Electronic Supplementary Material (ESI) for RSC Advances

Electronic supplementary information

Quinolinium and Isoquinolinium Ionic Liquid Crystals

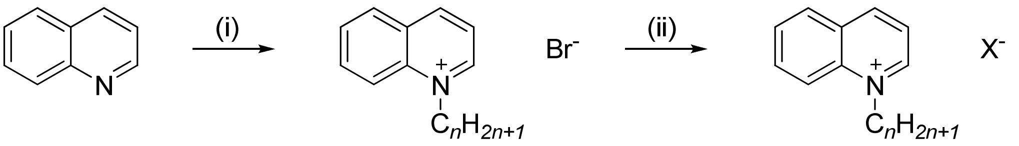
Kathleen Lava, Yannick Evrard, Kristof Van Hecke, Luc Van Meervelt and Koen Binnemans*

Supporting Information

Experimental Methods

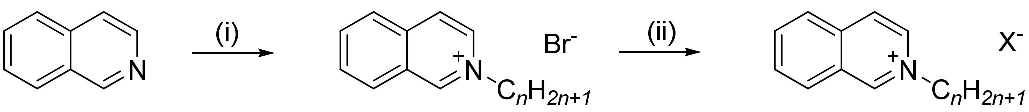
General Information. Nuclear magnetic resonance (NMR) spectra were recorded on a Bruker Avance 300 spectrometer (operating at 300 MHz for ^{1}H and 75 MHz for ^{13}C). Elemental analyses were obtained on a CE Instruments EA-1110 elemental analyzer.

Synthesis. The synthetic route for the quinolinium and isoquinolinium salts is outlined below, in Scheme S1.



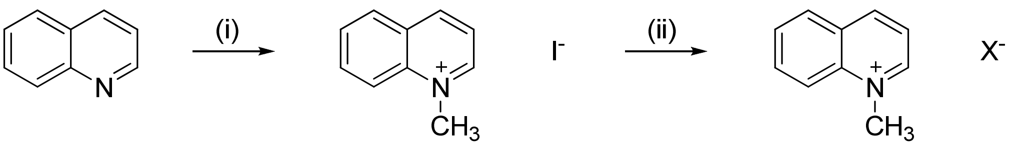
Q*n*.a
(*n* = 4, 12, 14, 16, 18, 20, 22)

Q*n*.b-Q*n*.d
b: X^- = BF_4^- (*n* = 12-22)
c: X^- = DOS (*n* =12-22)
d: X^- = PF_6^- (*n* = 12-22)
f: X^- = DOSS (*n* = 4)



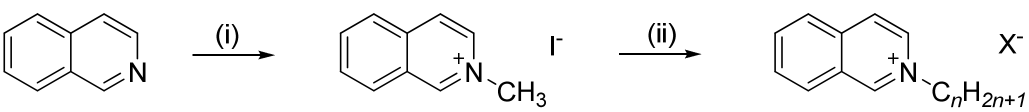
IQ*n*.a
(*n* = 12, 14, 16, 17, 18, 19, 20, 22)

IQ*n*.b-IQ*n*.d
b: X^- = BF_4^-
c: X^- = DOS
d: X^- = PF_6^-



Q1.e

Q1.f-Q1.h
f: X- = DOSS
g: X- = DcHSS
h: X- = DHSS



IQ1.e

IQ1.e-IQ1.h
f: X- = DOSS
g: X- = DcHSS
h: X- = DHSS

Scheme S1: Synthesis of the quinolinium and isoquinolinium salts. (i) $C_nH_{2n+1}Br$ or CH_3I, acetonitrile. (ii) Tetrafluoroborate salts (**Q*n*.b** and **IQ*n*.b**): KBF_4, acetone, 2 h, reflux. DOS salts (**Q*n*.c** and **IQ*n*.c**): sodium dodecylsulfate, water, 3 h, reflux. Hexafluorophosphate salts (**Q*n*.d** and **IQ*n*.d**): KPF_6, methanol/water (6:4), 3 h, reflux. Sulfosuccinate salts (**Q1.f-Q1.h**, **Q4.f** and **IQ1.f-IQ1.h**): sodium dioctyl-, cyclohexyl-, hexylsulfosuccinate, water, 3h, reflux.

Synthesis of the bromide salts **Q4.a**, **Q12.a-Q22.a**. A solution of the appropriate 1-bromoalkane (1.5 eq.) in acetonitrile was added dropwise to a stirred quinoline or isoquinoline (1 eq.) solution in acetonitrile. The mixture was refluxed during 72 h and allowed to cool down to room temperature so that a precipitate formed. The precipitate was filtered off and washed with acetonitrile and diethylether. The product was purified by dissolving the powder in a small amount of dichloromethane and subsequently adding diethylether until precipitation occurred. Filtration resulted in white to light brown powders that were dried *in vacuo* at 50 °C. **Q4.a.** Yield: 45 %. δ_H (300 MHz, $CDCl_3$, 25 °C, TMS): 0.86 (t, 3H, CH_3, ^3J = 7.3 Hz), 1.43-1.50 (m, 2H, CH_2), 1.96-2.04 (m, 2H, $NCH_2C\mathbf{H}_2$), 5.36 (t, NCH_2, ^3J = 7.5 Hz), 7.88-7.93 (m, 1H, H-aryl), 8.08-8.21 (m, 2H, H-aryl), 8.39-8.43 (m, 2H, H-aryl), 9.22 (d, 1H, H-aryl, J_o = 8.3 Hz), 10.37-10.40 (m, 1H, H-aryl). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 13.58, 19.72, 32.20, 57.91, 118.41, 122.33, 129.98, 130.21, 131.24, 136.18, 137.59, 147.48, 150.10. Calculated for $C_{13}H_{16}BrN{\cdot}H_2O$: C 54.94, H 6.38, N 4.93. Found: C 55.01, H 6.38, N 4.93. **Q12.a.** Yield: 25 %. δ_H (300 MHz, $CDCl_3$, 25 °C, TMS): 0.85 (t, 3H, CH_3, ^3J = 6.4 Hz), 1.20-1.51 (m, 18H, CH_2), 2.08 (quintet, 2H, $NCH_2C\mathbf{H}_2$, ^5J = 7.5 Hz), 5.40 (t, 2H, NCH_2, ^3J = 7.6 Hz), 7.92-7.98 (m, 1H, H-aryl), 8.18-8.38 (m, 4H, H-aryl), 9.11 (d, 1H, H-aryl, J_o = 8.3 Hz), 10.51 (d, 1H, H-aryl, J_o = 5.0 Hz). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.15, 22.70, 26.54, 29.21, 29.34, 29.40, 29.54, 29.60, 30.45, 31.91, 58.28, 118.36, 122.73, 130.05, 130.19, 131.25, 136.01, 137.67, 147.32, 150.54. Calculated for (%) $C_{21}H_{32}BrN{\cdot}0.5H_2O$: C 65.11, H

