{H_2}$-CH_2-O), 1.26 (m, 20H, CH_3-(C$\mathbf{H_2}$)$_5$), 0.94 (dd, *J* = 11.9, 5.1 Hz, 12H, CH-(C$\mathbf{H_3}$)$_2$), 0.85 (t, *J* = 6.7 Hz, 6H, C$\mathbf{H_3}$-CH_2); **^{13}C NMR** (101 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 172.06 (**C**=O ester), 157.08 (**C**=O amide), 147.77 (**C**-C=O amide), 114.70 (**C**H furan), 64.52 (**C**H_2-O), 50.09 (NH-**C**H), 39.87 (**C**H-$(CH_3)_2$), 31.08, 28.49, 28.46, 27.93, 25.19, 24.28, 22.26, 21.97, 20.97, 13.47.

*N^2, N^5-di(dodecyl L-leucinate)-furan-2,5-dicarboxamide (**10d**)*



88%; yellow oil; **^{1}H NMR** (400 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 8.47 (d, *J* = 8.3 Hz, 2H, N**H**), 7.15 (s, 2H, C**H** furan), 4.62 (m, 2H, C**H**-NH_3), 4.09 (m, 4H, C$\mathbf{H_2}$-O), 1.84-1.52 (m, 10H, $(CH_3)_2$-C**H**-C$\mathbf{H_2}$ + C$\mathbf{H_2}$-CH_2-O), 1.25 (m, 36H, CH_3-(C$\mathbf{H_2}$)$_9$), 0.94 (dd, *J* = 11.7, 5.3 Hz, 12H, CH-(C$\mathbf{H_3}$)$_2$), 0.86 (t, *J* = 6.6 Hz, 6H, C$\mathbf{H_3}$-CH_2); **^{13}C NMR** (101 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 172.04 (**C**=O ester), 157.07 (**C**=O amide), 147.78 (**C**-C=O amide), 114.69 (**C**H furan), 64.50 (**C**H_2-O), 50.10 (NH-**C**H), 39.88 (**C**H-$(CH_3)_2$), 31.24, 28.96, 28.94, 28.87, 28.84, 28.66, 28.52, 27.94, 25.20, 24.28, 22.27, 22.02, 20.99, 13.49.

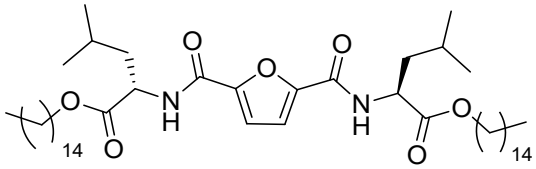
*N^2, N^5-di(tridecyl L-leucinate)-furan-2,5-dicarboxamide (**10e**)*



73%; yellow oil; **^{1}H NMR** (300 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 8.47 (d, *J* = 8.3 Hz, 2H, N**H**), 7.15 (s, 2H, C**H** furan), 4.62 (m, 2H, C**H**-NH_3), 4.08 (m, 4H, C$\mathbf{H_2}$-O), 1.85-1.52 (m, 10H, $(CH_3)_2$-C**H**-C$\mathbf{H_2}$ + C$\mathbf{H_2}$-CH_2-O), 1.24 (m, 40H, CH_3-(C$\mathbf{H_2}$)$_{10}$), 0.94 (dd, *J* = 8.7, 5.7 Hz, 12H, CH-(C$\mathbf{H_3}$)$_2$), 0.85 (t, *J* = 6.7 Hz,

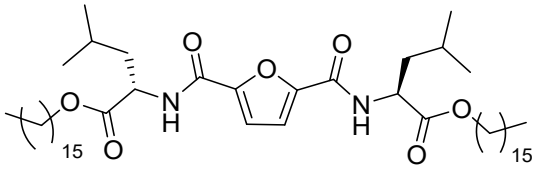
6H, C**H$_3$**-CH$_2$); **^{13}C NMR** (75 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 172.02 (**C**=O ester), 157.06 (**C**=O amide), 147.77 (**C**-C=O amide), 114.67 (**C**H furan), 64.49 (**C**H$_2$-O), 50.09 (NH-**C**H), 39.87 (**C**H-(CH$_3$)$_2$), 31.23, 28.97, 28.94, 28.85, 28.82, 28.64, 28.50, 27.93, 25.18, 24.27, 22.25, 22.00, 20.98, 13.48.

*N^2, N^5-di(pentadecyl L-leucinate)-furan-2,5-dicarboxamide (**10f**)*



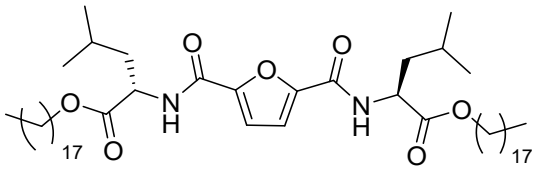
65%; yellow oil; **Tf:** -1°C; **^{1}H NMR** (300 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 8.53 (d, N**H (R,S)**), 8.47 (d, *J* = 8.3 Hz, 2H, N**H (S,S)**), 7.15 (s, 2H, C**H** furan **(S,S)**), 7.12 (s, C**H** furan **(R,S)**), 4.62 (m, 2H, C**H**-NH$_3$), 4.08 (m, 4H, C**H$_2$**-O), 1.85-1.52 (m, 10H, (CH$_3$)$_2$-C**H**-C**H$_2$** + C**H$_2$**-CH$_2$-O), 1.24 (m, 48H, CH$_3$-(C**H$_2$**)$_{12}$), 0.94 (dd, *J* = 8.7, 5.8 Hz, 12H, CH-(C**H$_3$**)$_2$), 0.85 (t, *J* = 6.6 Hz, 6H, C**H$_3$**-CH$_2$); **^{13}C NMR** (75 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 172.02 (**C**=O ester), 157.06 (**C**=O amide), 147.77 (**C**-C=O amide), 114.68 (**C**H furan), 64.49 (**C**H$_2$-O), 50.10 (NH-**C**H), 39.87 (**C**H-(CH$_3$)$_2$), 31.23, 28.98, 28.95, 28.86, 28.83, 28.65, 28.51, 27.93, 25.18, 24.28, 22.26, 22.01, 20.99, 13.49.

*N^2, N^5-di(hexadecyl L-leucinate)-furan-2,5-dicarboxamide (**10g**)*



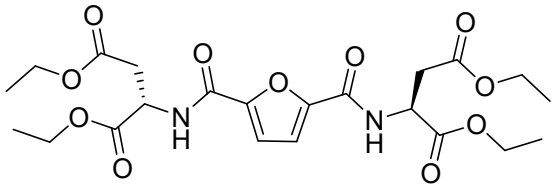
88%; yellow paste; **Tf:** 11,6°C; **^{1}H NMR** (400 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 8.50 (d, *J* = 8.2 Hz, N**H (R,S)**), 8.43 (d, *J* = 8.3 Hz, 2H, N**H (S,S)**), 7.14 (s, 2H, C**H** furan **(S,S)**), 7.11 (s, C**H** furan **(R,S)**), 4.63 (m, 2H, C**H**-NH), 4.09 (m, 4H, C**H$_2$**-O), 1.84-1.53 (m, 10H, (CH$_3$)$_2$-C**H**-C**H$_2$** + C**H$_2$**-CH$_2$-O), 1.24 (m, 52H, (C**H$_2$**)$_{13}$), 0.95 (m, 12H, CH-(C**H$_3$**)$_2$), 0.86 (t, *J* = 6.7 Hz, 6H, C**H$_3$**); **^{13}C NMR** (75 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 172.30 (**C**=O ester **(R,S)**), 172.04 (**C**=O ester **(S,S)**), 157.10 (**C**=O amide **(R,S)**), 157.05 (**C**=O amide **(S,S)**), 147.76 (**C**-C=O amide **(S,S)**), 147.63 (**C**-C=O amide **(R,S)**), 114.66 (**C**H furan **(S,S)**), 114.54 (**C**H furan **(R,S)**), 64.51 (**C**H$_2$-O), 50.20 (NH-**C**H **(R,S)**), 50.07 (NH-**C**H **(S,S)**), 39.63 (**C**H-(CH$_3$)$_2$), 31.24, 28.99, 28.96, 28.87, 28.83, 28.66, 28.51, 27.92, 25.18, 24.34, 24.27, 22.22, 22.01, 20.96, 20.84, 13.45.

*N^2, N^5-di(octadecyl L-leucinate)-furan-2,5-dicarboxamide (**10h**)*



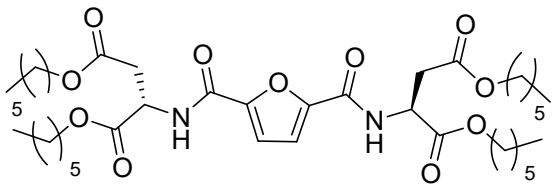
77%; yellow solid; **Tf:** 26,9°C; **^{1}H NMR** (400 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 8.52 (d, *J* = 7.9Hz, N**H (R,S)**), 8.45 (d, *J* = 8.2 Hz, 2H, N**H (S,S)**), 7.14 (s, 2H, C**H** furan **(S,S)**), 7.11 (s, C**H** furan **(R,S)**), 4.62 (m, 2H, C**H**-NH), 4.09 (m, 4H, C**H$_2$**-O), 1.83-1.52 (m, 10H, $(CH_3)_2$-C**H**-C**H$_2$** + C**H$_2$**-CH_2-O), 1.24 (m, 60H, $(CH_2)_{15}$), 0.94 (dd, *J* = 11.5, 5.3 Hz, 12H, CH-(CH_3)$_2$), 0.85 (t, *J* = 6.5 Hz, 6H, C**H$_3$**-CH_2); **^{13}C NMR** (75 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 172.30 (**C**=O ester **(R,S)**), 172.05 (**C**=O ester **(S,S)**), 157.11 (**C**=O amide **(R,S)**), 157.06 (**C**=O amide **(S,S)**), 147.75 (**C**-C=O amide **(S,S)**), 147.63 (**C**-C=O amide **(R,S)**), 114.68 (**C**H furan **(S,S)**), 114.57 (**C**H furan **(R,S)**), 64.51 (**C**H_2-O), 50.20 (NH-**C**H **(R,S)**), 50.08 (NH-**C**H **(S,S)**), 39.90 (**C**H-(CH_3)$_2$), 31.25, 29.00, 28.96, 28.87, 28.84, 28.67, 28.52, 27.93, 25.19, 24.34, 24.27, 22.25, 22.02, 20.97, 20.85, 13.48.

N^2, N^5-bis(diethyl L-aspartate)-furan-2,5-dicarboxamide ***(11a)***



82%; yellow oil; **^{1}H NMR** (400 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 8.73 (d, *J* = 8.2 Hz, 2H, N**H**), 7.16 (s, 2H, C**H** furan), 4.88 (qd, *J* = 7.4, 6.6, 1.3 Hz, 2H, C**H**-NH), 4.25-4.01 (m, 8H, C**H$_2$**-O), 3.08-2.72 (m, 4H, C**H$_2$**-C=O), 1.21 (q, *J* = 7.2 Hz, 12H, C**H$_3$**-CH_2); **^{13}C NMR** (101 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 169.98 (**C**=O ester), 169.74 (**C**=O ester), 156.90 (**C**=O amide), 147.66 (**C**-C=O amide), 114.89 (**C**H furan), 60.97 (**C**H_2-O), 60.20 (**C**H_2-O), 48.54 (NH-**C**H), 35.56 (C**H$_2$**), 13.55 (C**H$_3$**), 13.53 (C**H$_3$**).

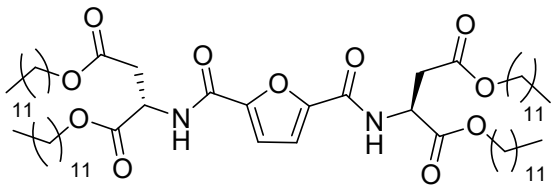
N^2, N^5-bis(dihexyl L-aspartate)-furan-2,5-dicarboxamide ***(11b)***



86%; yellow oil; **^{1}H NMR** (400 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 8.74 (d, *J* = 8.1 Hz, 2H, N**H**), 7.16 ((d, *J* = 8.1 Hz, 2H, C**H** furan), 4.89 (q, *J* = 7.4 Hz, 2H, C**H**-NH), 4.07 (m, 8H, C**H$_2$**-O), 3.07-2.79 (m, 4H, C**H$_2$**-C=O), 1.57 (m, 8H, C**H$_2$**-CH_2-O), 1.27 (m, 24H, CH_3-(C**H$_2$**)$_3$), 0.84 (t, *J* = 7.0 Hz, 12H, C**H$_3$**-CH_2); **^{13}C NMR** (101 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 170.03 (d, *J* = 4.2 Hz, **C**=O ester), 169.79 (**C**=O

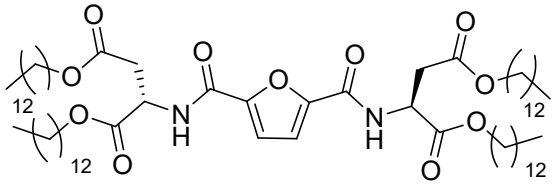
ester), 156.86 (**C**=O amide), 147.66 (**C**-C=O amide), 114.81 (**C**H furan), 64.99 (**C**H_2-O), 64.29 (**C**H_2-O), 48.53 (NH-**C**H), 35.52, 30.75, 30.70, 27.89, 27.83, 24.87, 24.80, 21.85, 13.37, 13.34.

*N^2, N^5-bis(didodecyl L-aspartate)-furan-2,5-dicarboxamide (**11d**)*



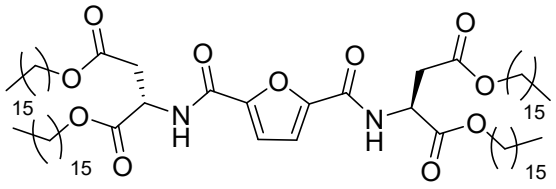
75%; yellow paste; **Tf:** -1,1°C; **^{1}H NMR** (400 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 8.69 (d, *J* = 8.1 Hz, 2H, N**H**), 7.14 (s, 2H, C**H** furan), 4.89 (q, *J* = 7.0 Hz, 2H, C**H**-NH), 4.15-4.01 (m, 8H, C**H_2**-O), 3.07-2.76 (m, 4H, C**H_2**-C=O), 1.58 (m, 8H, C**H_2**-CH_2-O), 1.25 (m, 72H, CH_3-(C**H_2**)$_9$), 0.86 (t, *J* = 6.7 Hz, 12H, C**H_3**-CH_2); **^{13}C NMR** (75 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 169.95 (**C**=O ester), 169.75 (**C**=O ester), 156.82 (**C**=O amide), 147.66 (**C**-C=O amide), 114.79 (**C**H furan), 64.98 (**C**H_2-O), 64.29 (**C**H_2-O), 48.50 (NH-**C**H), 35.56, 31.24, 28.98, 28.95, 28.91, 28.85, 28.66, 28.59, 28.56, 27.94, 27.88, 25.22, 25.17, 22.01, 13.45.

*N^2, N^5-bis(ditridecyl L-aspartate)-furan-2,5-dicarboxamide (**11e**)*



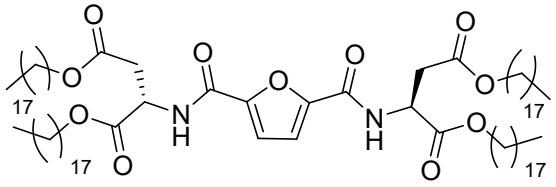
74%; yellow paste; **Tf:** 10,3°C; **^{1}H NMR** (400 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 8.74 (d, *J* = 8.1 Hz, 2H, N**H**), 7.15 (s, 2H, C**H** furan), 4.88 (q, *J* = 7.0 Hz, 2H, C**H**-NH), 4.18-3.98 (m, 8H, C**H_2**-O), 3.07-2.76 (m, 4H, C**H_2**-C=O), 1.57 (m, 8H, C**H_2**-CH_2-O), 1.25 (m, 80H, CH_3-(C**H_2**)$_{10}$), 0.86 (t, *J* = 6.7 Hz, 12H, C**H_3**-CH_2); **^{13}C NMR** (75 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 169.97 (**C**=O ester), 169.74 (**C**=O ester), 156.83 (**C**=O amide), 147.69 (**C**-C=O amide), 114.84 (**C**H furan), 64.94 (**C**H_2-O), 64.26 (**C**H_2-O), 48.54 (NH-**C**H), 35.56, 31.25, 29.01, 28.98, 28.93, 28.87, 28.68, 28.61, 28.57, 27.97, 27.90, 25.24, 25.19, 22.02, 13.53.

*N^2, N^5-bis(dihexadecyl L-aspartate)-furan-2,5-dicarboxamide (**11g**)*



47%; white solid; **Tf:** 37,6°C; **^{1}H NMR** (300 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 8.68 (d, *J* = 8.1 Hz, 2H, N**H**), 7.14 (s, 2H, C**H** furan), 4.89 (m, 2H, C**H**-NH), 4.19-3.95 (m, 8H, C**H$_2$**-O), 3.07-2.76 (m, 4H, C**H$_2$**-C=O), 1.59 (m, 8H, C**H$_2$**-CH_2-O), 1.24 (m, 104H, CH_3-(C**H$_2$**)$_{13}$), 0.84 (t, 12H, C**H$_3$**-CH_2); **^{13}C NMR** (75 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 169.94 (**C**=O ester), 169.75 (**C**=O ester), 156.81 (**C**=O amide), 147.66 (**C**-C=O amide), 114.80 (**C**H furan), 64.97 (**C**H_2-O), 64.28 (**C**H_2-O), 48.49 (NH-**C**H), 35.56, 31.25, 29.03, 28.99, 28.93, 28.87, 28.68, 28.61, 28.57, 27.95, 27.89, 25.24, 25.18, 22.02, 13.45.

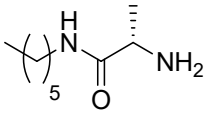
*N^2, N^5-bis(dioctadecyl L-aspartate)-furan-2,5-dicarboxamide (**11h**)*



64%; white solid; **Tf:** 50,5°C; **^{1}H NMR** (300 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 8.68 (d, *J* = 8.1 Hz, 2H, N**H**), 7.14 (s, 2H, C**H** furan), 4.88 (q, 2H, C**H**-NH), 4.19-3.98 (m, 8H, C**H$_2$**-O), 3.07-2.76 (m, 4H, C**H$_2$**-C=O), 1.58 (m, 8H, C**H$_2$**-CH_2-O), 1.24 (m, 120H, CH_3-(C**H$_2$**)$_{15}$), 0.85 (t, 12H, C**H$_3$**-CH_2); **^{13}C NMR** (75 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 169.94 (**C**=O ester), 169.74 (**C**=O ester), 156.81 (**C**=O amide), 147.66 (**C**-C=O amide), 114.80 (**C**H furan), 64.97 (**C**H_2-O), 64.28 (**C**H_2-O), 48.49 (NH-**C**H), 35.56, 31.26, 29.03, 28.99, 28.94, 28.88, 28.68, 28.62, 28.58, 27.96, 27.89, 25.24, 25.18, 22.02, 13.46.

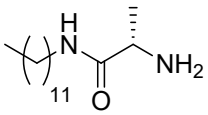
Amino-amides.

*N-hexyl-L-alaninamide (**12a**)*



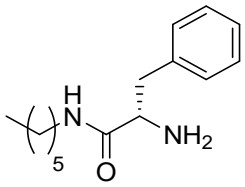
95%; white solid; **^{1}H NMR** (300 MHz, DMSO-d_6), δ (ppm): 7.75 (t, *J* = 5.9 Hz, 1H, N**H**), 3.21 (q, *J* = 6.8 Hz, 1H, C**H**), 3.04 (dt, *J* = 7.8, 6.0 Hz, 2H, C**H$_2$**-NH), 2.01 (s, 2H, N**H$_2$**), 1.39 (p, *J* = 7.3 Hz, 2H, C**H$_2$**-CH_2-NH), 1.25 (m, 6H, (C**H$_2$**)$_3$), 1.10 (d, *J* = 6.9 Hz, 3H, C**H$_3$**-CH), 0.84 (t, 3H, C**H$_3$**); **^{13}C NMR** (75 MHz, DMSO-d_6), δ (ppm): 175.44 (**C**=O), 50.25 (**C**H), 38.21 (**C**H_2-NH), 30.97, 29.12, 26.00, 22.02, 21.68, 13.81.

*N-dodecyl-L-alaninamide (**12d**)*



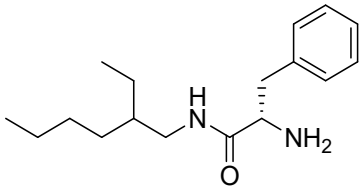
60%; white solid; **^{1}H NMR** (300 MHz, DMSO-d_6), δ (ppm): 7.77 (t, *J* = 5.9 Hz, 1H, N**H**), 3.25 (q, *J* = 6.9 Hz, 1H, C**H**), 3.03 (m 2H, C**H_2**-NH), 2.63 (s, 2H, N**H_2**), 1.38 (m, 2H, C**H_2**-CH_2-NH), 1.26 (m, 18H, (C**H_2**)$_9$), 1.11 (d, *J* = 6.9 Hz, 3H, C**H_3**-CH), 0.84 (t, 3H, C**H_3**); **^{13}C NMR** (75 MHz, DMSO-d_6), δ (ppm): 174.90 (**C**=O), 50.07 (**C**H), 38.22 (**C**H_2-NH), 31.26, 29.11, 29.01, 28.98, 28.96, 28.71, 28.67, 26.31, 22.05, 21.34, 13.90.