8.59, N 3.62, Found: C 65.40, H 9.52, N 3.65. **Q14.a.** Yield: 26 %. δ_H (300 MHz, $CDCl_3$, 25 °C, TMS): 0.87 (t, 3H, CH_3, ^3J = 7.1 Hz), 1.22-1.54 (m, 22H, CH_2), 2.11 (quintet, 2H, $NCH_2C\mathbf{H}_2$, ^5J = 7.5 Hz), 5.44 (t, 2H, NCH_2, ^3J = 7.6 Hz), 8.01-8.10 (m, 1H, H-aryl), 8.21-8.43 (m, 4H, H-aryl), 9.18 (d, 1H, H-aryl, J_o = 8.3 Hz), 10.55 (d, 1H, H-aryl, J_o = 5.7 Hz). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.14, 22.69, 26.53, 29.21, 29.36, 29.53, 29.63, 30.48, 31.92, 58.21, 118.39, 122.58, 130.04, 130.21, 131.28, 136.07, 137.67, 147.38, 150.46. Calculated for (%) $C_{23}H_{36}BrN$: C 67.97, H 8.93, N 3.45. Found: C 67.98, H 9.97, N 3.46. **Q16.a.** Yield: 57 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.85 (t, 3H, CH_3, ^3J = 6.9 Hz), 1.20-1.54 (m, 26H, CH_2), 2.09 (quintet, 2H, $NCH_2C\mathbf{H}_2$, ^5J = 7.4 Hz), 5.42 (t, 2H, NCH_2, ^3J = 7.6 Hz), 7.95-8.00 (m, 1H, H-aryl), 8.19-8.42 (m, 4H, H-aryl), 9.15 (d, 1H, H-aryl, J_o = 8.3 Hz), 10.57 (d, 1H, H-aryl, J_o = 4.9 Hz). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.17, 22.72, 26.55, 29.23, 29.39, 29.56, 29.63, 29.71, 30.50, 31.95, 58.22, 118.40, 122.65, 130.05, 130.21, 131.25, 136.04, 137.70, 147.31, 150.57. Calculated for (%) $C_{25}H_{40}BrN$: C 69.11, H 9.28, N 3.22. Found: C 68.65, H 10.19, N 3.26. **Q17.a.** Yield: 51 %. δ_H (300 MHz, $CDCl_3$, 25 °C, TMS): 0.87-0.89 (m, 3H, CH_3), 1.12-1.53 (m, 28H, CH_2), 2.11 (m, 2H, $NCH_2C\mathbf{H}_2$), 5.43-5.46 (m, 2H, NCH_2), 7.96-8.00 (m, 1H, H-aryl), 8.19-8.44 (m, 4H, H-aryl), 9.22-9.25 (m, 1H, H-aryl), 10.51-10.53 (m, 1H, H-aryl). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.16, 22.71, 26.54, 29.22, 29.39, 29.56, 29.72, 30.50, 31.94, 58.23, 118.41, 122.60, 130.05, 130.21, 131.28, 136.06, 137.69, 147.38, 150.49. Calculated for (%) $C_{26}H_{42}BrN$: C 69.62, H 9.44, N 3.12. Found: C 69.72, H 9.88, N 3.04. **Q18.a.** Yield: 3 %. δ_H (300 MHz, $CDCl_3$, 25 °C, TMS): 0.88 (t, 3H, CH_3, ^3J = 6.9 Hz), 1.23-1.57 (m, 30H, CH_2), 2.11 (quintet, 2H, $NCH_2C\mathbf{H}_2$, ^5J = 7.4 Hz), 5.44 (t, 2H, NCH_2, ^3J = 7.6 Hz), 7.95-8.00 (m, 1H, H-aryl), 8.19-8.39 (m, 4H, H-aryl), 9.09 (d, 1H, H-aryl, J_o = 8.3 Hz), 10.62 (d, 1H, H-aryl, J_o = 5.5 Hz). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.16, 22.72, 26.55, 29.23, 29.39, 29.56, 29.73, 30.49, 31.95, 58.24, 118.39, 122.67, 130.04, 130.20, 131.24, 136.02, 137.70, 147.29, 150.58. Calculated for (%) $C_{27}H_{44}BrN$: C 70.11, H 9.59, N