*N-hexyl-L-phenylalaninamide (**13a**)*



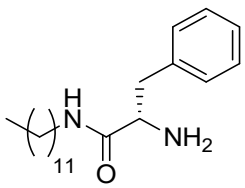
98%; white solid; **^{1}H NMR** (300 MHz, DMSO-d_6), δ (ppm): 7.75 (t, *J* = 5.7 Hz, 1H, N**H**), 7.34-7.12 (m, 5H, Ar-**H**), 3.36 (dd, *J* = 7.8, 5.5 Hz, 1H, C**H**), 3.02 (h, *J* = 6.4 Hz, 2H, C**H_2**-NH), 2.93-2.56 (m, 2H, C**H_2**-Ph), 1.85 (s, 2H, N**H_2**), 1.33 (m, 2H, C**H_2**-CH_2-NH), 1.21 (m, 6H, (C**H_2**)$_3$), 0.84 (t, *J* = 6.8 Hz, 3H, C**H_3**); **^{13}C NMR** (75 MHz, DMSO-d_6), δ (ppm): 173.86 (**C**=O amide), 138.68 (**C(i)** Ph), 129.25 (**C**H**(m)** Ph), 128.00 (**C**H**(o)** Ph), 126.01 (**C**H**(p)** Ph), 56.23 (NH_2-**C**H), 41.22 (**C**H_2-NH), 38.29 (**C**H_2-Ph), 30.97, 29.02, 25.99, 22.01, 13.89.

*N-2-ethylhexyl-L-phenylalaninamide (**13b**)*



99%; white solid; **^{1}H NMR** (300 MHz, DMSO-d_6), δ (ppm): 7.88 (t, *J* = 5.8 Hz, 1H, N**H**), 7.36-7.09 (m, 5H, Ar-**H**), 3.63-3.56 (m, 1H, C**H**), 3.13-2.68 (m, 4H, C**H_2**-Ph + NH-C**H_2**), 1.42-0.96 (m, 9H, C**H**-C**H_2** + (C**H_2**)$_3$), 0.82 (m, 6H, C**H_3**).

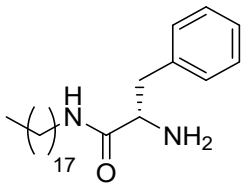
*N-dodecyl-L-phenylalaninamide (**13d**)*



98%; white solid; **^{1}H NMR** (300 MHz, DMSO-d_6), δ (ppm): 7.74 (t, *J* = 5.8 Hz, 1H, N**H**), 7.31-7.13 (m, 5H, Ar-**H**), 3.35 (dd, *J* = 7.9, 5.4 Hz, 1H, C**H**), 3.01 (m, 2H, C**H_2**-NH), 2.95-2.54 (m, 2H, C**H_2**-Ph), 1.90

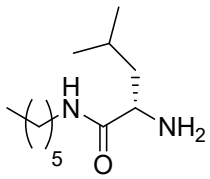
(s, 2H, N**H$_2$**), 1.31 (m, 2H, C**H$_2$**-CH$_2$-NH), 1.24 (m, 18H, (C**H$_2$**)$_9$), 0.84 (t, 3H, C**H$_3$**); **^{13}C NMR** (75 MHz, DMSO-d$_6$), δ (ppm): 173.90 (**C**=O amide), 138.72 (**C(i)** Ph), 129.23 (**C**H**(m)** Ph), 127.97 (**C**H**(o)** Ph), 125.97 (**C**H**(p)** Ph), 56.25 (NH$_2$-**C**H), 41.26 (**C**H$_2$-NH), 38.26 (**C**H$_2$-Ph), 31.27, 29.05, 29.02, 28.97, 28.94, 28.73, 28.68, 26.30, 22.06, 13.91.

*N-octadecyl-L-phenylalaninamide **(13f)***



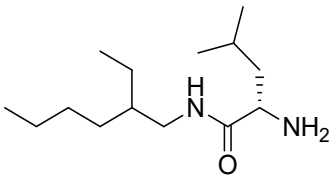
91%; white solid; **^{1}H NMR** (300 MHz, CD$_2$Cl$_2$-d$_2$ / DMSO-d$_6$), δ (ppm): 7.57 (t, *J* = 5.2 Hz, 1H, N**H**), 7.33-7.09 (m, 5H, Ar-**H**), 3.43 (dd, *J* = 8.4, 4.9 Hz, 1H, C**H**), 3.09 (m, 2H, C**H$_2$**-NH), 3.04-2.61 (m, 2H, C**H$_2$**-Ph), 1.39 (m, 2H, C**H$_2$**-CH$_2$-NH), 1.24 (m, 30H, (C**H$_2$**)$_{15}$), 0.85 (t, 3H, C**H$_3$**). **^{13}C NMR** (101 MHz, CD$_2$Cl$_2$-d$_2$ / DMSO-d$_6$), δ (ppm): 170.15 (**C**=O amide), 136.28 (**C(i)** Ph), 129.50 (**C**H**(m)** Ph), 128.34 (**C**H**(o)** Ph), 126.78 (**C**H**(p)** Ph), 54.91 (NH$_2$-**C**H), 39.00 (**C**H$_2$-NH), 38.73 (**C**H$_2$-Ph), 31.60, 29.37, 29.35, 29.31, 29.06, 29.01, 26.65, 22.39, 13.86.

*N-hexyl-L-leucinamide **(14a)***



77%; white solid; **^{1}H NMR** (300 MHz, DMSO-d$_6$), δ (ppm): 7.79 (t, *J* = 5.9 Hz, 1H, N**H**), 3.17-2.91 (m, 3H, C**H** + NH-C**H$_2$**), 1.69 (m, 1H, C**H**), 1.37 (m, 2H, C**H$_2$**-CH$_2$-NH), 1.33-1.12 (m, 8H, CH-C**H$_2$** + (C**H$_2$**)$_3$), 0.86 (m, 9H, C**H$_3$**); **^{13}C NMR** (75 MHz, DMSO-d$_6$), δ (ppm): 175.40 (**C**=O amide), 53.18 (NH$_2$-**C**H), 44.59 (CH-**C**H$_2$), 38.18 (NH-**C**H$_2$), 30.95, 29.10, 25.99, 24.15, 23.13, 22.03, 21.92, 13.85.

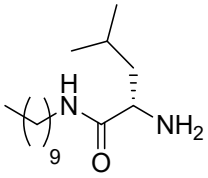
*N-2-ethylhexyl-L-leucinamide **(14b)***



88%; white solid; **^{1}H NMR** (300 MHz, DMSO-d$_6$), δ (ppm): 7.85 (t, *J* = 5.9 Hz, 1H, N**H**), 3.24 (dd, *J* = 8.3, 5.9 Hz, 1H, C**H**), 3.13-2.88 (m, 2H, NH-C**H$_2$**), 1.67 (m, 1H, C**H**), 1.47-1.12 (m, 11H, C**H**-C**H$_2$** +

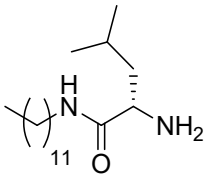
($C\mathbf{H_2}$)$_4$), 0.85 (m, 12H, $C\mathbf{H_3}$); **^{13}C NMR** (75 MHz, DMSO-d_6), δ (ppm): 174.24 (**C**=O amide), 52.77 (NH_2-**C**H), 43.81 (CH-**C**H_2), 41.16 + 41.13 (NH-**C**H_2 **R+S**), 38.85, 38.82, 30.33, 28.36, 28.28, 24.09, 23.62, 22.95, 22.47, 21.99, 13.91, 10.72, 10.67.

*N-decyl-L-leucinamide (**14c**)*



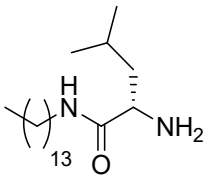
98%; white solid; **^{1}H NMR** (400 MHz, DMSO-d_6), δ (ppm): 7.78 (t, *J* = 5.8 Hz, 1H, N**H**), 3.15-2.92 (m, 3H, C**H**-NH_2 + NH-$C\mathbf{H_2}$), 1.67 (m, 1H, C**H**), 1.37 (m, 2H, $C\mathbf{H_2}$-CH_2-NH), 1.31-1.14 (m, 16H, CH-$C\mathbf{H_2}$ + ($C\mathbf{H_2}$)$_7$), 0.85 (m, 9H, $C\mathbf{H_3}$); **^{13}C NMR** (101 MHz, DMSO-d_6), δ (ppm): 174.91 (**C**=O amide), 53.03 (NH_2-**C**H), 44.27 (CH-**C**H_2), 38.23 (NH-**C**H_2), 31.31, 29.10, 29.01, 28.94, 28.73, 28.72, 28.70, 26.33, 24.14, 23.07, 22.10, 21.97, 13.94.

*N-dodecyl-L-leucinamide (**14d**)*



91%; white solid; **^{1}H NMR** (400 MHz, DMSO-d_6), δ (ppm): 7.81 (t, *J* = 5.8 Hz, 1H, N**H**), 3.17-2.94 (m, 3H, C**H** + NH-$C\mathbf{H_2}$), 1.67 (m, 1H, C**H**), 1.38 (m, 2H, $C\mathbf{H_2}$-CH_2-NH), 1.32-1.16 (m, 20H, CH-$C\mathbf{H_2}$ + ($C\mathbf{H_2}$)$_9$), 0.85 (m, 9H, $C\mathbf{H_3}$); **^{13}C NMR** (101 MHz, DMSO-d_6), δ (ppm): 175.08 (**C**=O amide), 53.08 (NH_2-**C**H), 44.40 (CH-**C**H_2), 38.18 (NH-**C**H_2), 31.29, 29.10, 29.05, 29.01, 28.99, 28.96, 28.72, 28.70, 26.32, 24.13, 23.08, 22.08, 21.93, 13.91.

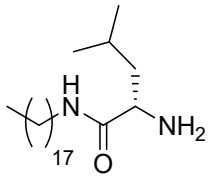
*N-tetradecyl-L-leucinamide (**14e**)*



72%; white solid; **^{1}H NMR** (300 MHz, DMSO-d_6), δ (ppm): 8.49 (t, *J* = 5.6 Hz, 1H, N**H**), 7.59 (s, 2H, N$\mathbf{H_2}$), 3.61 (t, *J* = 7.1 Hz, 1H, C**H**-NH), 3.08 (m, 2H, NH-$C\mathbf{H_2}$), 1.60 (m, 1H, C**H**), 1.50 (m, 2H, $C\mathbf{H_2}$-CH_2-NH), 1.41 (m, 2H, CH-$C\mathbf{H_2}$), 1.23 (m, 22H, ($C\mathbf{H_2}$)$_{11}$), 0.87 (m, 9H, $C\mathbf{H_3}$); **^{13}C NMR** (101 MHz, DMSO-d_6),

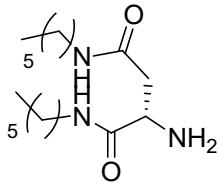
δ (ppm): 169.44 (**C**=O amide), 51.30 (NH_2-**C**H), 40.82 (CH-**C**H_2), 38.57 (NH-**C**H_2), 31.30, 29.06, 29.02, 29.00, 28.98, 28.78, 28.71, 26.32, 23.80, 22.44, 22.30, 22.10, 13.95.

*N-octadecyl-L-leucinamide **(14f)***



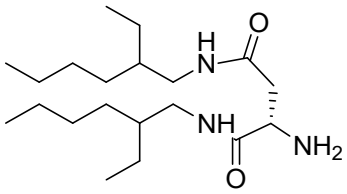
80%; white solid; **^{1}H NMR** (300 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 7.58 (t, *J* = 7.0 Hz, 1H, N**H**), 3.24-3.02 (m, 3H, C**H** + NH-C**H_2**), 1.70 (m, 1H, C**H**-$(CH_3)_2$), 1.61-1.35 (m, 4H, C**H_2**-CH_2-NH + CH-C**H_2**), 1.24 (m, 30H, $(CH_2)_{15}$), 0.89 (m, 9H, C**H_3**); **^{13}C NMR** (75 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 175.05 (**C**=O amide), 53.01 (NH_2-**C**H), 44.08 (CH-**C**H_2), 38.19 (NH-**C**H_2), 31.22, 29.05, 28.98, 28.92, 28.68, 28.64, 26.30, 24.08, 22.72, 22.00, 21.18, 13.46.

*N-dihexyl-L-aspartamide **(15a)***



76%; white solid; **^{1}H NMR** (400 MHz, DMSO-d_6), δ (ppm): 7.90 (q, *J* = 5.8 Hz, 2H, N**H**), 3.52 (dd, *J* = 8.8, 4.4 Hz, 1H, C**H**), 3.16-2.91 (m, 4H, NH-C**H_2**), 2.46-2.12 (m, 2H, CH-C**H_2**), 1.28 (m, 16H, $(CH_2)_4$), 0.85 (m, 6H, C**H_3**).

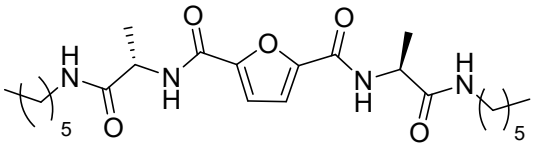
*N-bis(2-ethylhexyl)-L-aspartamide **(15b)***



49%; white solid; **^{1}H NMR** (300 MHz, DMSO-d_6), δ (ppm): 7.87 (t, J = 5.8 Hz, 1H, N**H**), 7.79 (t, J = 6.0 Hz, 1H, N**H**), 3.49 (dd, J = 9.0, 4.2 Hz, 1H, C**H**), 3.11-2.87 (m, 4H, NH-C**H_2**), 2.45-2.13 (m, 2H, NH-CH-C**H_2**), 1.48-1.09 (m, 18H, C**H**-C**H_2** + $(CH_2)_3$), 0.84 (m, 12H,C**H_3**).**^{13}C NMR** (75 MHz, DMSO-d_6), δ (ppm): 173.80 (**C**=O amide), 170.36 (**C**=O amide), 52.13 (NH_2-**C**H), 41.25 (NH-**C**H_2), 41.15 (NH-**C**H_2), 40.73, 38.79, 30.35, 30.30, 28.34, 28.31, 23.59, 23.54, 22.47, 13.92, 10.67.

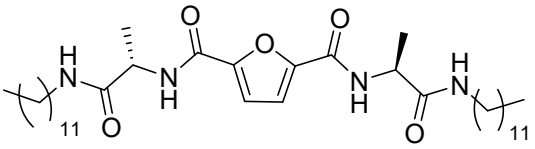
Di(amido-amides).

*N^2, N^5-bis(hexyl L-alaninamide)-furan-2,5-dicarboxamide (**16a**)*



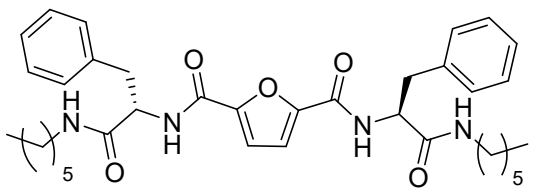
80%; white solid; **Tf:** 224°C;**^{1}H NMR** (300 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 8.38 (d, *J* = 8.0 Hz, 2H, N**H**), 7.77 (t, *J* = 5.8 Hz, 2H, N**H**), 7.10 (s, 2H, C**H** furan), 4.54 (p, *J* = 7.2 Hz, 2H, C**H**-NH), 3.09 (m, 4H, C**H_2**-NH), 1.43 (m, 4H, C**H_2**-CH_2-NH), 1.38 (d, *J* = 7.0 Hz, 6H, C**H_3**-CH-NH), 1.25 (m, 12H, CH_3-(C**H_2**)$_3$), 0.84 (t, 6H, C**H_3**-CH_2); **^{13}C NMR** (75 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 171.38 (**C**=O amide), 156.70 (**C**=O amide furan), 147.98 (**C**-C=O amide), 114.52 (**C**H furan), 48.09 (NH-**C**H), 38.62 (**C**H_2-NH), 30.88, 28.86, 25.94, 21.94, 17.98, 13.42; **HRMS (ESI, m/z):** 487.289 $[M + Na]^+$, 487.2891 calculated for $C_{24}H_{40}N_4O_5Na$.

*N^2, N^5-bis(dodecyl L-alaninamide)-furan-2,5-dicarboxamide (**16d**)*



17%; white solid; **Tf:** 202,3°C; **^{1}H NMR** (300 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 8.43 (d, *J* = 8.0 Hz, 2H, N**H**), 7.87 (t, *J* = 5.8 Hz, 2H, N**H**), 7.13 (s, 2H, C**H** furan), 4.52 (p, *J* = 7.3 Hz, 2H, C**H**-NH), 3.08 (m, 4H, C**H_2**-NH), 1.43 (m, 4H, C**H_2**-CH_2-NH), 1.37 (d, *J* = 7.1 Hz, 6H, C**H_3**-CH-NH), 1.24 (m, 36H, CH_3-(C**H_2**)$_9$), 0.85 (t, *J* = 6.5 Hz, 6H, C**H_3**-CH_2); **^{13}C NMR** (75 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 171.39 (**C**=O amide), 156.68 (**C**=O amide furan), 148.01 (**C**-C=O amide), 114.66 (**C**H furan), 48.10 (NH-**C**H), 38.55 (**C**H_2-NH), 31.24, 28.99, 28.94, 28.68, 28.65, 26.28, 22.02, 18.16, 13.66; **HRMS (ESI, m/z):** 655.477 $[M + Na]^+$, 655.4769 calculated for $C_{36}H_{64}N_4O_5Na$.

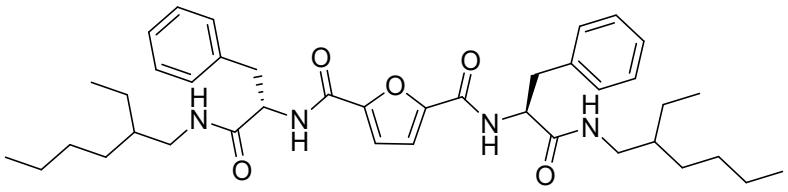
*N^2, N^5-bis(hexyl L-phenylalaninamide)-furan-2,5-dicarboxamide (**17a**)*



37%; white solid; **^{1}H NMR** (300 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 8.80 (d, *J* = 8.8 Hz, 2H, N**H**), 8.08 (t, *J* = 5.7 Hz, 2H, N**H**), 7.35-7.10 (m, 10H, Ar-**H**), 7.08 (s, 2H, C**H** furan), 4.69 (td, *J* = 8.9, 5.8 Hz, 2H, C**H**-NH), 3.18-2.96 (m, 8H, C**H_2**-NH + C**H_2**-Ph), 1.38 (p, *J* = 6.8 Hz, 4H, C**H_2**-CH_2-NH), 1.22 (m, 12H, CH_3-(C**H_2**)$_3$), 0.84 (t, 6H, C**H_3**-CH_2); **^{13}C NMR** (75 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 170.39

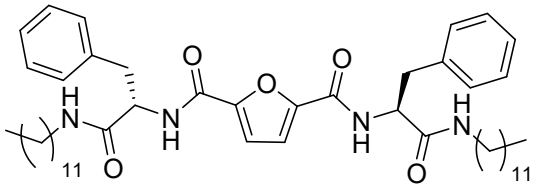
(**C**=O amide), 156.78 (**C**=O amide furan), 147.90 (**C**-C=O amide), 137.80 (**C(i)** Ph), 129.04 (**C**H**(m)** Ph), 127.88 (**C**H**(o)** Ph), 126.08 (**C**H**(p)** Ph), 114.64 (**C**H furan), 54.45 (NH-**C**H), 37.75 (**C**H_2-NH), 30.94, 28.83, 25.99, 21.99, 13.68; **HRMS (ESI, m/z):** 639.3516 $[M + Na]^+$, 639.3517 calculated for $C_{36}H_{48}N_4O_5Na$.

*N^2, N^5-bis(2-ethylhexyl L-phenylalaninamide)-furan-2,5-dicarboxamide **(17b)***



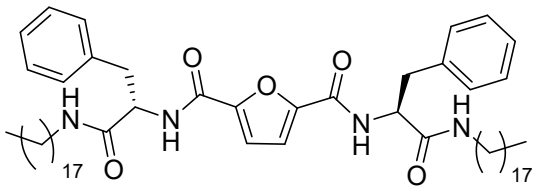
21%; white solid; **^{1}H NMR** (400 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 9.09 (d, *J* = 8.9 Hz, 2H, N**H**), 8.02 (t, *J* = 5.8 Hz, 2H, N**H**), 7.38-7.09 (m, 10H, Ar-**H**), 7.03 (s, 2H, C**H** furan), 4.74 (td, *J* = 9.0, 5.9 Hz, 2H, C**H**-NH), 3.19-2.95 (m, 8H, C**H$_2$**-NH + C**H$_2$**-Ph), 1.42 (p, *J* = 5.9 Hz, 2H, C**H**-CH_2-NH), 1.22 (m, 16H, C**H$_2$**-CH_3 + (C**H$_2$**)$_3$), 0.82 (t, *J* = 7.0 Hz, 12H, C**H$_3$**); **^{13}C NMR** (101 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 170.70 (**C**=O amide), 156.66 (**C**=O amide furan), 147.83 (**C**-C=O amide), 137.84 (**C(i)** Ph), 128.93 (**C**H**(m)** Ph), 127.72 (**C**H**(o)** Ph), 125.90 (**C**H**(p)** Ph), 114.38 (**C**H furan), 54.79 (NH-**C**H), 41.57, 38.64, 37.68, 30.27, 28.28, 28.22, 23.52, 22.39, 13.58, 10.39, 10.34; **HRMS (ESI, m/z):** 695.4143 $[M + Na]^+$, 695.4143 calculated for $C_{40}H_{56}N_4O_5Na$.