3.03. Found: C 69.61, H 10.70, N 2.88. **Q19.a.** Yield: 42 %. δ_H (400 MHz, $CDCl_3$, 25 °C TMS): 0.86-0.89 (m, 3H, CH_3), 1.21-1.51 (m, 32H, CH_2), 2.07-2.15 (m, 2H, $NCH_2C\mathbf{H}_2$), 5.44 (t, 2H, NCH_2, ^3J = 7.5 Hz), 7.98 (t, 1H, H-aryl, J_o = 7.6 Hz), 8.20-8.43 (m, 4H, H-aryl), 9.19 (d, 1H, H-aryl, J_o = 8.3 Hz), 10.55 (d, 1H, H-aryl, J_o = 5.6 Hz). δ_C (100 MHz, $CDCl_3$, 25 °C, TMS): 14.18, 22.75, 26.59, 29.26, 29.43, 29.45, 29.60, 29.67, 29.71, 29.73, 29.77, 30.55, 31.99, 58.28, 118.45, 122.73, 130.09, 130.21, 131.27, 136.03, 137.77, 147.30, 150.70. Calculated for (%) $C_{28}H_{46}BrN$: C 70.57, H 9.73, N 2.94. Found: C 70.57, H 9.84, N 2.82. **Q20.a.** Yield: 16 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.88 (t, 3H, CH_3, ^3J = 6.4 Hz), 1.25-1.63 (m, 34H, CH_2), 2.12 (quintet, 2H, $NCH_2C\mathbf{H}_2$, ^5J = 6.2 Hz), 5.43 (t, 2H, NCH_2, ^3J = 7.7 Hz), 7.95-8.00 (m, 1H, H-aryl), 8.21-8.34 (m, 4H, H-aryl), 8.98 (d, 1H, H-aryl, J_o = 8.4 Hz), 10.73 (d, 1H, H-aryl, J_o = 5.4 Hz). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.21, 22.77, 26.59, 29.27, 29.44, 29.61, 29.78, 30.54, 32.00, 58.26, 118.43, 122.73, 130.07, 130.22, 131.25, 136.02, 137.74, 147.26, 150.70. Calculated for (%) $C_{29}H_{48}BrN{\cdot}H_2O$: C 68.48, H 9.91, N 2.75. Found: C 68.73, H 10.36, N 2.76. **Q22.a.** Yield: 16 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.86 (t, 3H, CH_3, ^3J = 6.9 Hz), 1.25-1.63 (m, 38H, CH_2), 2.11 (quintet, 2H, $NCH_2C\mathbf{H}_2$, ^5J = 6.2 Hz), 5.43 (t, 2H, NCH_2, ^3J = 7.7 Hz), 7.95-8.00 (m, 1H, H-aryl), 8.17-8.33 (m, 4H, H-aryl), 8.98 (d, 1H, H-aryl, J_o = 7.8 Hz), 10.71 (d, 1H, H-aryl, J_o = 5.2 Hz). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.19, 22.75, 26.57, 29.25, 29.42, 29.59, 29.77, 30.52, 31.98, 58.24, 118.41, 122.71, 130.05, 130.20, 131.24, 136.01, 137.72, 147.24, 150.69. Calculated for (%) $C_{31}H_{52}BrN{\cdot}0.5H_2O$: C 70.56, H 10.12, N 2.65. Found: C 70.72, H 10.51, N 2.69. **IQ8.a.** Yield: 83 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.83 (t, 3H, CH_3, ^3J = 6.9 Hz), 1.21-1.45 (m, 10H, CH_2), 2.13 (quintet, 2H, $NCH_2C\mathbf{H}_2$, ^5J = 7.4 Hz), 5.10 (t, 2H, NCH_2, ^3J = 7.4 Hz), 7.93-7.98 (m, 1H, H-aryl), 8.10-8.18 (m, 2H, H-aryl), 8.39 (d, 1H, H-aryl, J_o = 6.8 Hz), 8.78 (d, 2H, H-aryl, J_o = 7.9 Hz), 11.14 (s, 1H, H-aryl). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.01, 22.51, 26.13, 28.97, 29.03, 31.63, 31.91, 61.57, 126.41, 127.10, 127.84, 131.24, 134.53, 137.01, 137.28, 150.26. Calculated for (%) $C_{17}H_{24}BrN·0.5H_2O$: C 61.63, H 7.61, N 4.23. Found: C 61.53, H 8.78, N 4.14. **IQ12.a.** Yield: 53 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.84 (t, 3H, CH_3, ^3J = 6.9 Hz), 1.19-1.39 (m, 18H, CH_2), 2.11 (quintet, 2H, $NCH_2C\mathbf{H}_2$, ^5J = 7.4 Hz), 5.07 (t, 2H, NCH_2, ^3J = 7.4 Hz), 7.90-7.95 (m, 1H, H-aryl), 8.08-8.17 (m, 2H, H-aryl), 8.39 (d, 1H, H-aryl, J_o = 6.8 Hz), 8.74-8.81 (m, 2H, H-aryl), 11.09 (s, 1H, H-aryl). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.13, 22.67, 26.19, 29.14, 29.31, 29.37, 29.52, 29.57, 31.89, 31.96, 61.62, 126.39, 127.12, 127.88, 131.29, 131.33, 134.51, 137.04, 137.31, 150.38. Calculated for (%) $C_{21}H_{32}BrN·0.5H_2O$: C 65.11, H 8.59, N 3.62. Found: C 64.94, H 9.52, N 3.62. **IQ14.a.** Yield: 82 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.87 (t, 3H, CH_3, ^3J = 6.9 Hz), 1.21-1.40 (m, 22H, CH_2), 2.12 (quintet, 2H, $NCH_2C\mathbf{H}_2$, ^5J = 7.4 Hz), 5.09 (t, 2H, NCH_2, ^3J = 7.3 Hz), 7.93-7.98 (m, 1H, H-aryl), 8.09-8.14 (m, 2H, H-aryl), 8.35 (d, 1H, H-aryl, J_o = 6.7 Hz), 8.70-8.79 (m, 2H, H-aryl), 11.13 (s, 1H, H-aryl). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.16, 22.71, 26.21, 29.17, 29.37, 29.55, 29.62, 29.66, 29.69, 31.94, 61.69, 126.40, 127.13, 127.90, 131.33, 131.36, 134.49, 137.07, 137.32, 150.37. Calculated for (%) $C_{23}H_{36}BrN·0.5H_2O$: C 66.49, H 8.98, N 3.37. Found: C 66.19, H 10.23, N 3.41. **IQ16.a.** Yield: 78 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.85 (t, 3H, CH_3, ^3J = 6.9 Hz), 1.19-1.38 (m, 26H, CH_2), 2.10 (quintet, 2H, $NCH_2C\mathbf{H}_2$, ^5J = 7.2 Hz), 5.07 (t, 2H, NCH_2, ^3J = 7.3 Hz), 7.91-7.96 (m, 1H, H-aryl), 8.07-8.15 (m, 2H, H-aryl), 8.35 (d, 1H, H-aryl, J_o = 6.8 Hz), 8.72-8.77 (m, 2H, H-aryl), 11.11 (s, 1H, H-aryl). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.18, 22.73, 26.22, 29.19, 29.40, 29.57, 29.64, 29.73, 31.96, 61.65, 126.37, 127.13, 127.92, 131.33, 131.40, 134.50, 137.08, 137.33, 150.47. Calculated for (%) $C_{25}H_{40}BrN$: C 69.11, H 9.28, N 3.22. Found: C 68.83, H 10.94, N 3.25. **IQ17.a.** Yield: 93 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.86 (t, 3H, CH_3, ^3J = 6.9 Hz), 1.21-1.45 (m, 28H, CH_2), 2.10 (quintet, 2H, $NCH_2C\mathbf{H}_2$, ^5J = 6.4 Hz), 5.09 (t, 2H, NCH_2, ^3J = 7.2 Hz), 7.95-7.99 (m, 1H, H-aryl), 8.12-8.14 (m, 2H, H-aryl), 8.31 (d, 1H, H-aryl, J_o = 6.6 Hz), 8.62-8.80 (m, 2H, H-aryl), 11.21 (s, 1H, H-aryl). δ_C