*N^2, N^5-bis(dodecyl L-phenylalaninamide)-furan-2,5-dicarboxamide **(17d)***



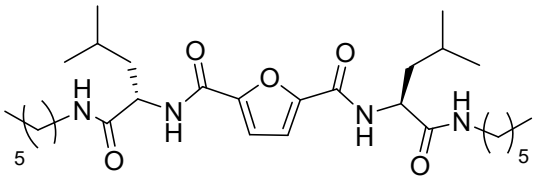
39%; white solid; **Tf:** 181,3°C; **^{1}H NMR** (300 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 8.57 (d, *J* = 8.6 Hz, 2H, N**H**), 8.01 (t, *J* = 5.7 Hz, 2H, N**H**), 7.35-7.11 (m, 10H, Ar-**H**), 7.09 (s, 2H, C**H** furan), 4.71 (td, *J* = 8.8, 5.7 Hz, 2H, C**H**-NH), 3.18-2.93 (m, 8H, C**H$_2$**-NH + C**H$_2$**-Ph), 1.36 (t, *J* = 6.8 Hz, 4H, C**H$_2$**-CH_2-NH), 1.22 (m, 36H, CH_3-(C**H$_2$**)$_9$), 0.85 (t, *J* = 6.5 Hz, 6H, C**H$_3$**-CH_2); **^{13}C NMR** (75 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 170.21 (**C**=O amide), 156.79 (**C**=O amide furan), 147.92 (**C**-C=O amide), 137.68 (**C(i)** Ph), 129.02 (**C**H**(m)** Ph), 127.87 (**C**H**(o)** Ph), 126.07 (**C**H**(p)** Ph), 114.64 (**C**H furan), 54.49 (NH-**C**H), 38.62 (**C**H_2-Ph), 37.84 (**C**H_2-NH), 31.27, 29.03, 28.99, 28.95, 28.88, 28.72, 28.69, 26.31, 22.06, 13.73; **HRMS (ESI, m/z):** 807.5397 $[M + Na]^+$, 807.5395 calculated for $C_{48}H_{72}N_4O_5Na$.

*N^2, N^5-bis(octadecyl L-phenylalaninamide)-furan-2,5-dicarboxamide **(17f)***



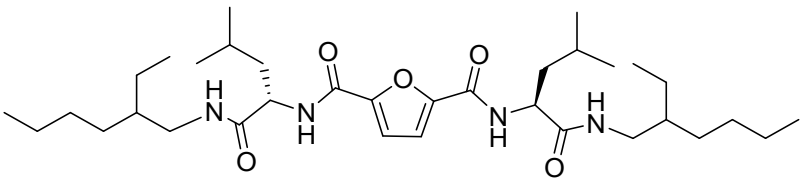
61%; white solid; **Tf:** 167,9°C; **^{1}H NMR** (300 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 8.60 (d, *J* = 8.7 Hz, 2H, N**H (S,S)**), 8.53 (d, *J* = 9.4 Hz, N**H (R,S)**), 7.88 (t, *J* = 5.7 Hz, 2H, N**H**),), 7.33-7.11 (m, 10H, Ar-**H**), 7.04 (s, 2H, C**H** furan **(S,S)**), 7.00 (s, C**H** furan **(R,S)**), 4.74 (td, *J* = 8.7, 6.0 Hz, 2H, C**H**-NH), 3.35-2.91 (m, 8H, C**H$_2$**-NH + C**H$_2$**-Ph), 1.36 (t, *J* = 6.8 Hz, 4H, C**H$_2$**-CH_2-NH), 1.42-1.21 (m, 64H, (C**H$_2$**)$_{16}$), 0.87 (t, 6H, C**H$_3$**-CH_2); **^{13}C NMR** (75 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 170.11 (**C**=O amide), 156.69 (**C**=O amide furan), 147.85 (**C**-C=O amide), 137.50 (**C(i)** Ph), 128.87 (**C**H**(m)** Ph), 127.66 (**C**H**(o)** Ph), 125.86 (**C**H**(p)** Ph), 114.38 (**C**H furan), 54.16 (NH-**C**H), 38.63 (**C**H_2-Ph), 37.82 (**C**H_2-NH), 31.23, 28.99, 28.95, 28.92, 28.81, 28.69, 28.65, 26.30, 22.01, 13.50; **HRMS (ESI, m/z):** 975.7275 $[M + Na]^+$, 975.7273 calculated for $C_{60}H_{96}N_4O_5Na$.

*N^2, N^5-bis(hexyl L-leucinamide)-furan-2,5-dicarboxamide (**18a**)*



52%; white solid; **Tf:** 199,4°C; **^{1}H NMR** (300 MHz, DMSO-d_6), δ (ppm): 8.45 (d, *J* = 8.7 Hz, 2H, N**H**), 8.08 (t, *J* = 5.6 Hz, 2H, N**H**), 7.21 (s, 2H, C**H** furan), 4.53 (td, *J* = 13.9, 6.9 Hz, 2H, C**H**-NH), 3.05 (m, 4H, C**H$_2$**-NH), 1.60 (m, 6H, C**H$_2$**-C**H**-$(CH_3)_2$), 1.39 (p, *J* = 7.0 Hz, 4H, C**H$_2$**-CH_2-NH), 1.24 (m, 12H, (C**H$_2$**)$_3$), 0.87 (m, 18H, C**H$_3$**); **^{13}C NMR** (101 MHz, DMSO-d_6), δ (ppm): 171.20 (**C**=O amide), 156.92 (**C**=O amide furan), 148.06 (**C**-C=O amide), 115.07 (**C**H furan), 50.95 (NH-**C**H), 40.99 (NH-CH-**C**H_2), 38.50 (**C**H_2-NH), 30.90, 28.90, 25.93, 24.40, 22.88, 22.02, 21.64, 13.83; **HRMS (ESI, m/z):** 571.3831 $[M + Na]^+$, 571.3830 calculated for $C_{30}H_{52}N_4O_5Na$.

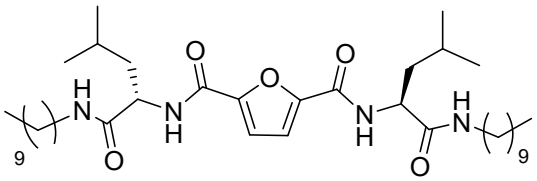
*N^2, N^5-bis(2-ethylhexyl L-leucinamide)-furan-2,5-dicarboxamide (**18b**)*



46%; white solid; **Tf:** 182,3°C; **^{1}H NMR** (400 MHz, DMSO-d_6), δ (ppm): 8.44 (d, *J* = 8.7 Hz, 2H, N**H**), 8.01 (t, *J* = 5.8 Hz, 2H, N**H**), 7.21 (s, 2H, C**H** furan), 4.57 (td, *J* = 9.0, 4.4 Hz, 2H, C**H**-NH), 3.16-2.85 (m,

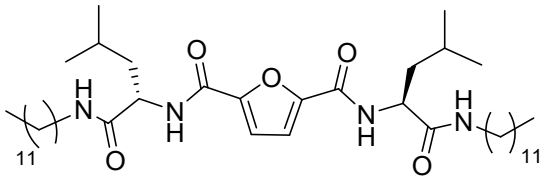
4H, C**H$_2$**-NH), 1.61 (m, 6H, C**H$_2$**-C**H**-(CH$_3$)$_2$), 1.38 (p, *J* = 6.1 Hz, 2H, C**H**-CH$_2$-NH), 1.22 (m, 16H, C**H$_2$**-CH$_3$ + (C**H$_2$**)$_3$), 0.86 (m, 24H, C**H$_3$**); **^{13}C NMR** (101 MHz, DMSO-d$_6$), δ (ppm): 171.40 (**C**=O amide), 156.88 (**C**=O amide furan), 148.08 (**C**-C=O amide), 115.06 (**C**H furan), 50.98 (NH-**C**H), 41.40 + 41.36 (**C**H$_2$-NH), 41.05 (NH-CH-**C**H$_2$), 38.79 + 38.76 (**C**H-CH$_2$-NH, **R** + **S**), 30.28, 28.35 + 28.24 (C**H$_2$** ethyl, **R** + **S**), 24.41, 23.65, 23.60, 22.85, 22.46, 21.70, 13.87, 10.77 + 10.64 (C**H$_3$** ethyl, **R** + **S**); **HRMS (ESI, m/z):** 627.4455 [M + Na]$^+$, 627.4456 calculated for $C_{34}H_{60}N_4O_5Na$.

*N^2, N^5-bis(decyl L-leucinamide)-furan-2,5-dicarboxamide (**18c**)*



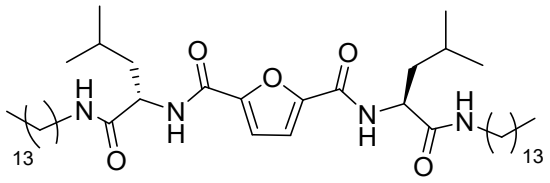
36%; white solid; **Tf:** 175,4°C; **^{1}H NMR** (300 MHz, DMSO-d$_6$), δ (ppm): 8.44 (d, *J* = 8.7 Hz, 2H, N**H**), 8.08 (t, *J* = 5.6 Hz, 2H, N**H**), 7.20 (s, 2H, C**H** furan), 4.52 (m, 2H, C**H**-NH), 3.03 (m, 4H, C**H$_2$**-NH), 1.61 (m, 6H, C**H$_2$**-C**H**-(CH$_3$)$_2$), 1.39 (p, *J* = 6.8 Hz, 4H, C**H$_2$**-CH$_2$-NH), 1.22 (m, 28H, (C**H$_2$**)$_7$), 0.88 (m, 18H, C**H$_3$**); **^{13}C NMR** (101 MHz, DMSO-d$_6$), δ (ppm): 171.20 (**C**=O amide), 156.89 (**C**=O amide furan), 148.05 (**C**-C=O amide), 115.03 (**C**H furan), 51.01 (NH-**C**H), 41.00 (NH-CH-**C**H$_2$), 38.46 (**C**H$_2$-NH), 31.26, 28.96, 28.89, 28.67, 28.65, 26.23, 24.38, 22.85, 22.06, 21.64, 13.91; **HRMS (ESI, m/z):** 683.5082 [M + Na]$^+$, 683.5082 calculated for $C_{38}H_{68}N_4O_5Na$.

*N^2, N^5-bis(dodecyl L-leucinamide)-furan-2,5-dicarboxamide (**18d**)*



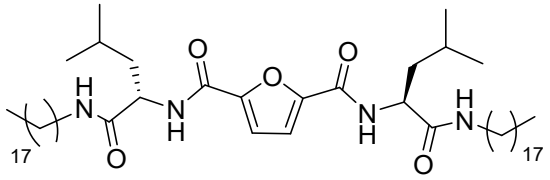
57%; white solid; **Tf:** 156,5°C; **^{1}H NMR** (400 MHz, DMSO-d$_6$), δ (ppm): 8.54 (d, *J* = 8.8 Hz, 2H, N**H**), 8.10 (t, *J* = 5.6 Hz, 2H, N**H**), 7.19 (s, 2H, C**H** furan), 4.51 (td, *J* = 9.2, 4.8 Hz, 2H, C**H**-NH), 3.03 (m, 4H, C**H$_2$**-NH), 1.62 (m, 6H, C**H$_2$**-C**H**-(CH$_3$)$_2$), 1.38 (p, *J* = 6.7 Hz, 4H, C**H$_2$**-CH$_2$-NH), 1.22 (m, 36H, (C**H$_2$**)$_9$), 0.87 (m, 18H, C**H$_3$**); **^{13}C NMR** (101 MHz, DMSO-d$_6$), δ (ppm): 171.24 (**C**=O amide), 156.87 (**C**=O amide furan), 148.05 (**C**-C=O amide), 115.01 (**C**H furan), 51.13 (NH-**C**H), 40.99 (NH-CH-**C**H$_2$), 38.46 (**C**H$_2$-NH), 31.28, 29.03, 28.99, 28.96, 28.94, 28.88, 28.69, 28.66, 26.24, 24.39, 22.85, 22.08, 21.62, 13.92; **HRMS (ESI, m/z):** 739.571 [M + Na]$^+$, 739.5708 calculated for $C_{42}H_{76}N_4O_5Na$.

*N^2, N^5-bis(tetradecyl L-leucinamide)-furan-2,5-dicarboxamide (**18e**)*



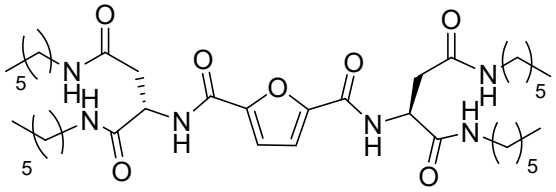
46%; white solid; **Tf:** 168,8°C; **^{1}H NMR** (300 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 8.72 (d, *J* = 8.9 Hz, 2H, N**H**), 8.04 (t, *J* = 5.6 Hz, 2H, N**H**), 7.12 (s, 2H, C**H** furan), 4.55 (td, *J* = 9.3, 4.8 Hz, 2H, C**H**-NH), 3.07 (m, 4H, C**H$_2$**-NH), 1.66 (m, 6H, C**H$_2$**-C**H**-$(CH_3)_2$), 1.42 (p, *J* = 6.8 Hz, 4H, C**H$_2$**-CH_2-NH), 1.22 (m, 44H, $(CH_2)_{11}$), 0.88 (m, 18H, C**H$_3$**); **^{13}C NMR** (75 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 171.31 (**C**=O amide), 156.76 (**C**=O amide furan), 148.00 (**C**-C=O amide), 114.59 (**C**H furan), 51.35 (NH-**C**H), 41.00 (NH-CH-**C**H_2), 38.52 (**C**H_2-NH), 31.23, 28.99, 28.95, 28.92, 28.81, 28.65, 26.28, 24.28, 22.57, 22.02, 21.41, 13.63; **HRMS (ESI, m/z):** 795.6335 $[M + Na]^+$, 795.6334 calculated for $C_{46}H_{84}N_4O_5Na$.

*N^2, N^5-bis(octadecyl L-leucinamide)-furan-2,5-dicarboxamide **(18f)***



67%; white solid; **Tf:** 163,6°C; **^{1}H NMR** (300 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 8.30 (d, *J* = 8.8 Hz, 2H, N**H**), 7.72 (t, *J* = 5.7 Hz, 2H, N**H**), 7.10 (s, 2H, C**H** furan), 4.60 (q, *J* = 7.5 Hz, 2H, C**H**-NH), 3.12 (m, 4H, C**H$_2$**-NH), 1.65 (m, 6H, C**H$_2$**-C**H**-$(CH_3)_2$), 1.44 (p, *J* = 6.5 Hz, 4H, C**H$_2$**-CH_2-NH), 1.24 (m, 64H, $(CH_2)_{16}$), 0.89 (m, 18H, C**H$_3$**); **^{13}C NMR** (75 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 171.11 (**C**=O amide), 156.83 (**C**=O amide furan), 147.97 (**C**-C=O amide), 114.51 (**C**H furan), 50.91 (NH-**C**H), 40.96 (NH-CH-**C**H_2), 38.59 (**C**H_2-NH), 31.24, 29.00, 28.95, 28.93, 28.84, 28.66, 26.29, 24.23, 22.37, 22.01, 21.35, 13.44; **HRMS (ESI, m/z):** 907.7589 $[M + Na]^+$, 907.7586 calculated for $C_{54}H_{100}N_4O_5Na$.

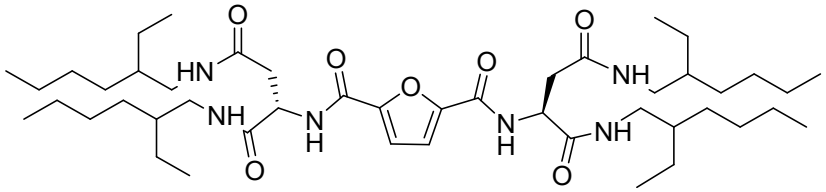
*N^2, N^5-bis(dihexyl L-aspartamide)-furan-2,5-dicarboxamide **(19a)***



27%; white solid; **^{1}H NMR** (300 MHz, DMSO-d_6, 373K), δ (ppm): 8.46 (d, *J* = 8.2 Hz, 2H, N**H**), 7.86 (t, *J* = 5.7 Hz, 2H, N**H**), 7.76 (t, *J* = 5.6 Hz, 2H, N**H**), 7.18 (s, 2H, C**H** furan), 4.72 (td, *J* = 8.0, 5.9 Hz, 2H, C**H**-NH), 3.02 (m, 8H, C**H$_2$**-NH), 2.59 (m, 2H, C**H$_2$**-C=O), 1.46-1.10 (m, 32H, $(CH_2)_4$), 0.83 (m, 12H, C**H$_3$**); **^{13}C NMR** (101 MHz, CD_2Cl_2-d_2 / DMSO-d_6), δ (ppm): 169.84 (**C**=O amide), 169.26 (**C**=O amide),

156.76 (**C**=O amide furan), 147.97 (**C**-C=O amide), 114.47 (**C**H furan), 49.86 (NH-**C**H), 38.77 (**C**H_2-NH), 38.65 (**C**H_2-NH), 37.69, 30.91, 30.88, 28.90, 28.83, 26.00, 25.92, 21.93, 13.40; **HRMS (ESI, m/z):** 741.4886 $[M + Na]^+$, 741.4885 calculated for $C_{38}H_{66}N_6O_7Na$.

*N^2, N^5-bis(bis(2-ethylhexyl) L-aspartamide)-furan-2,5-dicarboxamide **(19b)***



18%; white solid; **Tf:** 172,8-200,6°C; **^{1}H NMR** (300 MHz, DMSO-d_6), δ (ppm): 8.50 (d, *J* = 8.2 Hz, 2H, N**H**), 7.87 (t, *J* = 5.2 Hz, 2H, N**H**), 7.73 (t, *J* = 4.7 Hz, 2H, N**H**), 7.19 (s, 2H, C**H** furan), 4.75 (q, *J* = 7.3 Hz, 2H, C**H**-NH), 2.97 (m, 8H, C**H_2**-NH), 2.59 (d, *J* = 6.9 Hz, 4H, C**H_2**-C=O), 1.46-1.01 (m, 36H, C**H_2**-C**H**-(C**H_2**)$_3$), 0.81 (m, 24H, C**H_3**); **^{13}C NMR** (101 MHz, DMSO-d_6), δ (ppm): 170.32 (**C**=O amide), 169.14 (**C**=O amide), 157.85 (**C**=O amide furan), 148.17 (**C**-C=O amide), 114.80 (**C**H furan), 50.11 (NH-**C**H), 41.56 (**C**H_2-NH), 41.42 (**C**H_2-NH), 38.76 + 38.74 (**C**H-CH_2-NH, **R** + **S**), 38.70, 37.73, 28.32 + 28.27 (C**H_2** ethyl, **R** + **S**), 23.50, 23.48, 23.43, 22.47, 22.44, 13.92, 10.68, 10.62 + 10.60 (C**H_3** ethyl, **R** + **S**), 10.55; **HRMS (ESI, m/z):** 853.6168 $[M + Na]^+$, 853.6137 calculated for $C_{46}H_{82}N_6O_7Na$.

Analyses.

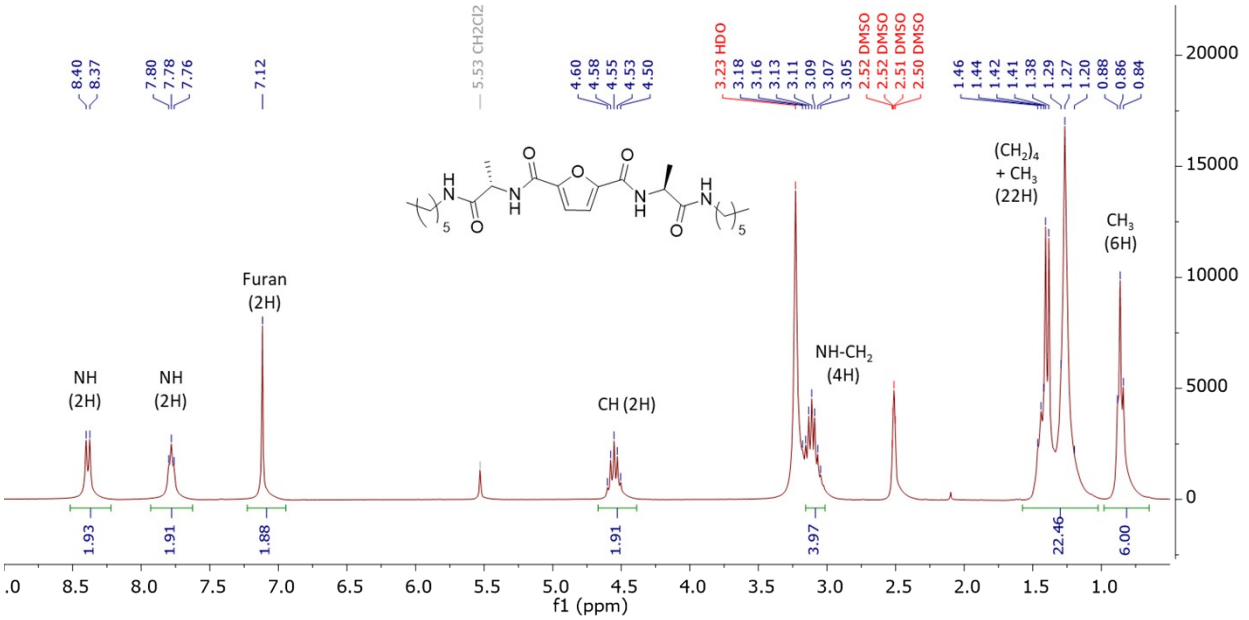


Figure S1. ^{1}H NMR spectrum of compound 16a in CD_2Cl_2/DMSO-D_6

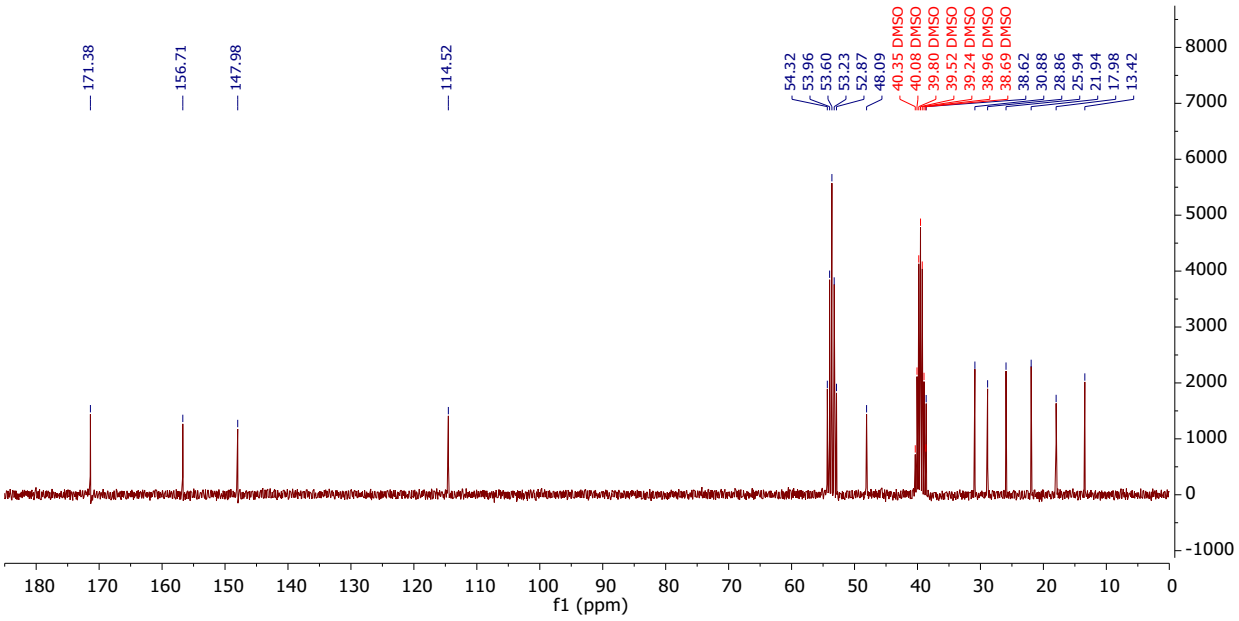


Figure S2. ^{13}C NMR spectrum of compound 16a in CD_2Cl_2/DMSO-D_6

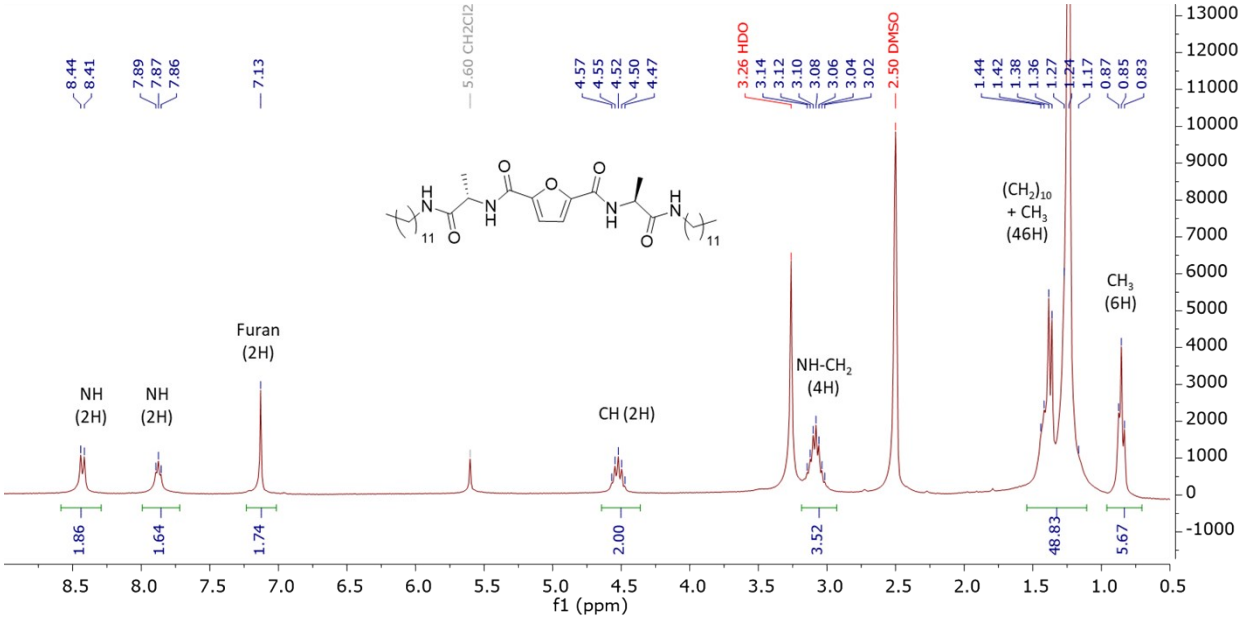


Figure S3. ^{1}H NMR spectrum of compound 16d in CD_2Cl_2/DMSO-D_6

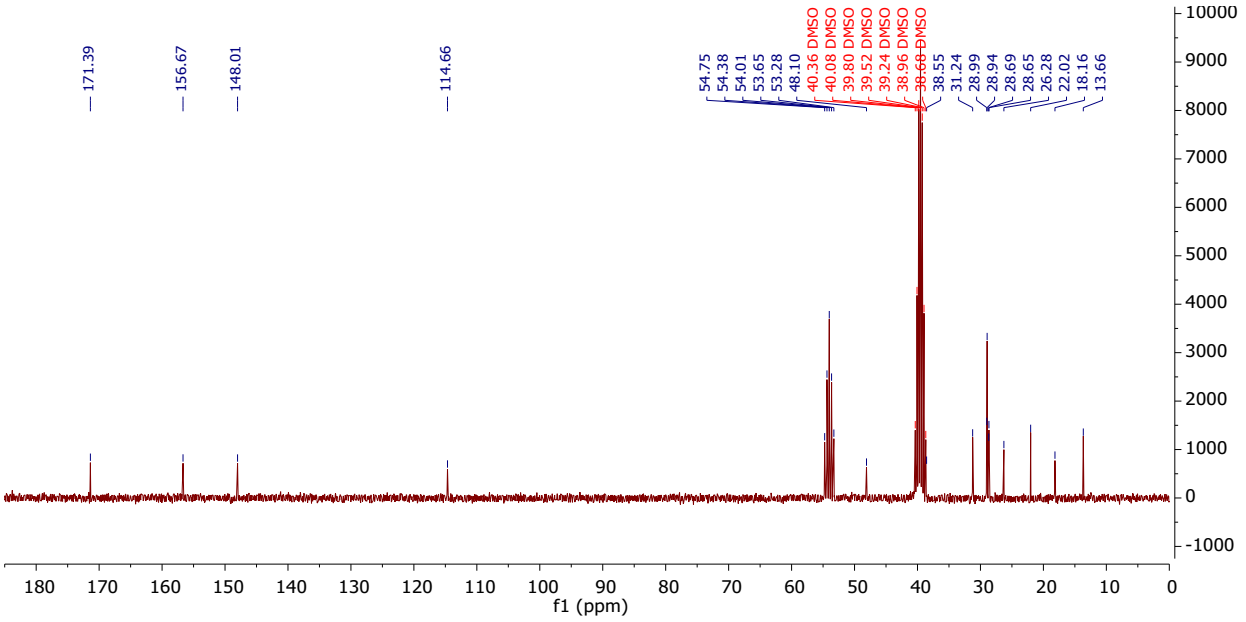


Figure S4. ^{13}C NMR spectrum of compound 16d in CD_2Cl_2/DMSO-D_6

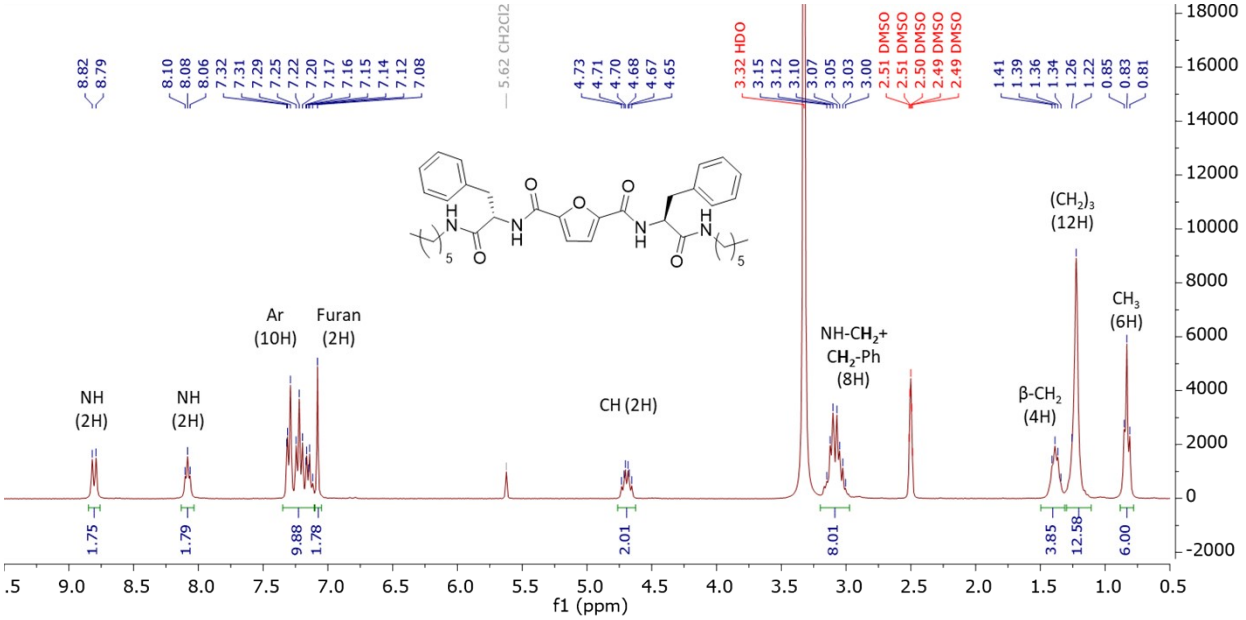


Figure S5. ^{1}H NMR spectrum of compound 17a in CD_2Cl_2/DMSO-D_6

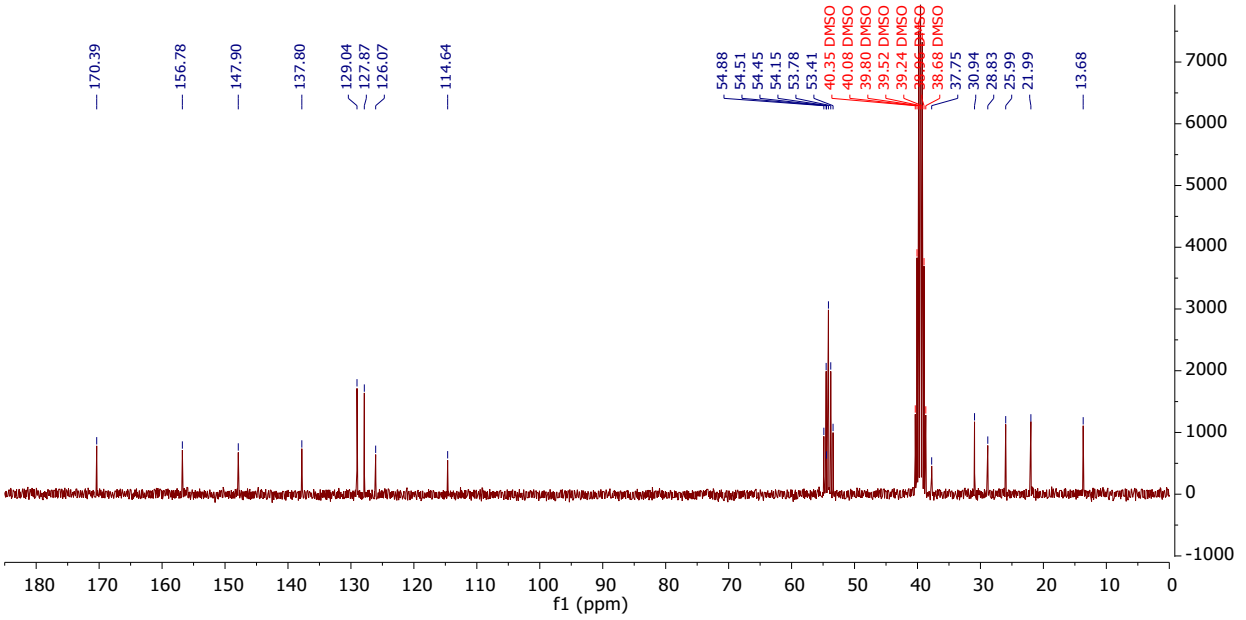


Figure S6. ^{13}C NMR spectrum of compound 17a in CD_2Cl_2/DMSO-D_6

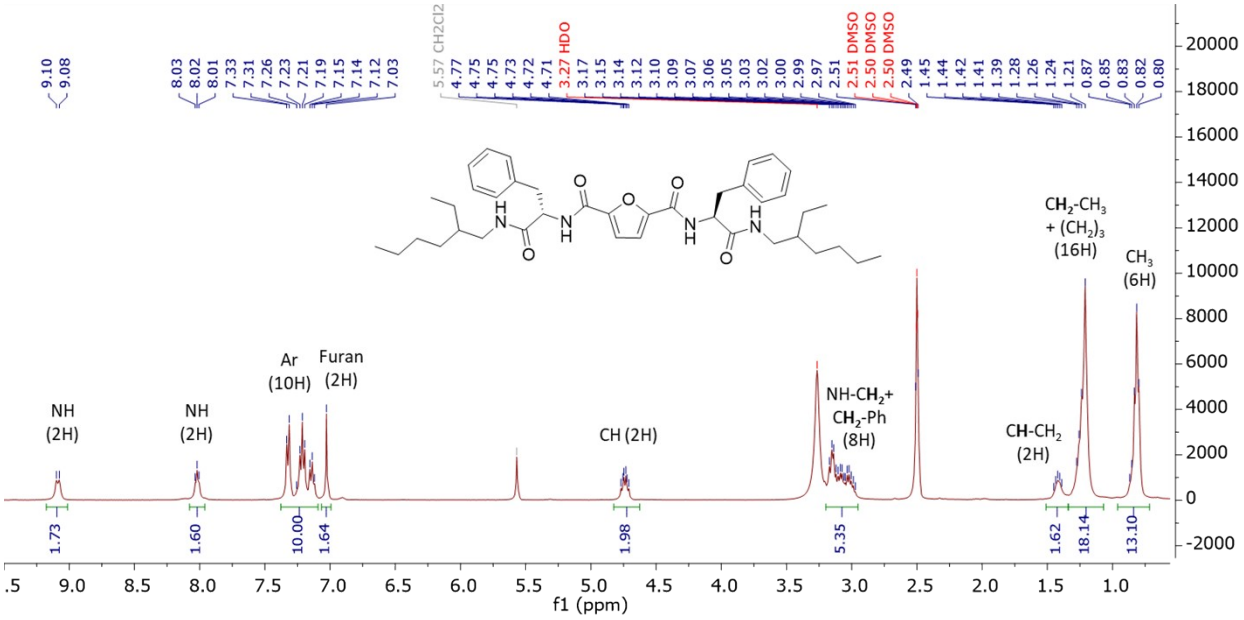


Figure S7. ^{1}H NMR spectrum of compound 17b in CD_2Cl_2/DMSO-D_6

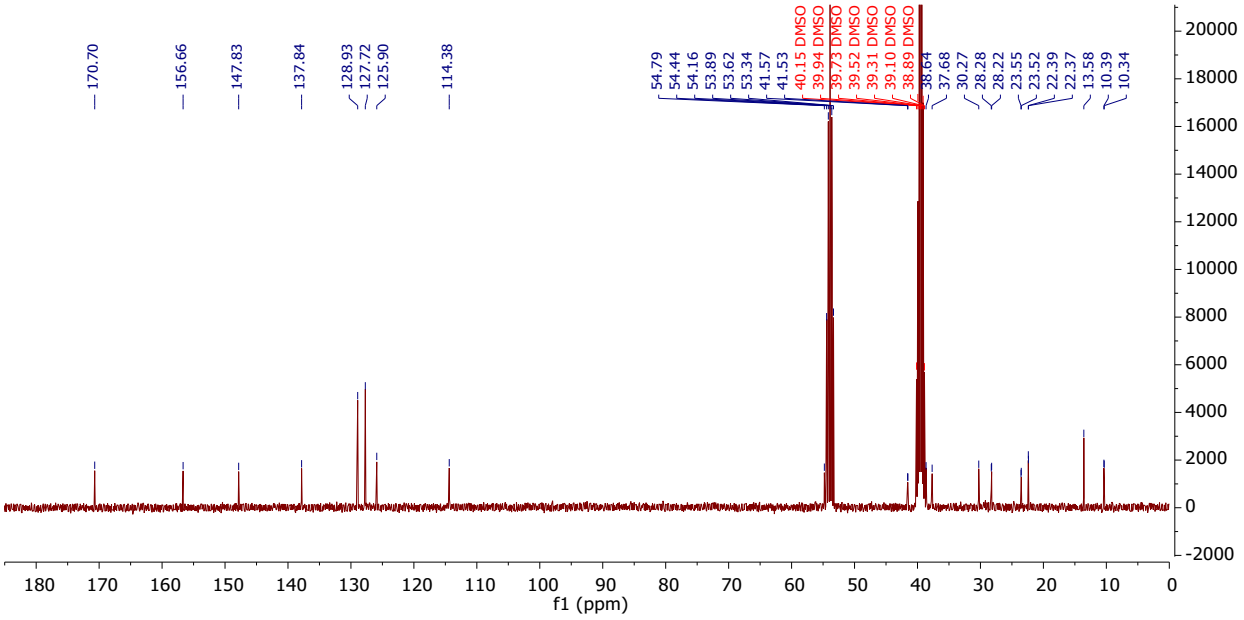


Figure S8. ^{13}C NMR spectrum of compound 17b in CD_2Cl_2/DMSO-D_6

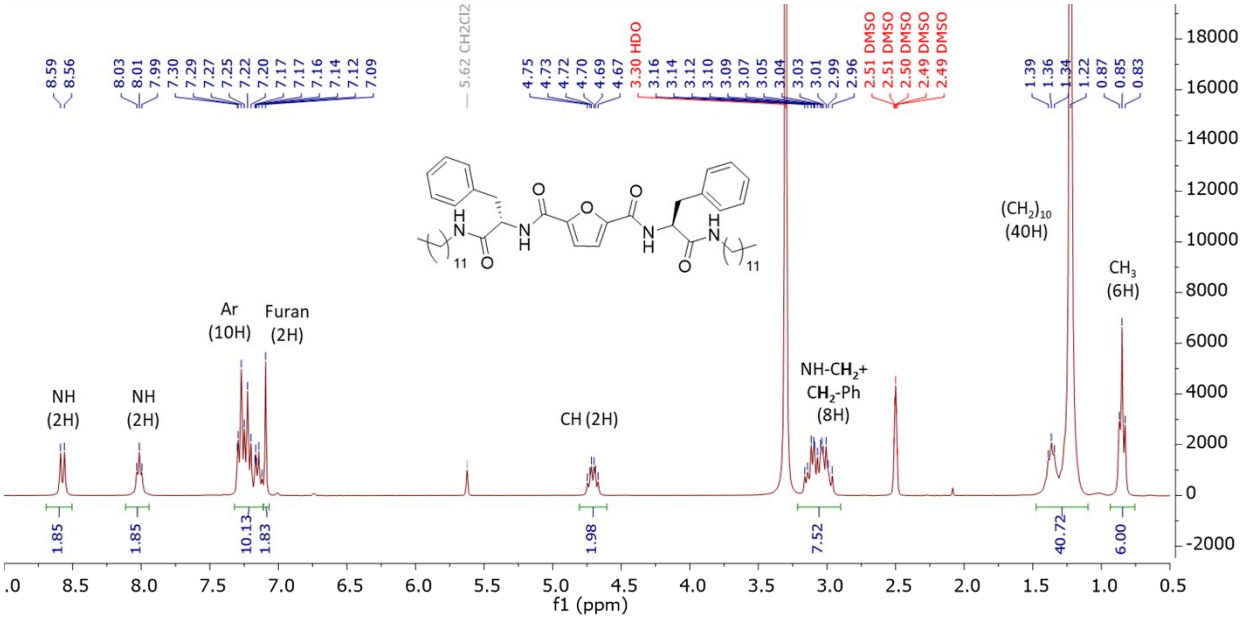


Figure S9. ^{1}H NMR spectrum of compound 17d in CD_2Cl_2/DMSO-D_6

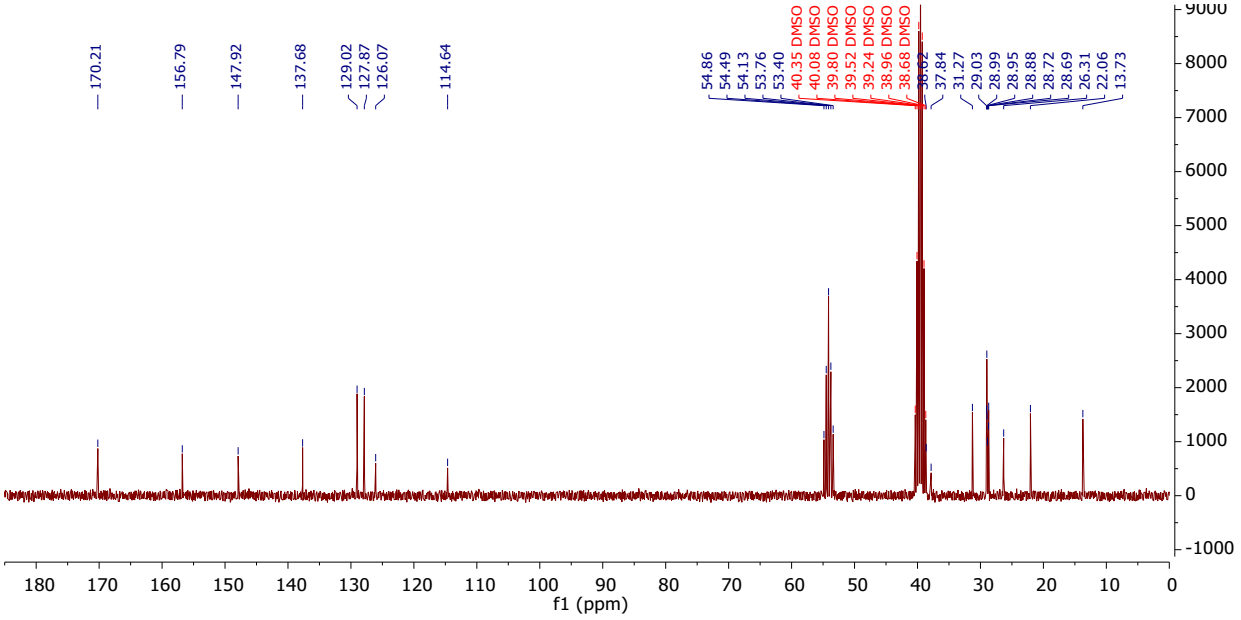


Figure S10. ^{13}C NMR spectrum of compound 17d in CD_2Cl_2/DMSO-D_6

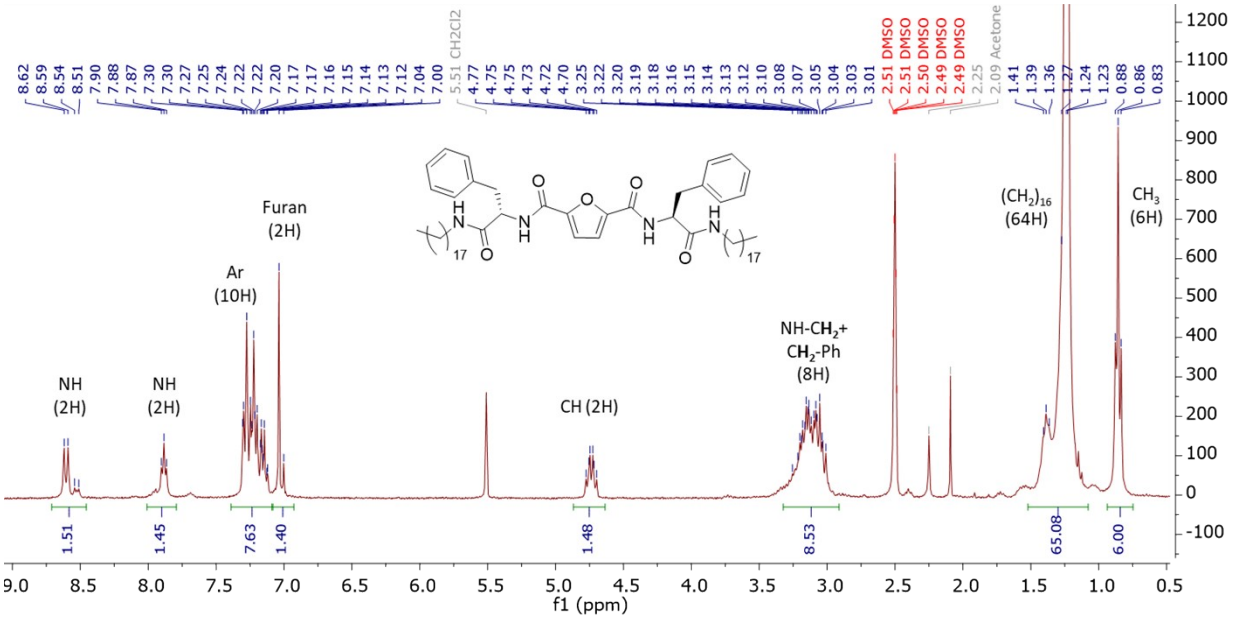


Figure S11. ^{1}H NMR spectrum of compound 17f in CD_2Cl_2/DMSO-D_6

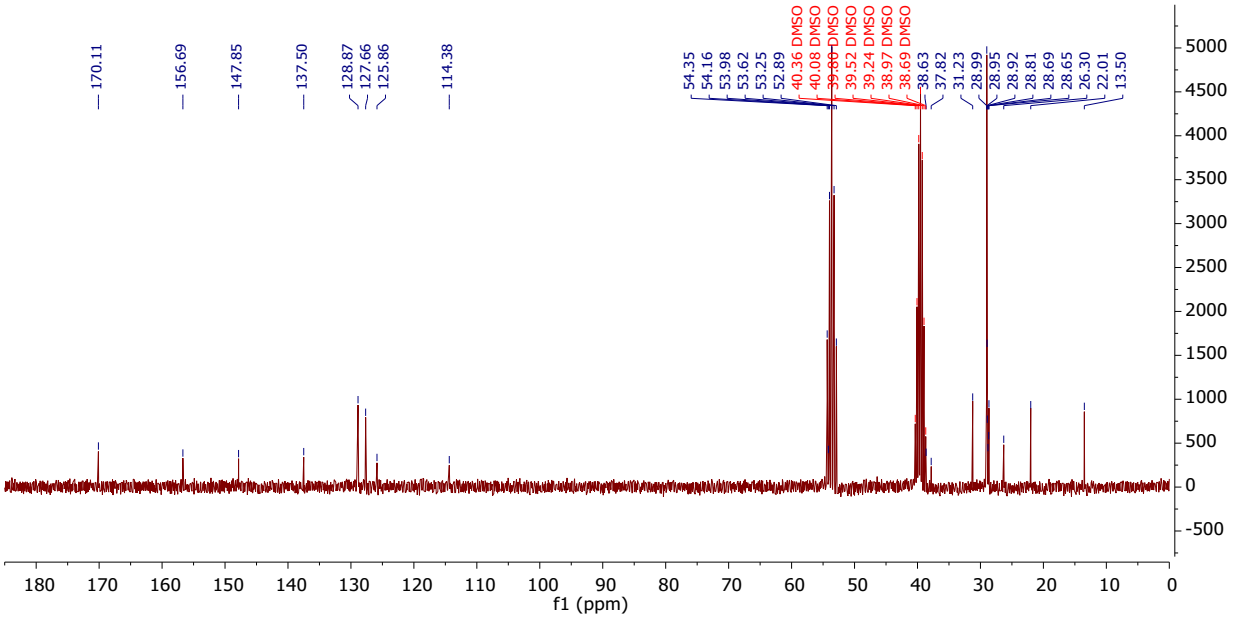