(75 MHz, $CDCl_3$, 25 °C, TMS): 14.18, 22.74, 26.23, 29.19, 29.41, 29.58, 29.75, 31.97, 61.71, 126.35, 127.11, 127.92, 131.37, 131.43, 134.42, 137.10, 137.32, 150.47. Calculated for (%) $C_{26}H_{42}BrN{\cdot}0.5H_2O$: C 68.25, H 9.47, N 3.06. Found: C 67.81, H 10.89, N 3.06. **IQ18.a.** Yield: 70 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.85 (t, 3H, CH_3, ^3J = 6.9 Hz), 1.19-1.38 (m, 30H, CH_2), 2.09 (quintet, 2H, $NCH_2C\mathbf{H}_2$, ^5J = 7.5 Hz), 5.07 (t, 2H, NCH_2, ^3J = 7.2 Hz), 7.91-7.96 (m, 1H, H-aryl), 8.10-8.12 (m, 2H, H-aryl), 8.33 (d, 1H, H-aryl, J_o = 6.8 Hz), 8.69-8.77 (m, 2H, H-aryl), 11.10 (s, 1H, H-aryl). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.17, 22.73, 26.22, 29.19, 29.40, 29.58, 29.74, 31.96, 61.65, 126.39, 127.13, 127.91, 131.32, 131.38, 134.52, 137.07, 137.33, 150.44. Calculated for (%) $C_{27}H_{44}BrN{\cdot}0.5H_2O$: C 68.77, H 9.62, N 2.97. Found: C 68.61, H 11.09, N 3.00. **IQ19.a.** Yield: 75 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.88 (t, 3H, CH_3, ^3J = 6.9 Hz), 1.21-1.40 (m, 32H, CH_2), 2.11 (quintet, 2H, $NCH_2C\mathbf{H}_2$, ^5J = 7.5 Hz), 5.09 (t, 2H, NCH_2, ^3J = 7.5 Hz), 7.93-7.99 (m, 1H, H-aryl), 8.12-8.14 (m, 2H, H-aryl), 8.31 (d, 1H, H-aryl, J_o = 6.9 Hz), 8.64-8.80 (m, 2H, H-aryl), 11.18 (s, 1H, H-aryl). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.18, 22.74, 26.23, 29.19, 29.41, 29.58, 29.66, 29.71, 29.75, 31.97, 61.69, 126.38, 127.13, 127.92, 131.34, 131.40, 134.49, 137.08, 137.33, 150.44. Calculated for (%) $C_{28}H_{46}BrN$: C 70.57, H 9.73, N 2.94. Found: C 70.74, H 9.87, N 2.87. **IQ20.a.** Yield: 82 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.85 (t, 3H, CH_3, ^3J = 6.9 Hz), 1.19-1.45 (m, 34H, CH_2), 2.12 (quintet, 2H, $NCH_2C\mathbf{H}_2$, ^5J = 7.2 Hz), 5.07 (t, 2H, NCH_2, ^3J = 7.2 Hz), 7.91-7.97 (m, 1H, H-aryl), 8.10-8.12 (m, 2H, H-aryl), 8.30 (d, 1H, H-aryl, J_o = 6.6 Hz), 8.62-8.78 (m, 2H, H-aryl), 11.15 (s, 1H, H-aryl). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.19, 22.74, 26.23, 29.20, 29.42, 29.59, 29.76, 31.98, 31.67, 2126.35, 127.13, 127.93, 131.34, 131.42, 134.48, 137.09, 137.33, 150.52. Calculated for (%) $C_{29}H_{48}BrN{\cdot}0.5H_2O$: C 69.72, H 9.89, N 2.80. Found: C 69.69, H 11.47, N 2.85. **IQ22.a.** Yield: 18 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.88 (t, 3H, CH_3, ^3J = 6.6 Hz), 1.22-1.46 (m, 38H, CH_2), 2.11 (quintet, 2H, $NCH_2C\mathbf{H}_2$, ^5J = 6.6 Hz), 5.08 (t, 2H, NCH_2, ^3J = 7.5 Hz), 7.98-8.00 (m, 1H, H-aryl),

8.10-8.13 (m, 2H, H-aryl), 8.27 (d, 1H, H-aryl, J_o = 6.6 Hz), 8.52-8.81 (m, 2H, H-aryl), 11.24 (s, 1H, H-aryl). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.22, 22.78, 26.26, 29.22, 29.45, 29.62, 29.76, 29.80, 32.01, 61.75, 126.31, 127.11, 127.95, 131.41, 131.50, 134.38, 137.14, 137.33, 150.60. Calculated for (%) $C_{31}H_{52}BrN·H_2O$: C 69.38, H 10.14, N 2.61. Found: C69.68, H 9.72, N 2.66.

Synthesis of the tetrafluoroborate salts. Sodium tetrafluoroborate (2 eq.) was added to a solution of the appropriate bromide (1 eq.) in acetone. The reaction mixture was refluxed for 3 h. After cooling down, the inorganic salts were filtered off and washed with acetone. The filtrate was evaporated under reduced pressure. The obtained solid was again dissolved in chloroform, cooled in the refrigerator and residual $NaBF_4$ was filtered off. The solvent was removed under reduced pressure and an off-white solid was obtained. The pure product was dried overnight *in vacuo* at 50 °C. **Q12.b.** Yield: 71 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.87 (t, 3H, CH_3, ^3J = 6.9 Hz), 1.23-1.47 (m, 18H, CH_2), 2.09 (quintet, 2H, $NCH_2C\mathbf{H}_2$, ^5J = 6.9 Hz), 5.12 (t, 2H, NCH_2, ^3J = 7.4 Hz), 7.94-8.00 (m, 1H, H-aryl), 8.10-8.32 (m, 4H, H-aryl), 9.01 (d, 1H, H-aryl, J_o = 8.3 Hz), 9.61 (d, 1H, H-aryl, J_o = 5.4 Hz). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.20, 22.75, 26.53, 29.17, 29.39, 29.44, 29.65, 30.29, 31.96, 58.65, 118.30, 122.52, 130.24, 130.35, 131.28, 136.26, 137.74, 147.76, 149.56. Calculated for (%) $C_{21}H_{32}BF_4N·0.5H_2O$: C 63.97, H 8.44, N 3.55. Found: C 64.27, H 8.08, N 3.56. **Q14.b.** Yield: 86 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.87 (t, 3H, CH_3, ^3J = 6.0 Hz), 1.24-1.57 (m, 22H, CH_2), 2.10 (quintet, 2H, $NCH_2C\mathbf{H}_2$, ^5J = 6.0 Hz), 5.06 (t, 2H, NCH_2, ^3J = 6.9 Hz), 7.97-8.03 (m, 1H, H-aryl), 8.11-8.32 (m, 4H, H-aryl), 8.97 (d, 1H, H-aryl, J_o = 7.9 Hz), 9.45 (d, 1H, H-aryl, J_o = 5.2 Hz). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.22, 22.78, 26.55, 26.55, 29.20, 29.45, 29.61, 29.69, 29.73, 29.77, 30.32, 32.01, 58.64, 118.31, 122.56, 130.24, 130.34, 131.28, 136.23, 137.76, 147.72, 149.68. Calculated for (%) $C_{23}H_{36}BF_4N·0.5H_2O$: C 65.41, H 8.83, N

3.32. Found: C 64.96, H 8.90, N 3.02. **Q16.b.** Yield: 98 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.86 (t, 3H, CH_3, ^3J = 6.9 Hz), 1.22-1.54 (m, 26H, CH_2), 2.08 (quintet, 2H, $NCH_2C\mathbf{H}_2$, ^5J = 6.9 Hz), 5.05 (t, 2H, NCH_2, ^3J = 7.8 Hz), 7.97-8.02 (m, 1H, H-aryl), 8.08-8.30 (m, 4H, H-aryl), 8.94 (d, 1H, H-aryl, J_o = 8.4 Hz), 9.48 (d, 1H, H-aryl, J_o = 5.4 Hz). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.23, 22.80, 26.56, 29.20, 29.47, 29.63, 29.71, 29.80, 30.32, 32.03, 58.66, 118.31, 122.59, 130.26, 130.33, 131.28, 136.21, 137.77, 147.69, 149.70. Calculated for (%) $C_{25}H_{40}BF_4N{\cdot}0.5H_2O$: C 66.67, H 9.18, N 3.11. Found: C 66.70, H 10.26, N 2.94. **Q17.b.** Yield: 88 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.75-1.10 (m, 3H, CH_3), 1.11-1.78 (m, 28H, CH_2), 1.92-2.64 (m, 2H, $NCH_2C\mathbf{H}_2$), 4.96-5.43 (m, 2H, NCH_2), 7.93-8.33 (m, 5H, H-aryl), 9.03-9.07 (m, 1H, H-aryl), 9.50-9.55 (m, 1H, H-aryl). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.23, 22.79, 26.55, 29.20, 29.47, 29.80, 30.32, 32.02, 58.65, 118.31, 122.56, 130.34, 131.29, 126.23, 137.77, 147.72, 149.67. Calculated for (%) $C_{26}H_{42}BF_4N$: C 68.57, H 9.30, N 2.37. Found: C 68.21, 9.09, 2.65. **Q18.b.** Yield: 90 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.88 (t, 3H, CH_3, ^3J = 6.3 Hz), 1.24-1.50 (m, 30H, CH_2), 2.10 (quintet, 2H, NCH_2CH_2, ^5J = 6.3 Hz), 5.17 (t, 2H, NCH_2, ^3J = 7.2 Hz), 7.96-8.01 (m, 1H, H-aryl), 8.13-8.31 (m, 4H, H-aryl), 8.96 (d, 1H, H-aryl, J_o = 7.8 Hz), 9.83 (d, 1H, H-aryl, J_o = 4.2 Hz). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.22, 22.78, 26.56, 29.21, 29.45, 29.62, 29.75, 29.80, 30.34, 32.01, 58.59, 118.32, 122.58, 130.22, 130.32, 131.28, 136.20, 137.75, 147.68, 149.78. Calculated for (%) $C_{27}H_{44}BF_4N$: C 69.08, H 9.45, N 2.98, Found: C 68.95, H 10.98, N 3.04. **Q19.b.** Yield: 93 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.75-1.03 (m, 3H, CH_3), 1.07-1.74 (m, 32H, CH_2), 1.96-2.54 (m, 2H, $NCH_2C\mathbf{H}_2$), 4.90-5.45 (m, 2H, NCH_2), 7.94-8.33 (m, 5H, H-aryl), 9.06 (d, 1H, H-aryl, J_o = 7.5 Hz), 9.46 (d, 1H, H-aryl, J_o = 4.7 Hz). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.24, 22.80, 26.56, 29.21, 29.48, 29.65, 29.82, 30.31, 32.04, 58.68, 118.32, 122.57, 130.28, 130.34, 131.29, 136.23, 127.78, 147.74, 149.63. Calculated for (%) $C_{28}H_{46}BF_4N$: C 69.56, H 9.59, N 2.90. Found: 69.31, 9.45, N 2.73. **Q20.b.** Yield: 89 %. δ_H (300 MHz, $CDCl_3$, 25 °C