Figure S12. ^{13}C NMR spectrum of compound 17f in CD_2Cl_2/DMSO-D_6

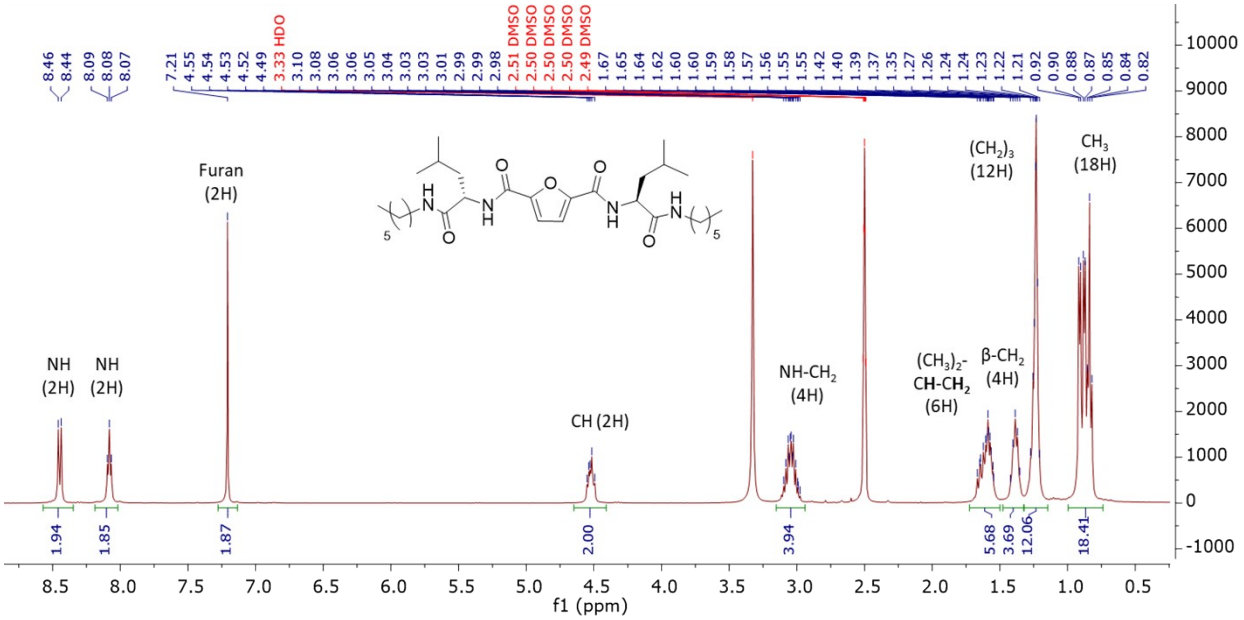


Figure S13. ^{1}H NMR spectrum of compound 18a in DMSO-D$_6$

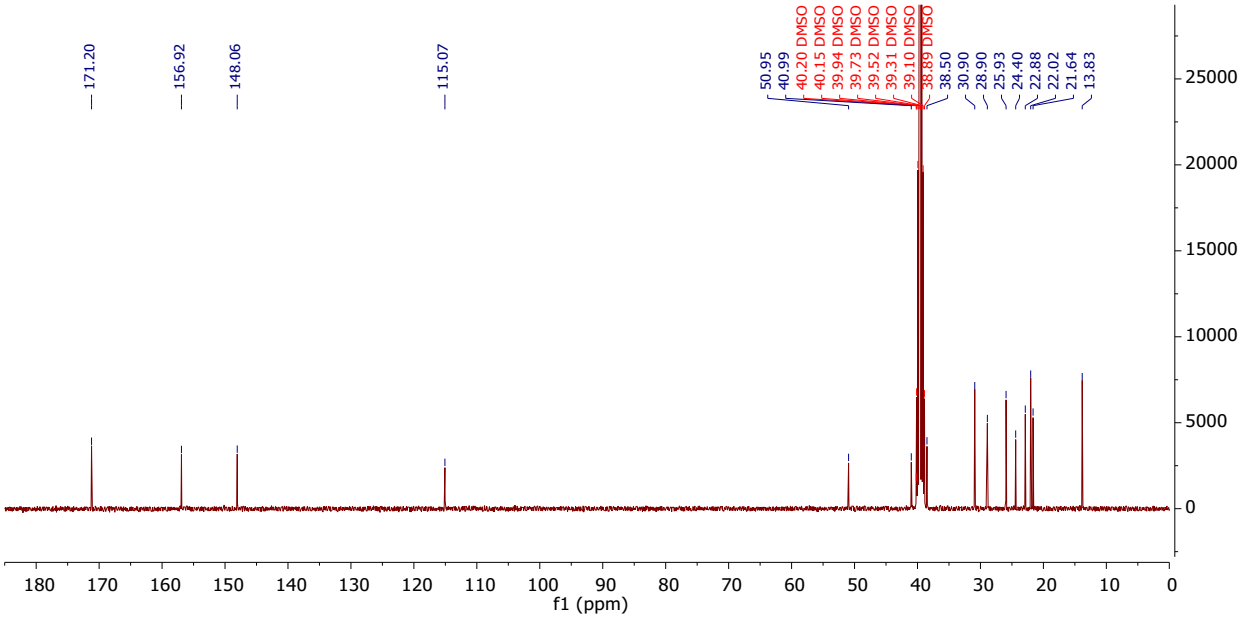


Figure S14. ^{13}C NMR spectrum of compound 18a in DMSO-D$_6$

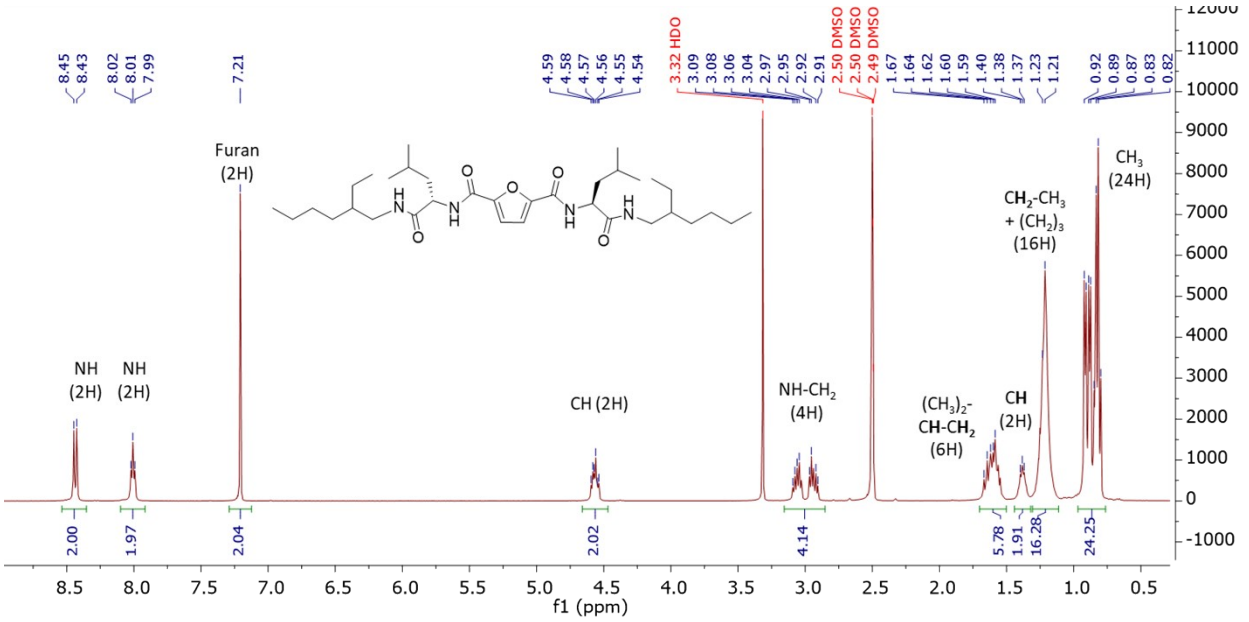


Figure S15. ^{1}H NMR spectrum of compound 18b in DMSO-D$_6$

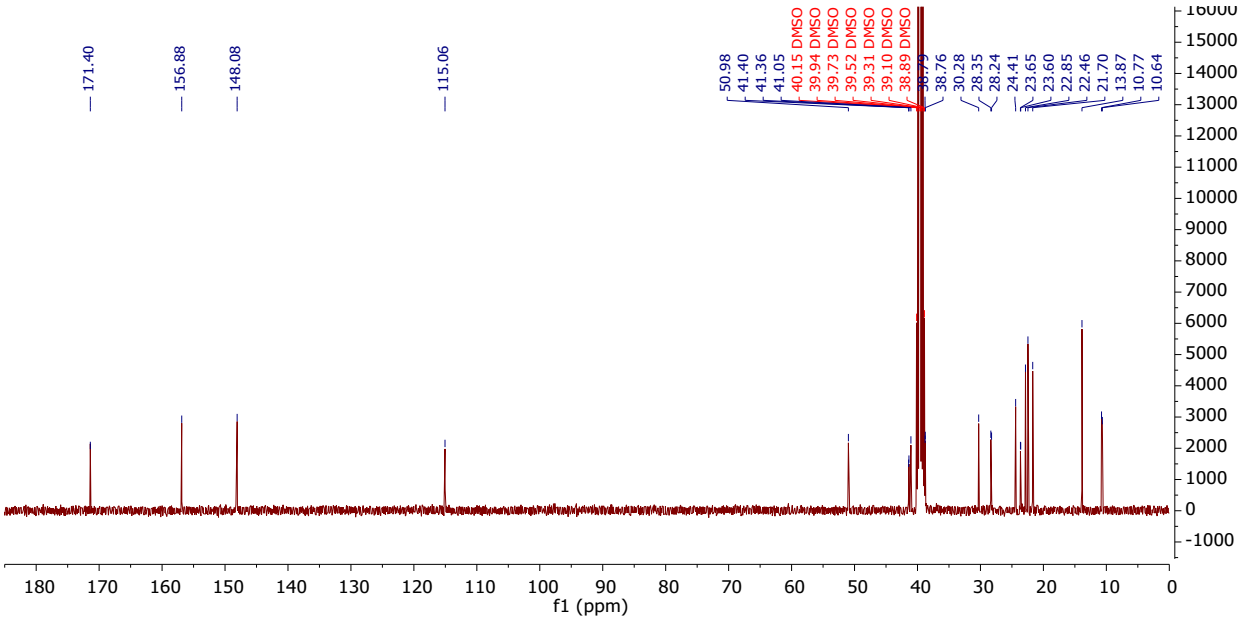


Figure S16. ^{13}C NMR spectrum of compound 18b in DMSO-D$_6$

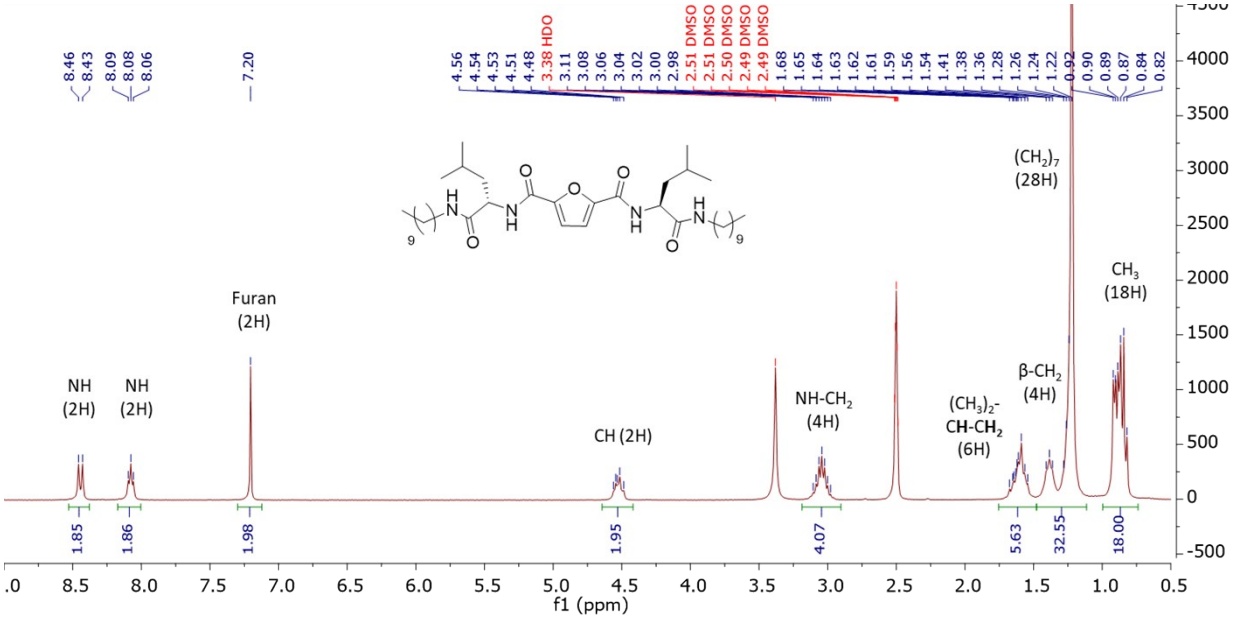


Figure S17. ^{1}H NMR spectrum of compound 18c in DMSO-D$_6$

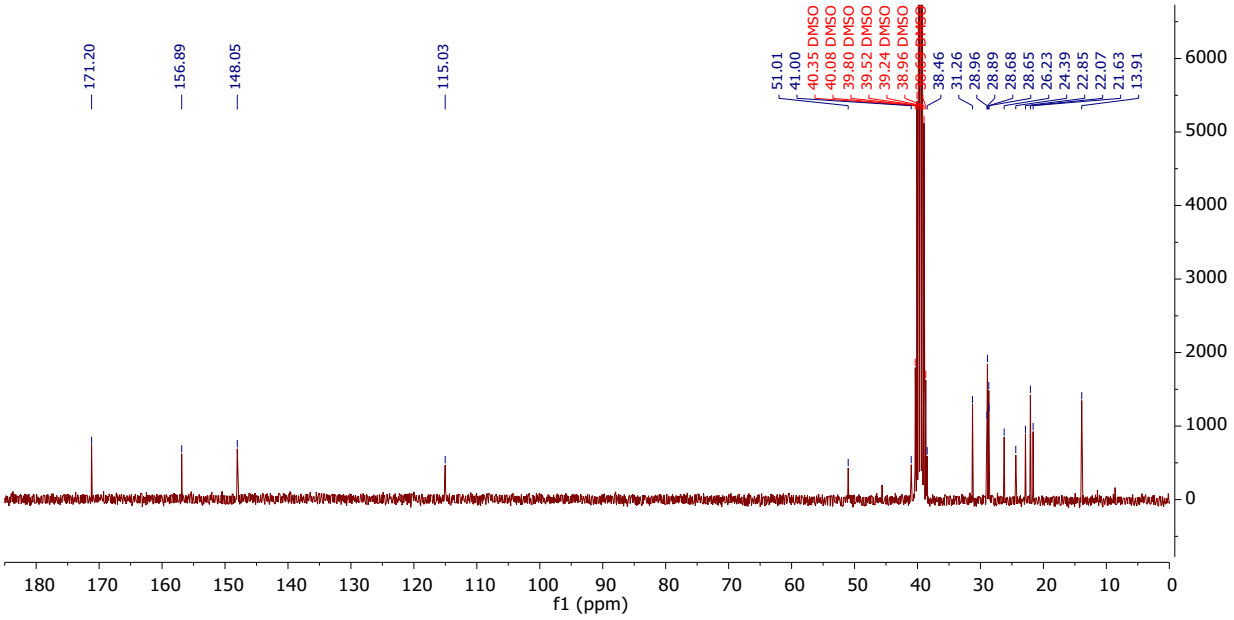


Figure S18. ^{13}C NMR spectrum of compound 18c in DMSO-D$_6$

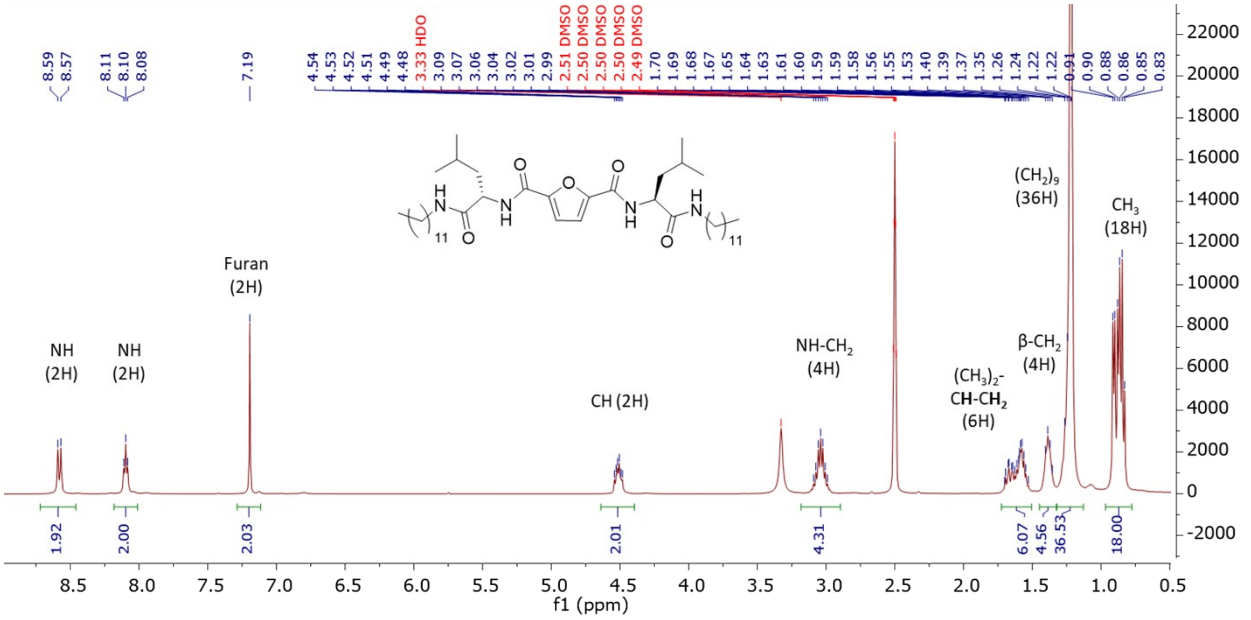


Figure S19. ^{1}H NMR spectrum of compound 18d in DMSO-D$_6$

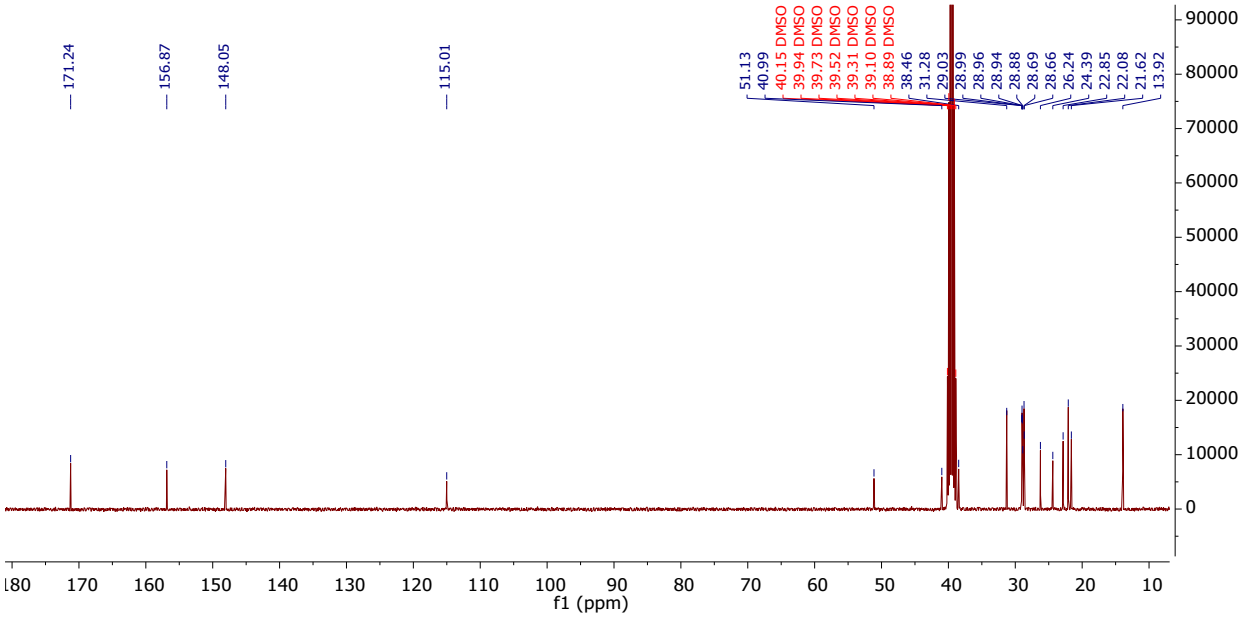


Figure S20. ^{13}C NMR spectrum of compound 18d in DMSO-D$_6$

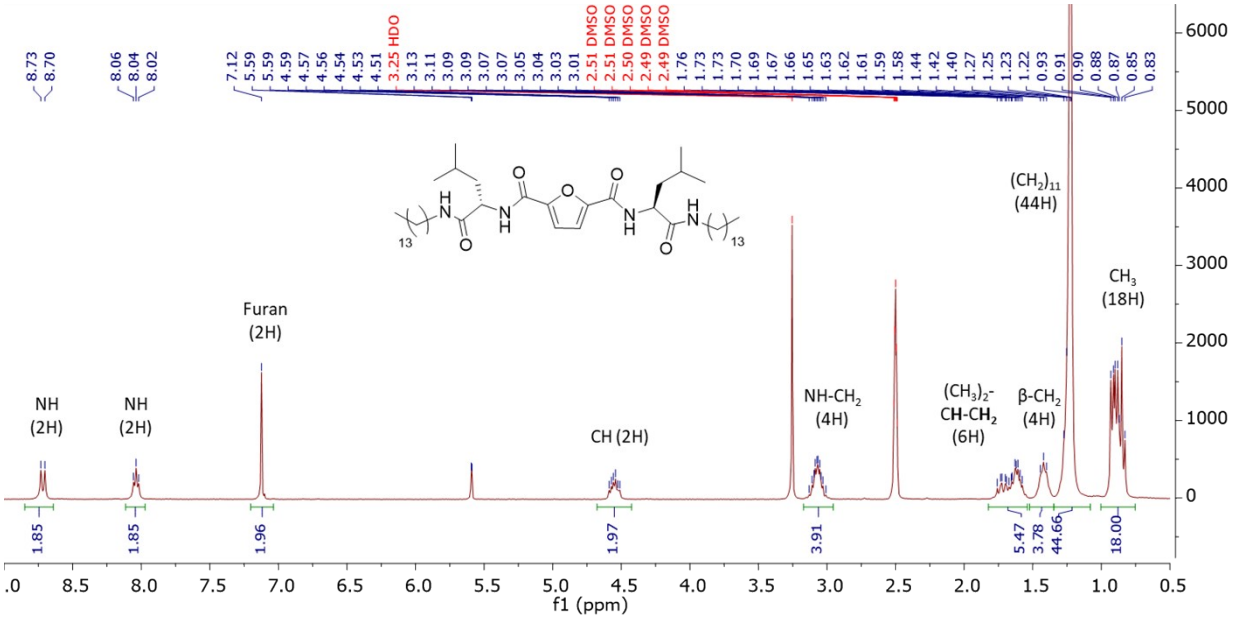


Figure S21. ^{1}H NMR spectrum of compound 18e in CD_2Cl_2/DMSO-D_6

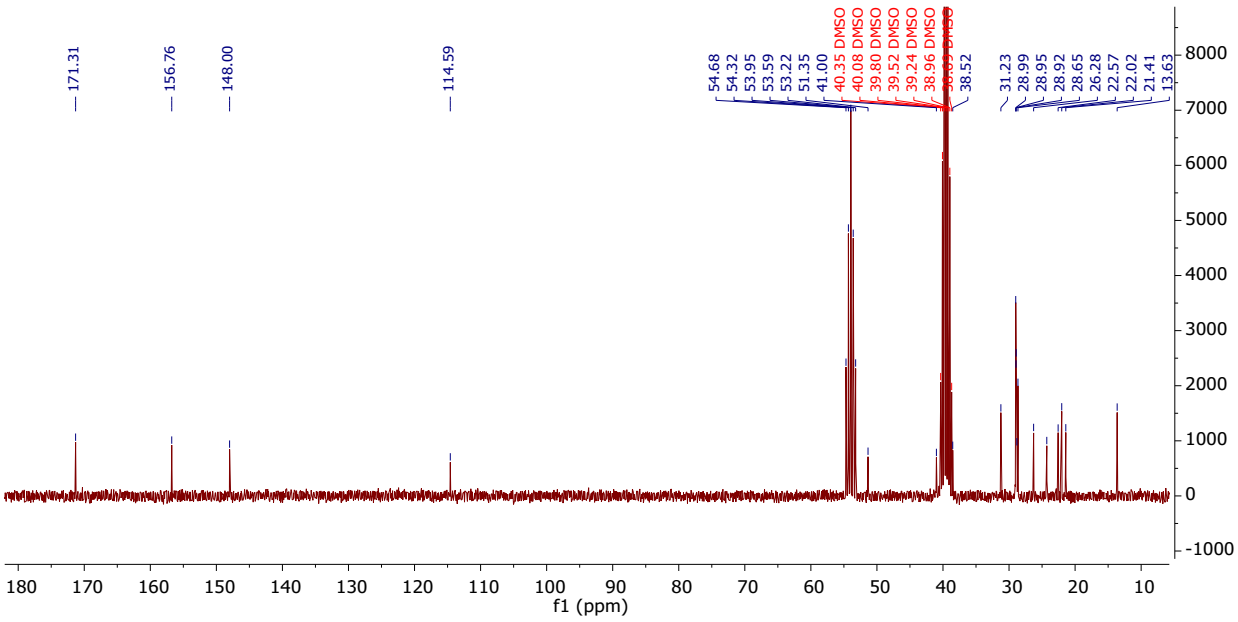


Figure S22. ^{13}C NMR spectrum of compound 18e in CD_2Cl_2/DMSO-D_6

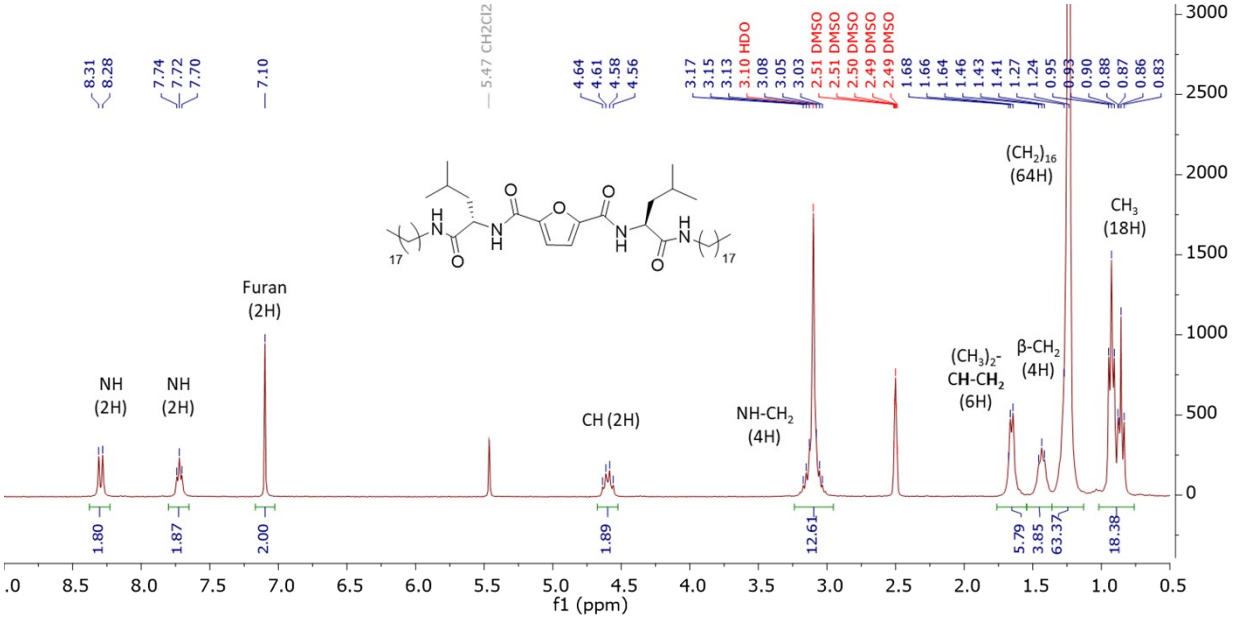


Figure S23. ^{1}H NMR spectrum of compound 18f in CD_2Cl_2/DMSO-D_6

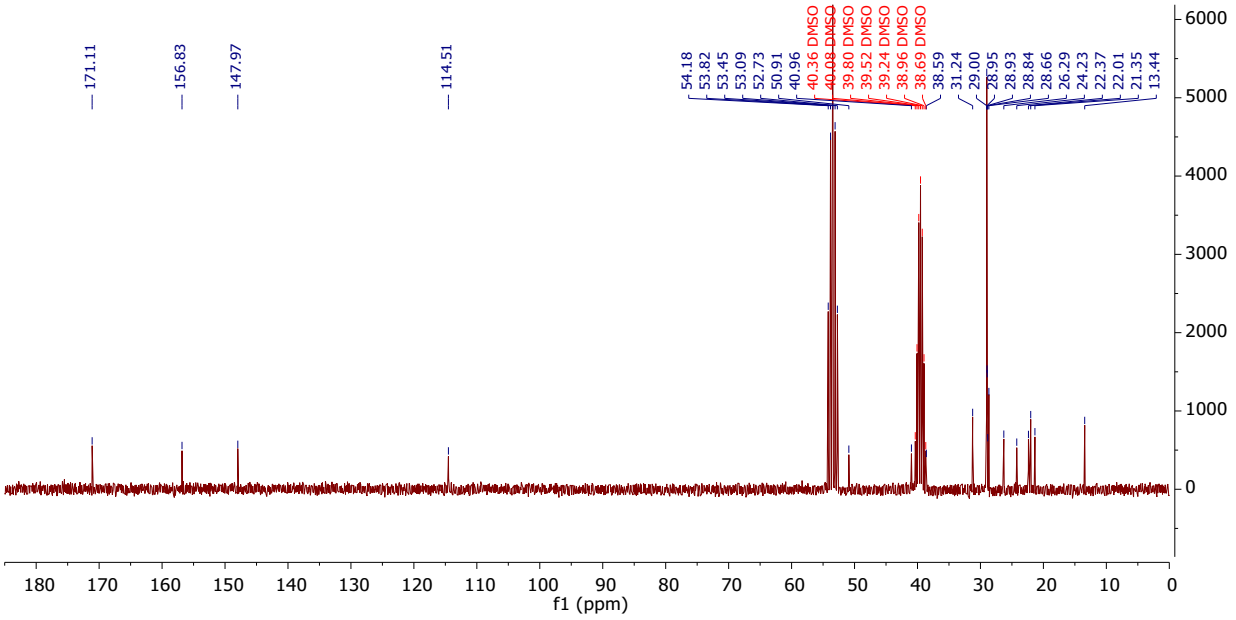