TMS): 0.88 (t, 3H, CH_3, ^{3}J = 6.9 Hz), 1.04-1.47 (m, 34H, CH_2), 2.08 (quintet, 2H, $NCH_2C\mathbf{H}_2$, ^{5}J = 7.7 Hz), 5.12 (t, 2H, NCH_2, ^{3}J = 7.5 Hz), 7.94-7.99 (m, 1H, H-aryl), 8.10-8.32 (m, 4H, H-aryl), 9.00 (d, 1H, H-aryl, J_o = 8.1 Hz), 9.63 (d, 1H, H-aryl, J_o = 5.4 Hz). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.23, 22.79, 26.56, 29.21, 29.47, 29.64, 29.81, 30.32, 32.03, 58.65, 118.31, 122.57, 130.25, 130.33, 131.28, 136.21, 137.76, 147.71, 149.68. Calculated for (%) $C_{29}H_{48}BF_4N{\cdot}0.5H_2O$: C 68.74, H 9.75, N 2.76. Found: C 68.73, H 10.61, N 2.74. **Q22.b.** Yield: 85 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.81 (t, 3H, CH_3, ^{3}J = 6.8 Hz), 1.18-1.54 (m, 38H, CH_2), 2.01 (quintet, 2H, $NCH_2C\mathbf{H}_2$, ^{5}J = 7.0 Hz), 5.09 (t, 2H, NCH_2, ^{3}J = 6.9 Hz), 7.87-7.92 (m, 1H, H-aryl), 8.06-8.25 (m, 4H, H-aryl), 8.94 (d, 1H, H-aryl, J_o = 7.5 Hz), 9.68 (d, 1H, H-aryl, J_o = 5.0 Hz). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.25, 22.81, 26.57, 29.22, 29.48, 29.65, 29.74, 29.78, 30.32, 32.04, 58.69, 118.31, 122.60, 130.27, 130.33, 131.28, 136.21, 137.78, 147.71, 149.68. Calculated for (%) $C_{31}H_{52}BF_4N{\cdot}0.5H_2O$: C 69.65, H 9.99, N 2.62. Found: C 69.46, H 10.01, N 2.44. **IQ12.b.** Yield: 61 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.84 (t, 3H, CH_3, ^{3}J = 6.9 Hz), 1.12-1.36 (m, 18H, CH_2), 2.07 (quintet, 2H, $NCH_2C\mathbf{H}_2$, ^{5}J = 7.2 Hz), 4.93 (t, 2H, NCH_2, ^{3}J = 7.2 Hz), 7.90-7.95 (m, 1H, H-aryl), 8.07-8.15 (m, 2H, H-aryl), 8.32 (d, 1H, H-aryl, J_o = 6.6 Hz), 8.58-8.66 (m, 2H, H-aryl), 10.55 (s, 1H, H-aryl). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.18, 22.73, 26.22, 29.15, 29.38, 29.42, 29.57, 29.64, 31.88, 31.95, 6192, 126.53, 127.18, 127.96, 131.28, 131.44, 134.41, 137.16, 137.38, 150.06. Calculated for (%) $C_{21}H_{32}BF_4N$: C 65.49, H 8.37, N 3.64. Found: C 65.44, H 9.45, N 3.62. **IQ14.b.** Yield: 84 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.87 (t, 3H, CH_3, ^{3}J = 6.9 Hz), 1.12-1.33 (m, 22H, CH_2), 2.06 (quintet, 2H, $NCH_2C\mathbf{H}_2$, ^{5}J = 6.3 Hz), 4.79 (t, 2H, NCH_2, ^{3}J = 6.5 Hz), 7.94-7.99 (m, 1H, H-aryl), 8.07-8.16 (m, 2H, H-aryl), 8.26-8.39 (m, 2H, H-aryl), 8.56-8.60 (m, 1H, H-aryl), 9.99 (s, 1H, H-aryl). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.21, 22.77, 26.23, 29.14, 29.44, 29.73, 31.77, 32.00, 62.17, 126.67, 127.22, 128.00, 131.13, 131.54, 134.32, 137.24, 137.41, 149.63. Calculated for (%) $C_{23}H_{36}BF_4N$: C 66.83, H 8.78, N

3.39. Found: C 67.13, H 8.69, N 3.40. **IQ16.b.** Yield: 89 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.87 (t, 3H, CH_3, ^3J = 6.9 Hz), 1.21-1.33 (m, 26H, CH_2), 2.07 (quintet, 2H, $NCH_2C\mathbf{H_2}$, ^5J = 6.9 Hz), 4.87 (t, 2H, NCH_2, ^3J = 6.5 Hz), 7.93-7.98 (m, 1H, H-aryl), 8.10-8.13 (m, 2H, H-aryl), 8.27-8.47 (m, 2H, H-aryl), 8.61-8.64 (m, 1H, H-aryl), 10.31 (s, 1H, H-aryl). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.22, 22.77, 26.23, 29.16, 29.45, 29.61, 29.74, 29.78, 31.84, 32.01, 62.04, 126.57, 127.20, 127.99, 131.23, 131.49, 134.35, 137.20, 137.39, 149.89. Calculated for (%) $C_{25}H_{40}BF_4N{\cdot}0.5H_2O$: C 66.67, H 9.18, N 3.11. Found: C 67.46, H 9.15, N 3.14. **IQ17.b.** Yield: 83 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.87 (t, 3H, CH_3, ^3J = 6.9 Hz), 1.21-1.33 (m, 28H, CH_2), 2.07 (quintet, 2H, $NCH_2C\mathbf{H_2}$, ^5J = 6.9 Hz), 4.87 (t, 2H, NCH_2, ^3J = 6.5 Hz), 7.93-7.98 (m, 1H, H-aryl), 8.10-8.13 (m, 2H, H-aryl), 8.27-8.47 (m, 2H, H-aryl), 8.61-8.64 (m, 1H, H-aryl), 10.31 (s, 1H, H-aryl). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.24, 22.80, 26.24, 29.16, 29.48, 29.64, 29.77, 29.82, 31.79, 32.04, 62.20, 126.62, 127.21, 128.02, 131.20, 131.57, 134.27, 137.25, 137.41, 149.71. Calculated for (%) $C_{26}H_{42}BF_4N$: C 68.57, H 9.30, N 3.08. Found: C 68.11, H 9.64, N 2.93. **IQ18.b.** Yield: 84 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.88 (t, 3H, CH_3, ^3J = 6.9 Hz), 1.22-1.33 (m, 30H, CH_2), 2.07 (quintet, 2H, $NCH_2C\mathbf{H_2}$, ^5J = 6.6 Hz), 4.83 (t, 2H, NCH_2, ^3J = 7.5 Hz), 7.93-7.98 (m, 1H, H-aryl), 8.12-8.16 (m, 2H, H-aryl), 8.27-8.43 (m, 2H, H-aryl), 8.60-8.62 (m, 1H, H-aryl), 10.18 (s, 1H, H-aryl). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.21, 22.77, 26.22, 29.15, 29.44, 29.62, 29.74, 29.79, 31.81, 32.00, 62.08, 126.61, 127.20, 127.98, 131.17, 131.49, 134.34, 137.20, 137.39, 149.76. Calculated for (%) $C_{27}H_{44}BF_4N$: C 69.08, H 9.45, N 2.98. Found: C 68.97, H 9.60, N 2.95. **IQ19.b.** Yield: 93 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.88 (t, 3H, CH_3, ^3J = 6.9 Hz), 1.22-1.31 (m, 32H, CH_2), 2.07 (quintet, 2H, $NCH_2C\mathbf{H_2}$, ^5J = 6.6 Hz), 4.84 (t, 2H, NCH_2, ^3J = 7.5 Hz), 7.93-7.98 (m, 1H, H-aryl), 8.12-8.17 (m, 2H, H-aryl), 8.29-8.43 (m, 2H, H-aryl), 8.59-8.62 (m, 1H, H-aryl), 10.20 (s, 1H, H-aryl). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.24, 22.80, 26.26, 29.17, 29.48, 29.64, 29.78, 29.83, 31.82, 32.04, 62.22, 126.62, 127.21, 128.03, 131.24, 131.58, 134.28, 137.26, 137.41, 149.79. Calculated for (%) $C_{28}H_{46}BF_4N\cdot0.5H_2O$: C 68.29, H 9.62, N 2.84. Found: C 68.33, H 9.71, N 2.78. **IQ20.b.** Yield: 43 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.88 (t, 3H, CH_3, ^3J = 6.8 Hz), 1.22-1.34 (m, 34H, CH_2), 2.08 (quintet, 2H, $NCH_2C\mathbf{H}_2$, ^5J = 6.9 Hz), 4.88 (t, 2H, NCH_2, ^3J = 7.5 Hz), 7.94-7.99 (m, 1H, H-aryl), 8.09-8.13 (m, 2H, H-aryl), 8.26-8.44 (m, 2H, H-aryl), 8.63-8.66 (m, 1H, H-aryl), 10.37 (s, 1H, H-aryl). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.22, 22.78, 26.24, 29.17, 29.45, 29.63, 29.75, 29.80, 31.85, 32.01, 62.03, 126.55, 127.19, 131.25, 131.49, 134.35, 137.19, 137.39, 149.94. Calculated for (%) $C_{29}H_{48}BF_4N$: C 70.01, H 9.72, N 2.82. Found: C 69.69, H 10.05, N 2.81. **IQ22.b.** Yield: 65 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.88 (t, 3H, CH_3, ^3J = 6.8 Hz), 1.22-1.37 (m, 38H, CH_2), 2.08 (quintet, 2H, $NCH_2C\mathbf{H}_2$, ^5J = 6.9 Hz), 4.88 (t, 2H, NCH_2, ^3J = 7.5 Hz), 7.93-7.99 (m, 1H, H-aryl), 8.06-8.14 (m, 2H, H-aryl), 8.28-8.44 (m, 2H, H-aryl), 8.65-8.67 (m, 1H, H-aryl), 10.39 (s, 1H, H-aryl). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.25, 22.81, 26.26, 29.18, 29.49, 29.65, 29.79, 29.84, 31.85, 32.05, 62.13, 126.51, 127.17, 128.04, 131.34, 131.58, 134.23, 137.25, 137.39, 149.98. Calculated for (%) $C_{31}H_{52}BF_4N\cdot H_2O$: C 68.50, H 10.01, N 2.58, Found: C 68.84, H 10.35, N 2.50.

Synthesis of the dodecyl sulfate salts. A solution of sodium dodecyl sulfate (2 eq.) in water was added to a solution of the appropriate bromide (1 eq.) in water. The mixture was refluxed for 2 h. After cooling the mixture to room temperature, chloroform was added and the mixture was stirred for 30 minutes. The organic phase was separated from the aqueous phase and the solvent was removed under reduced pressure. The products were dried overnight *in vacuo* at 50 °C. Light brown crystals were obtained. **Q8.c.** Yield: 72 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.84-0.90 (m, 6H, CH_3), 1.25-1.51 (m, 28H, CH_2), 1.67 (quintet, 2H, $O_3SOCH_2C\mathbf{H}_2$, ^5J = 7.3 Hz), 2.09 (quintet, 2H, $NCH_2C\mathbf{H}_2$, ^5J = 7.5 Hz), 4.06 (t, 2H, O_3SOCH_2, ^3J = 6.9 Hz), 5.21 (t, 2H, NCH_2, ^3J = 7.8 Hz), 7.93-7.98 (m, 1H, H-aryl), 8.17-8.30 (m, 4H, H-aryl), 8.95