Figure S24. ^{13}C NMR spectrum of compound 18f in CD_2Cl_2/DMSO-D_6

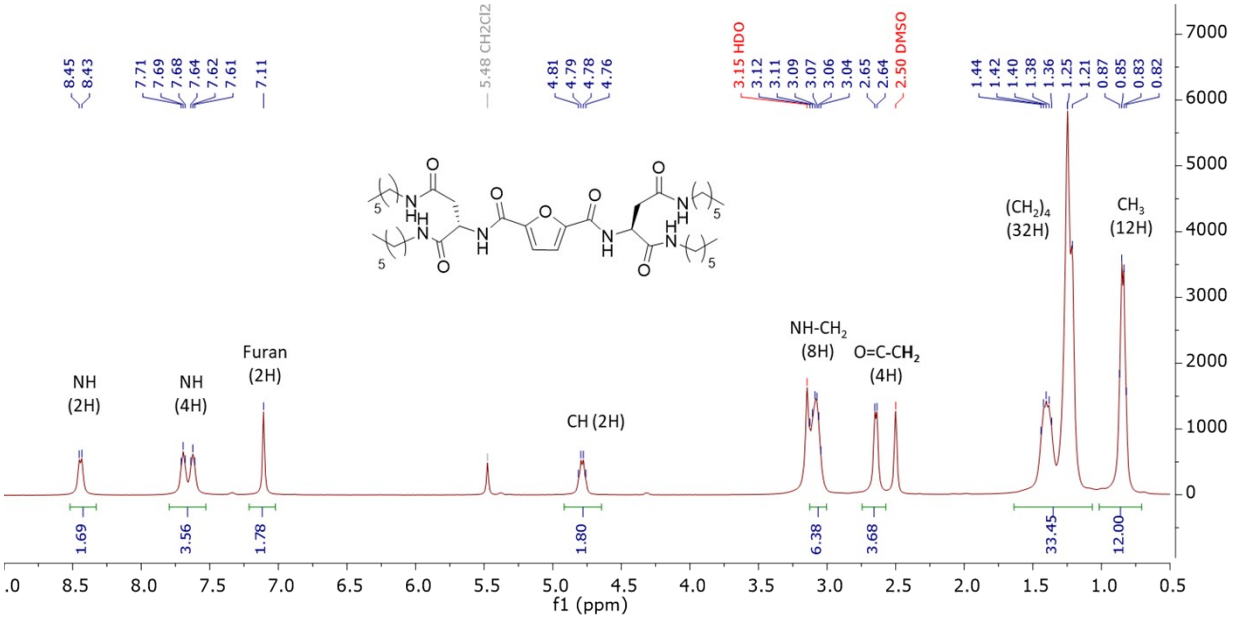


Figure S25. ^{1}H NMR spectrum of compound 19a in CD_2Cl_2/DMSO-D_6

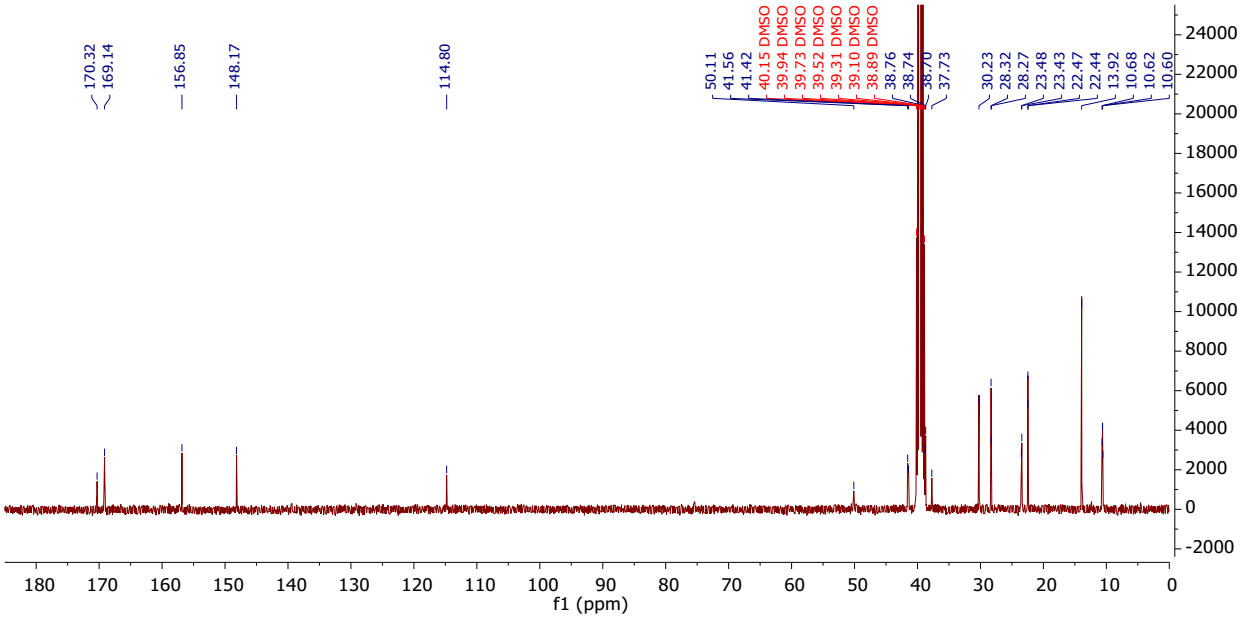


Figure S26. ^{13}C NMR spectrum of compound 19a in CD_2Cl_2/DMSO-D_6

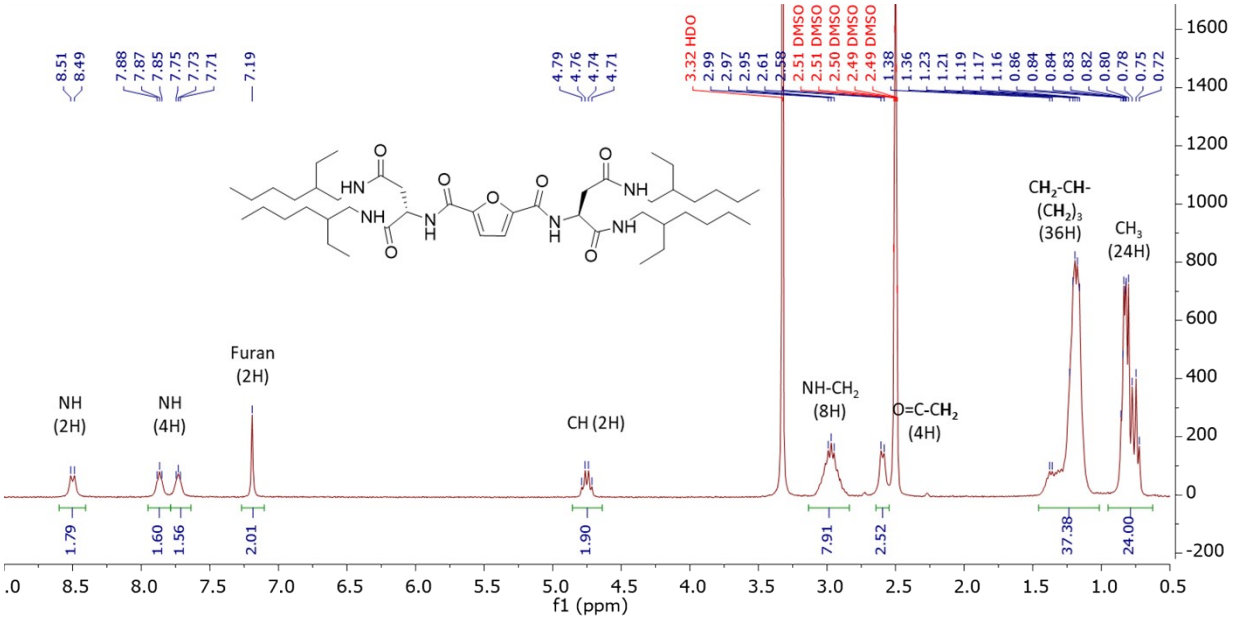


Figure S27. ^{1}H NMR spectrum of compound 19b in DMSO-D$_6$

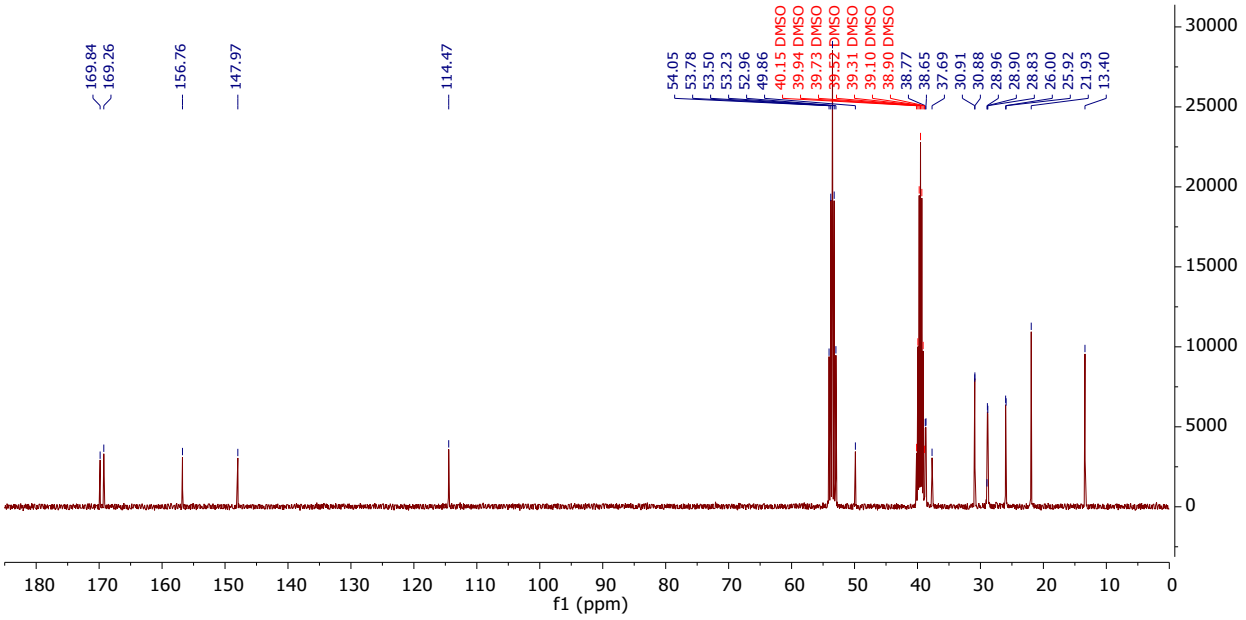


Figure S28. ^{13}C NMR spectrum of compound 19b in DMSO-D$_6$

Table S1. Gelation tests of alkyl and aromatic diamides at 1wt%[a]

Compound	propylene carbonate	diacetone alcohol	benzyl acetate	1,4-dioxane	*m*-xylene	*R*(+)-limonene	rapeseed oil	n-hexadecane
2a	P	S	S	S	S	P	I	I
2b	I	S	P	S	P	P	I	I
2c	I	S	P	S	P	P	I	I
2d	I	P	P	S	P	P	I	I
2e	I	P	P	P	P	P	I	I
2f	S	S	S	S	S	S	S	I
2g	I	I	I	S	I	I	I	I
2h	S	S	S	S	I	I	I	I
2i	S	S	S	S	P	I	I	I

[a] P: precipitate; S: soluble; I: insoluble.

Table S2. Gelation tests of di(amido-esters) at 1wt%a

Compound	propylene carbonate	diacetone alcohol	benzyl acetate	1,4-dioxane	*m*-xylene	*R*(+)-limonene	rapeseed oil	n-hexadecane
8a	S	S	S	S	S	S	I	I
8c	S	S	S	S	S	S	S	S
8d	S	S	S	S	S	S	S	S
8e	S	S	S	S	S	S	S	S
8f	P	S	S	S	S	S	S	S
8g	P	S	S	S	S	S	S	S
8h	P	S	S	S	S	S	S	P
9a	S	S	S	S	S	S	S	I
9b	S	S	S	S	S	S	S	P
9c	S	S	S	S	S	S	S	S
9d	S	S	S	S	S	S	S	S
9e	S	S	S	S	S	S	S	S
9f	S	S	S	S	S	S	S	S
9g	P	S	S	S	S	S	S	S
9h	P	S	S	S	S	S	S	S
10a	S	S	S	S	S	S	S	P
10c	S	S	S	S	S	S	S	S
10d	S	S	S	S	S	S	S	S
10e	S	S	S	S	S	S	S	S
10f	P	S	S	S	S	S	S	S
10g	P	S	S	S	S	S	S	S
10h	P	S	S	S	S	S	S	S
11a	S	S	S	S	S	S	S	I
11b	S	S	S	S	S	S	S	S
11d	P	S	S	S	S	S	S	S
11e	P	S	S	S	S	S	S	S
11g	P	P	S	S	S	S	P	P
11h	P	P	P	S	P	P	P	P

[a] P: precipitate; S: soluble; I: insoluble.

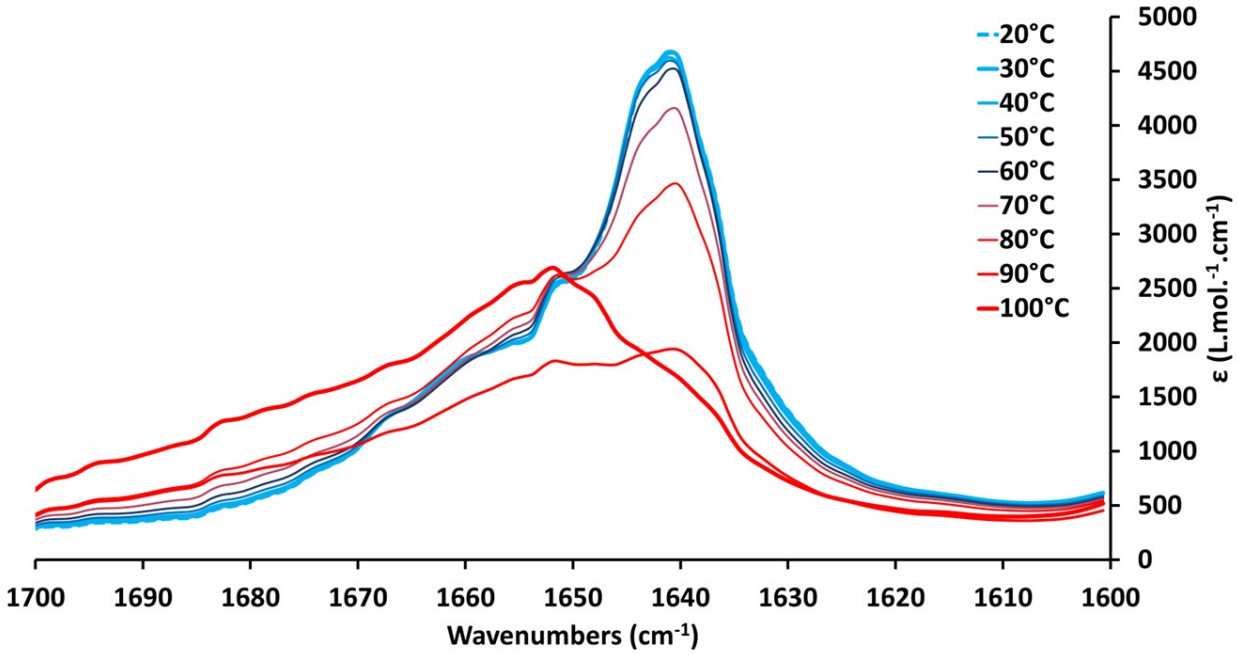


Figure S29. VT-FTIR spectra of gelator 18d in methylcyclohexane; 1wt%, heating process, 1°C/min ramp; C=O bands.

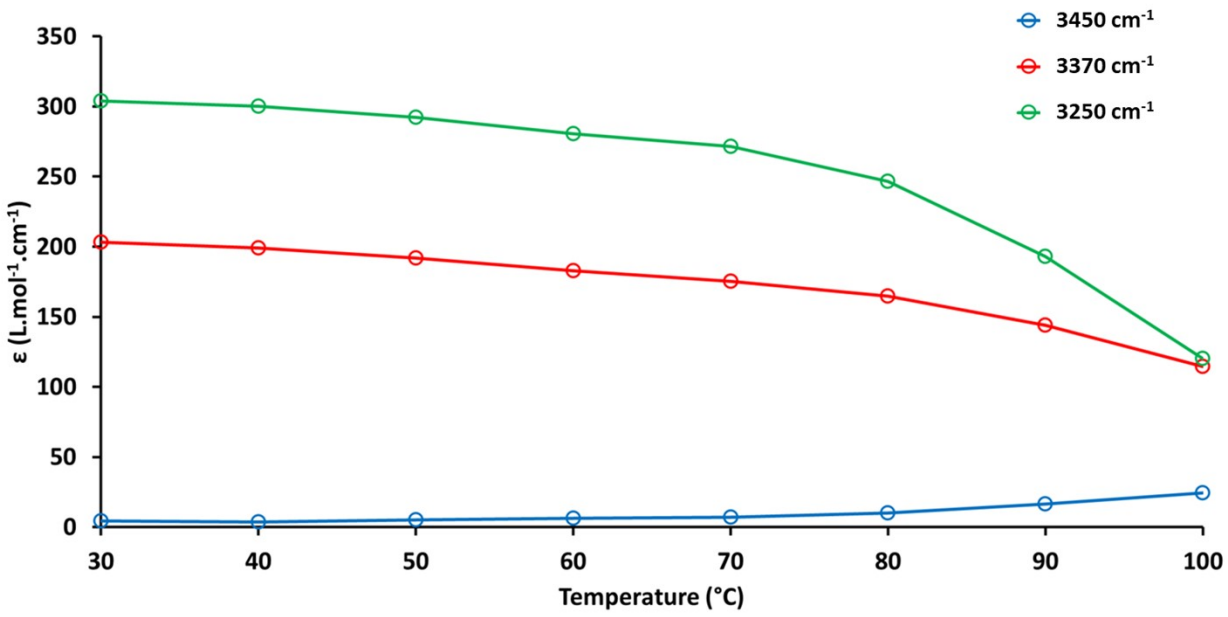


Figure S30. Intensity of the NH bands depending on the temperature of gelator 18d in methylcyclohexane; 1wt%, heating process, 1°C/min ramp; free NH 3450 cm^{-1} (blue line), bonded NH 3370 cm^{-1} (red line) and 3250 cm^{-1} (green line).

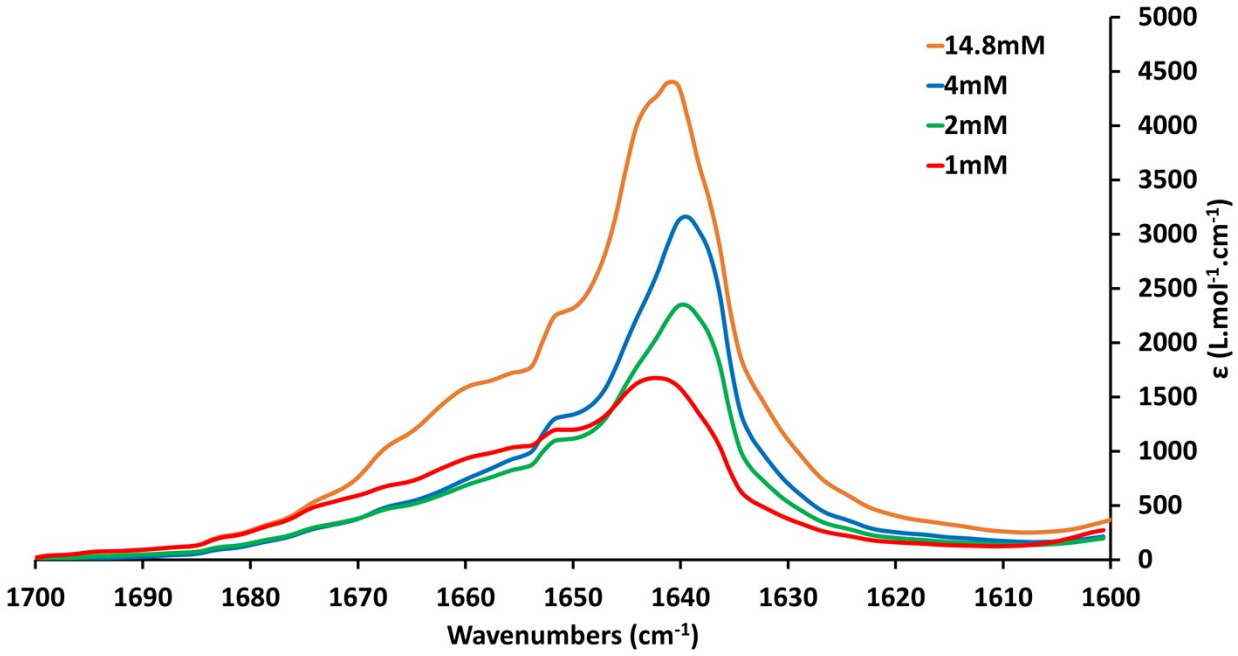


Figure S31. FTIR spectra of gelator 18d solutions at 20°C in methylcyclohexane at various concentrations: 14.8mM (orange line), 4mM (blue line), 2mM (red line) and 1mM (green line); C=O bands

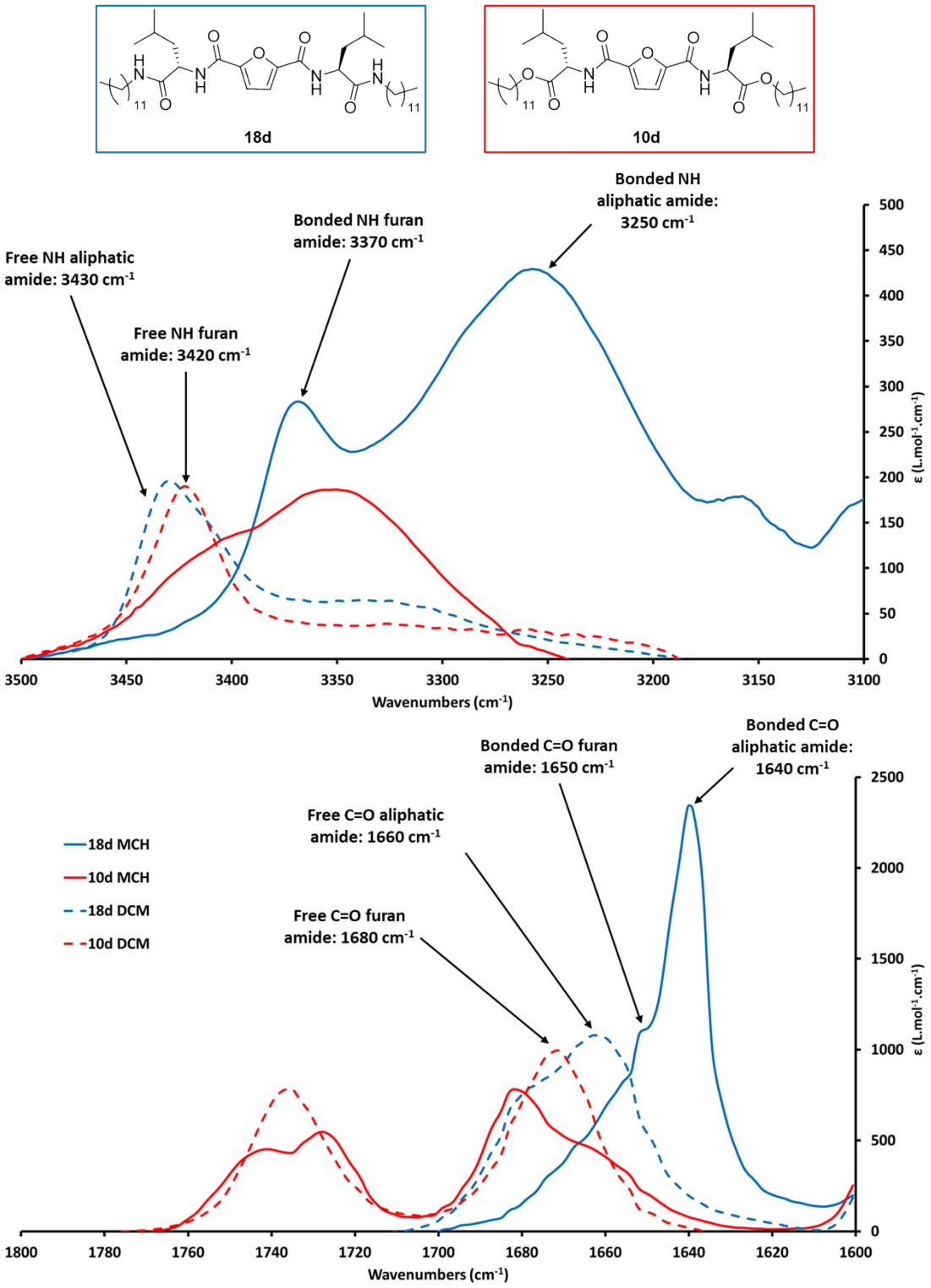


Figure S32. FTIR analyses of compounds 18d (red) and 10d (blue) in MCH (bold lines) and DCM (dotted lines), absorbance mode. Top) NH region (3500-3100 cm^{-1}); Bottom) C=O region (1800-1600 cm^{-1})

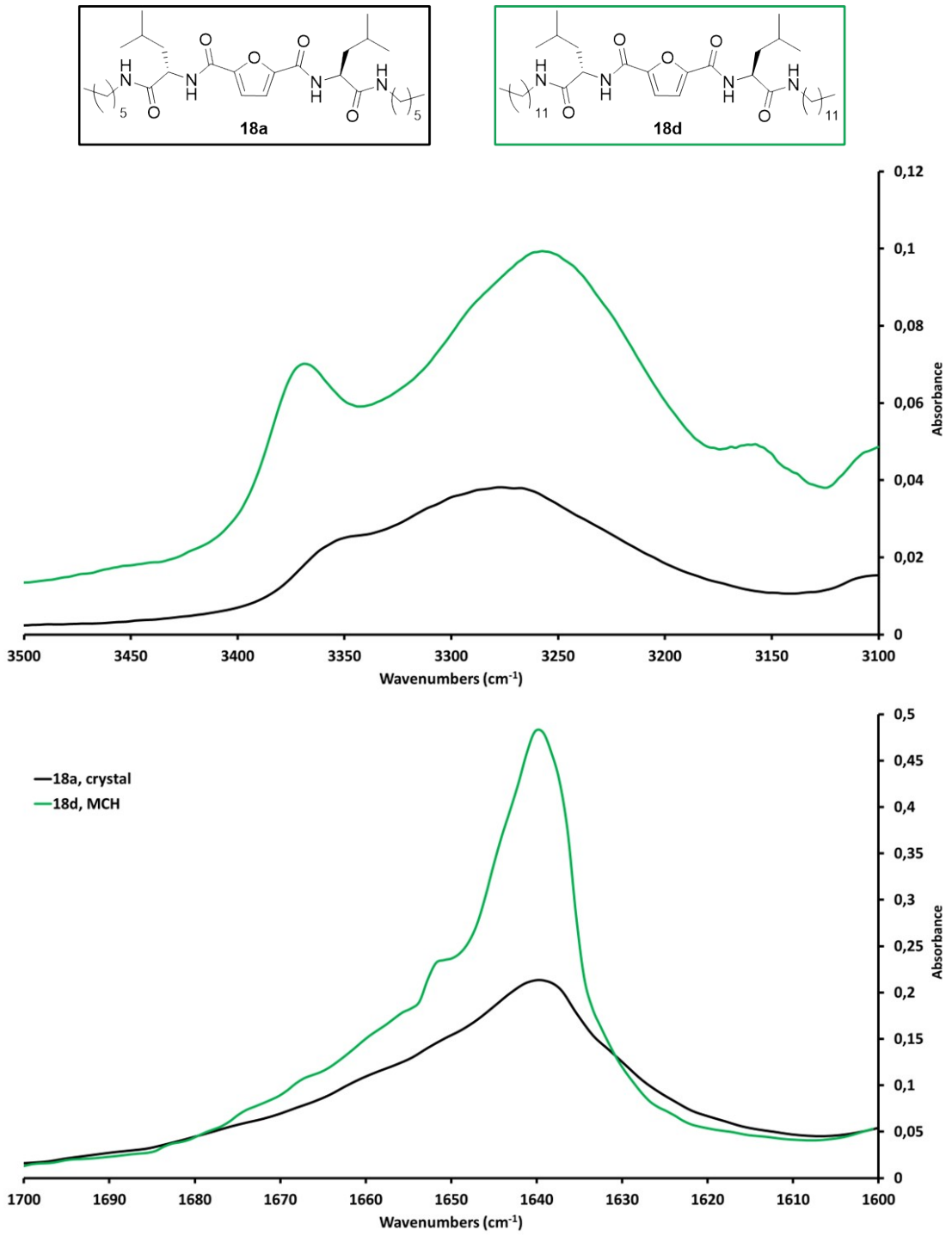


Figure S33. FTIR comparison of compounds 18a (black) crystal and 18d (green) gel in MCH, absorbance mode. Top) NH region (3500-3100 cm^{-1}); Bottom) C=O region (1800-1600 cm^{-1})

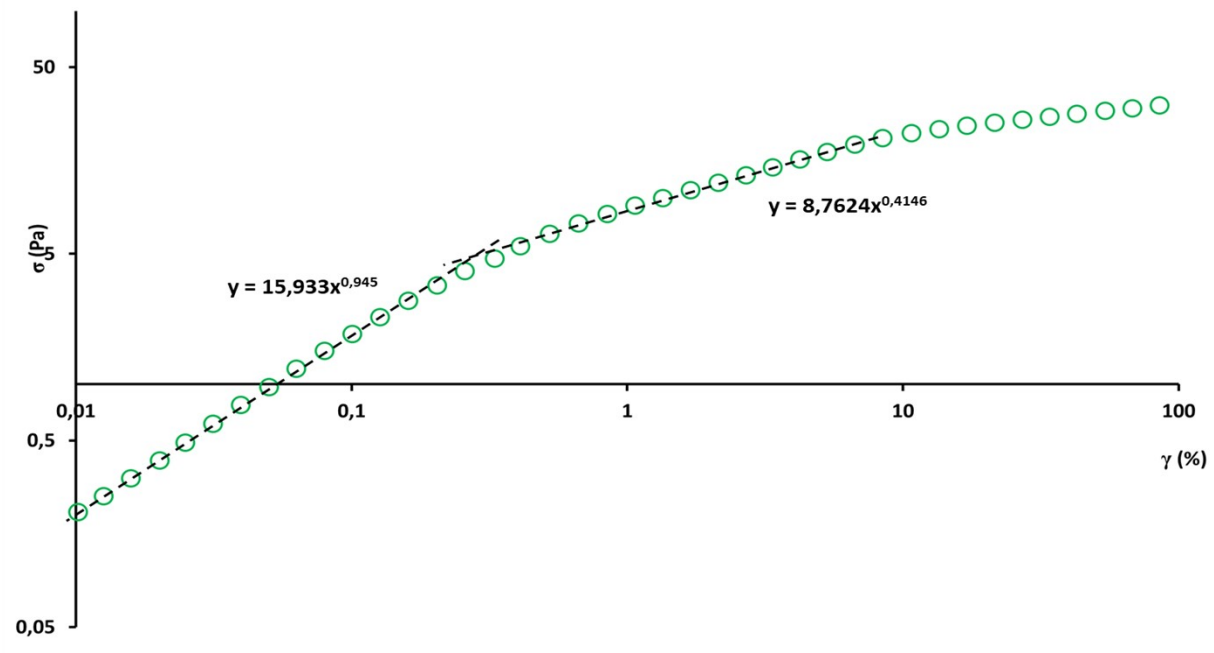


Figure S34. Evolution of the stress (σ) as a function of strain (γ) for the 2wt% gel in rapeseed oil. The dotted lines correspond to the linear regression lines used to determine the yield stress

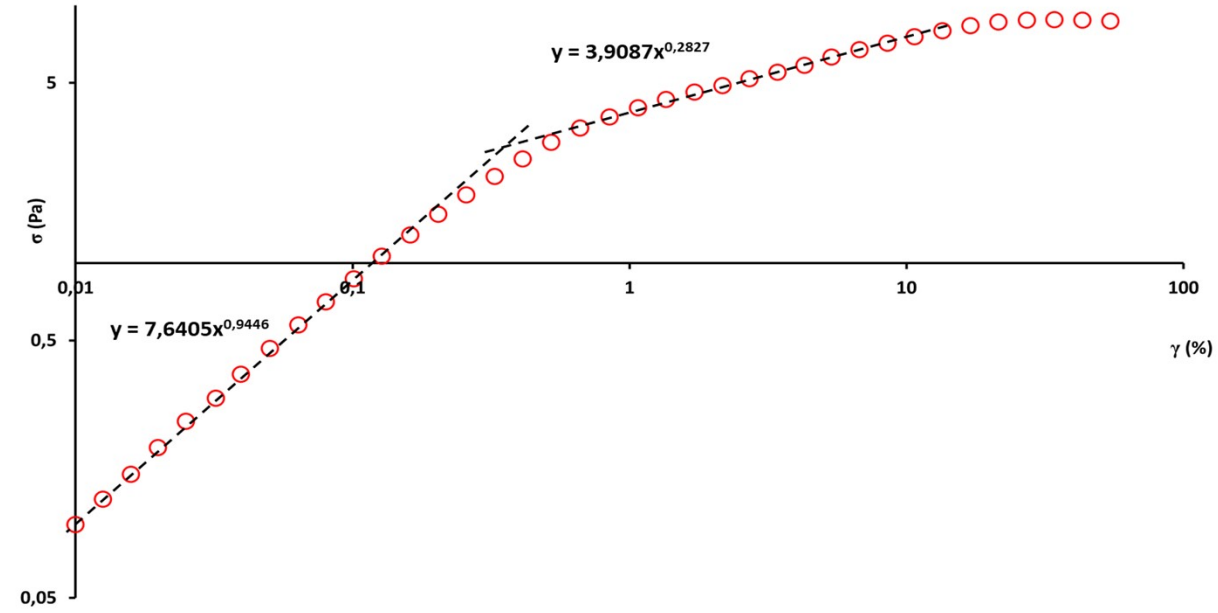


Figure S35. Evolution of the stress (σ) as a function of strain (γ) for the 1.5wt% gel in rapeseed oil. The dotted lines correspond to the linear regression lines used to determine the yield stress

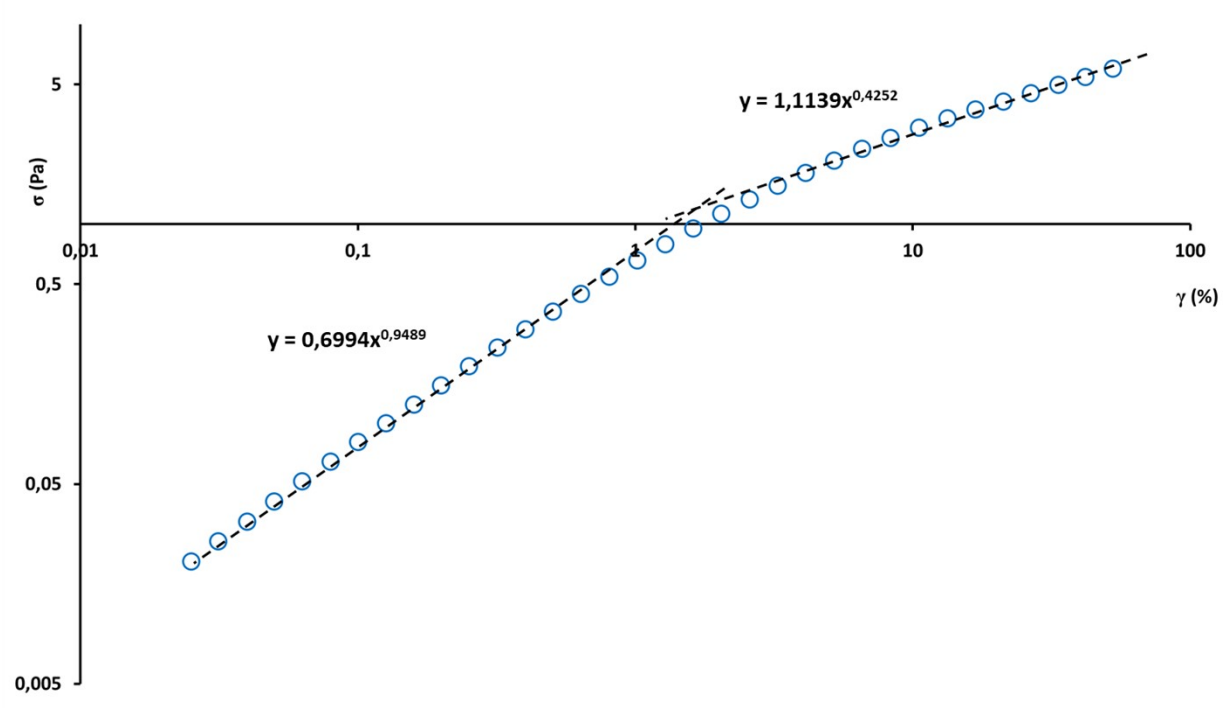


Figure S36. Evolution of the stress (σ) as a function of strain (γ) for the 1wt% gel in rapeseed oil. The dotted lines correspond to the linear regression lines used to determine the yield stress

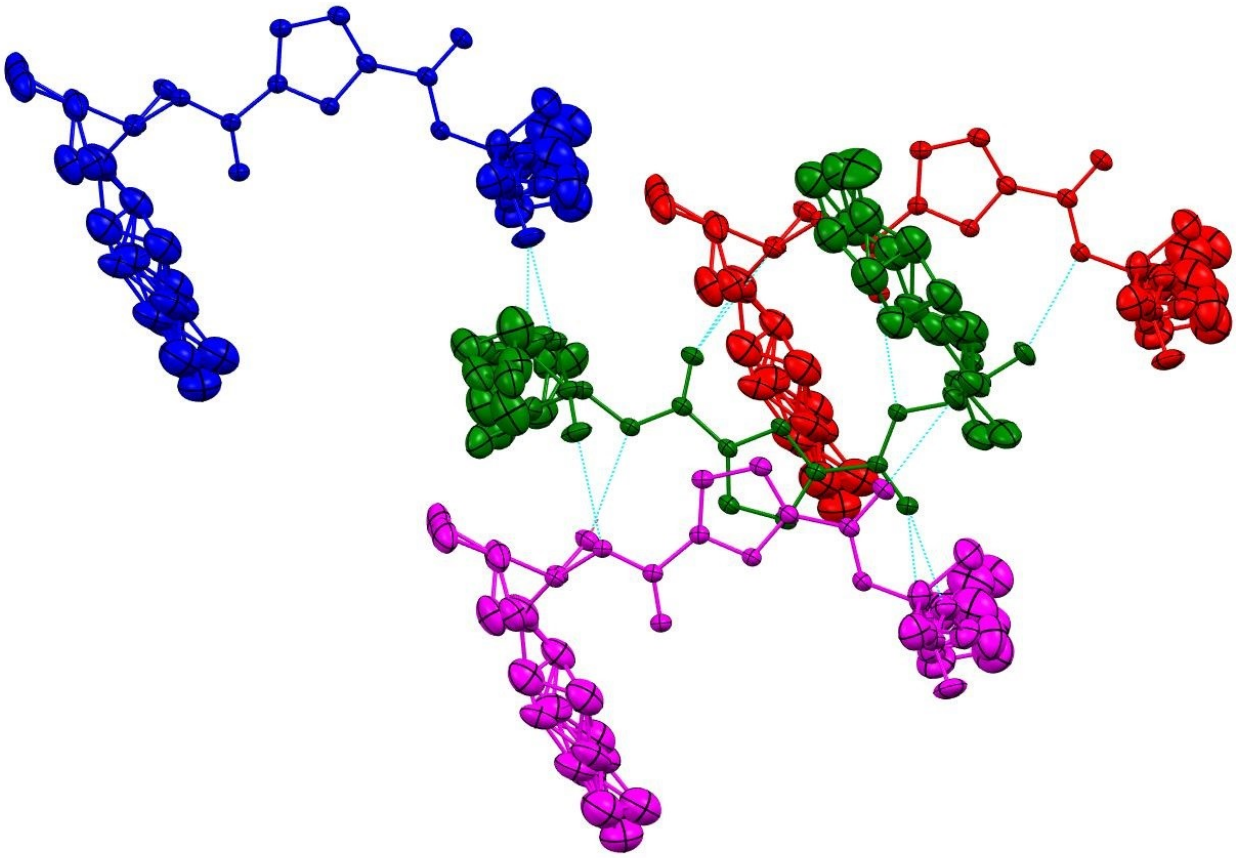


Figure S37. Crystal packing of 18a. Each neighboring molecule of 18a is depicted in a different color. Green molecule is bounded to three neighboring molecules by eight H-bonds (3 with the red one, 4 with the pink one and 1 with the blue one). These H-bonds are shown in light blue. All hydrogen atoms are not shown for sake of clarity. Only S,S enantiomer is present. Ellipsoids are drawn with 30% probability.

Table S3. Crystallographic data for 18a

	18a
CCDC deposit number	*2221526*
Empirical formula[a]	$C_{30}H_{52}N_4O_5$
Moiety Formula	$C_{30}H_{52}N_4O_5$
Formula weight (g/mol)	548.75
Temperature (K)	200
Crystal system	Triclinic
Space group	P1
a (Å)	9.5490(4)
b (Å)	13.3560(6)
c (Å)	14.7285(6)
α (°)	108.404(2)
β (°)	103.569(2)
γ (°)	95.911(2)
Volume (Å³)	1700.38(13)
Z	2
ρ_{calc} (g/cm³)	1.072
Absorption coefficient μ (mm⁻¹)	0.581 (CuKα)
F(000)	600
Crystal size (mm²)	0.50 × 0.31 × 0.13
Wavelength λ (Å)	1.54178
2Θ range (°)	6.594 - 133.104
Miller indexes ranges	-11 ≤ h ≤ 11, -15 ≤ k ≤ 15, -17 ≤ l ≤ 17
Measured reflections	57746
Unique reflections	11639
R_{int} / R_{sigma}	0.0285 / 0.0175
Reflections [I ≥ 2σ(I)]	11272
Restraints	1142
Parameters	1102
Goodness-of-fit F²	1.027
Final R indexes[b] [c] **[all data]**	R1 = 0.0509, wR2 = 0.1421
Final R indexes[b] [c] **[I ≥ 2σ(I)]**	R1 = 0.0498, wR2 = 0.1400
Largest diff. peak/hole (e/Å³)	0.25 / -0.24
Flack parameter	0.01(12)

[a] Including solvent molecules (if presence)

[b] $R1 = \sum ||F_o| - |F_c|| \,/ \sum |F_o|$ [c] $wR2 = \sqrt{\sum \left(w\left(F_o^2 - F_c^2\right)\right) / \sum \left(w\left(F_o^2\right)^2\right)}$

Table S4. Hydrogen Bond geometric parameters (lengths and angle) for 18a.

Calculated by software PLATON.

	Lengths (Å)			Angle (°)
H-bonds **D-H···A**	d(**D-H**)	d(**H···A**)	d(**D···A**)	**[D-H···A]**
N1-H1···O8$^{\#}$	0.94(5)	1.99(5)	2.903(3)	162(4)
(i) N2A-H2A···O10$^{\#\#}$	0.98(6)	1.91(6)	2.803(7)	150(6)
(i) N2B-H2B···O10$^{\#\#}$	0.99(3)	2.13(10)	2.839(11)	127(10)
N3-H3···O7	0.97(3)	2.14(4)	2.921(3)	137(3)
N4-H4···O9$^{\#}$	0.99(3)	1.92(3)	2.833(4)	153(4)
N5-H5···O3$^{\#\#\#}$	0.95(4)	1.92(4)	2.840(4)	164(4)
(ii) N6A-H6A···O2	1.00(11)	1.94(11)	2.93(2)	168(11)
(ii) N6B-H6B···O2	1.01(15)	1.79(13)	2.74(3)	156(15)
N7-H7···O5	0.95(3)	1.87(3)	2.762(3)	155(4)
(iii) N8A-H8AA···O4$^{\#\#\#}$	0.97(6)	1.95(6)	2.870(6)	159(6)
(iii) N8B-H8BA···O4$^{\#\#\#}$	0.984(17)	1.961(2)	2.835(15)	146(10)

Symmetry codes: *(#) -1+x, y, z*
(##) -1+x, y, -1+z
(###) 1+x, y, z

***D** (donor), **A** (acceptor), (i), (ii) and (iii) correspond to atoms with a partial occupancy.*