(d, 1H, H-aryl, J_o = 8.1 Hz), 10.02 (d, 1H, H-aryl, J_o = 5.6 Hz). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.13, 14.22, 22.66, 22.78, 26.07, 26.57, 29.13, 29.21, 29.45, 29.56, 29.74, 30.42, 31.79, 32.01, 58.49, 67.75, 118.41, 122.98, 130.09, 130.15, 131.27, 135.91, 137.66, 147.45, 151.00. Calculated for (%) $C_{29}H_{49}NO_4S{\cdot}0.5H_2O$: C 67.40, H 9.75, N 2.71. Found: C 67.25, H 9.19, N 2.72. **Q12.c.** Yield: 91 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.85-0.90 (m, 6H, CH_3), 1.14-1.67 (m, 38H, CH_2), 2.05 (quintet, 2H, $NCH_2C\mathbf{H}_2$, ^5J = 6.9 Hz), 4.06 (t, 2H, O_3SOCH_2, ^3J = 6.8 Hz), 5.23 (t, 2H, NCH_2, ^3J = 7.7 Hz), 7.94-7.99 (m, 1H, H-aryl), 8.17-8.30 (m, 4H, H-aryl), 8.94 (d, 1H, H-aryl, J_o = 8.4 Hz), 10.10 (d, 1H, H-aryl, J_o = 5.8 Hz). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.22, 22.78, 26.07, 26.60, 29.28, 29.43, 29.46, 29.50, 29.57, 29.64, 29.69, 29.75, 30.45, 31.99, 32.02, 58.49, 67.75, 118.41, 122.94, 130.12, 130.15, 131.27, 134.94, 137.69, 147.42, 151.04. Calculated for (%) $C_{33}H_{57}NO_4S{\cdot}0.5H_2O$: C 69.19, H 10.20, N 2.44. Found: C 69.12, H 12.42, N 2.49. **Q14.c.** Yield: 90 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.85-0.90 (m, 6H, CH_3), 1.24-1.70 (m, 42H, CH_2), 2.09 (quintet, 2H, $NCH_2C\mathbf{H}_2$, ^5J = 7.0 Hz), 4.06 (t, 2H, O_3SOCH_2, ^3J = 6.9 Hz), 5.21 (t, 2H, NCH_2, ^3J = 7.8 Hz), 7.95-7.99 (m, 1H, H-aryl), 8.18-8.29 (m, 4H, H-aryl), 8.93 (d, 1H, H-aryl, J_o = 8.5 Hz), 10.07 (d, 1H, H-aryl, J_o = 5.7 Hz). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.21, 22.77, 26.07, 26.59, 29.28, 29.45, 29.50, 29.56, 29.64, 29.74, 30.43, 32.00, 58.47, 67.70, 118.42, 122.87, 130.11, 130.15, 131.28, 134.97, 137.66, 147.51, 150.94. Calculated for (%) $C_{35}H_{61}NO_4S{\cdot}0.5H_2O$: C 69.95, H 10.40, N 2.37. Found: C 70.31, H 11.19, N 2.41. **Q16.c.** Yield: 87 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.85-0.90 (m, 6H, CH_3), 1.15-1.68 (m, 46H, CH_2), 2.09 (quintet, 2H, $NCH_2C\mathbf{H}_2$, ^5J = 7.3 Hz), 4.06 (t, 2H, O_3SOCH_2, ^3J = 6.9 Hz), 5.24 (t, 2H, NCH_2, ^3J = 7.7 Hz), 7.95-7.98 (m, 1H, H-aryl), 8.17-8.31 (m, 4H, H-aryl), 8.99 (d, 1H, H-aryl, J_o = 8.2 Hz), 10.10 (d, 1H, H-aryl, J_o = 5.4 Hz). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.20, 22.76, 26.06, 26.58, 29.27, 29.44, 29.49, 29.55, 29.64, 29.73, 29.77, 30.44, 31.99, 58.43, 67.69, 118.42, 122.84, 130.13, 131.28, 135.98, 137.66, 147.50, 150.86. Calculated for (%) $C_{37}H_{65}NO_4S{\cdot}0.5H_2O$: C 70.95, H 10.58, N

2.33. Found: C 70.51, H 11.48, N 2.36. **Q17.c.** Yield: 85%. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.78-0.96 (m, 6H, CH_3), 1.15-1.68 (m, 48H, CH_2), 1.94-2.07 (m, 2H, $NCH_2C\mathbf{H}_2$), 3.97-4.17 (m, 2H, O_3SOCH_2), 5.14-5.34 (m, 2H, NCH_2), 7.91-7.99 (m, 1H, H-aryl), 8.16-8.32 (m, 4H, H-aryl), 9.07 (d, 1H, H-aryl, J_o = 8.1 Hz), 9.88-10.03 (m, 1H, H-aryl). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.24, 22.80, 26.09, 26.62, 29.30, 29.48, 29.53, 29.59, 29.67, 29.77, 29.82, 30.47, 32.04, 58.50, 67.74, 118.41, 122.98, 130.11, 130.16, 131.26, 135.92, 137.71, 147.36, 151.15. Calculated for (%) $C_{38}H_{67}NO_4S$: C 71.99, H 10.65, N 2.21. Found: 71.36, 10.70, N 2.06. **Q18.c.** Yield: 93 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.85-0.90 (m, 6H, CH_3), 1.15-1.69 (m, 50H, CH_2), 2.08 (quintet, 2H, $NCH_2C\mathbf{H}_2$, ^5J = 7.0 Hz), 4.06 (t, 2H, O_3SOCH_2, ^3J = 6.8 Hz), 5.21 (t, 2H, NCH_2, ^3J = 7.5 Hz), 7.95-7.98 (m, 1H, H-aryl), 8.17-8.30 (m, 4H, H-aryl), 8.97 (d, 1H, H-aryl, J_o = 8.2 Hz), 10.01 (d, 1H, H-aryl, J_o = 5.4 Hz). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.22, 22.78, 26.06, 26.60, 29.29, 29.46, 29.52, 29.56, 29.67, 29.75, 29.80, 30.43, 32.02, 58.48, 67.78, 118.42, 122.93, 130.08, 130.15, 131.27, 135.91, 137.66, 147.48, 150.93. Calculated for (%) $C_{39}H_{69}NO_4S{\cdot}H_2O$: C 70.33, H 10.74, N 2.10. Found: C 70.68, H 10.50, N 2.22. **Q19.c.** Yield: 75 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.74-0.95 (m, 6H, CH_3), 1.02-1.758 (m, 52H, CH_2), 1.92-2.17 (m, 2H, $NCH_2C\mathbf{H}_2$), 3.95-4.16 (m, 2H, O_3SOCH_2), 5.09-5.31 (m, 2H, NCH_2), 7.83-7.02 (m, 1H, H-aryl), 8.16-8.32 (m, 4H, H-aryl), 8.97-9.19 (m, 1H, H-aryl), 9.83-9.99 (m, 1H, H-aryl). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.22, 22.79, 26.08, 26.61, 29.29, 29.47, 29.58, 29.77, 29.81, 30.45, 32.03, 58.49, 67.73, 118.41, 122.95, 130.15, 131.27, 135.92, 137.70, 147.41, 151.11. Calculated for (%) $C_{40}H_{71}NO_4S$: C 72.57, H 10.81, N 2.12. Found: C 72.69, H 10.31, N 1.99. **Q20.c.** Yield: 61 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.83-0.87 (m, 6H, CH_3), 1.23-1.69 (m, 54H, CH_2), 2.06 (quintet, 2H, $NCH_2C\mathbf{H}_2$, ^5J = 7.6 Hz), 4.04 (t, 2H, O_3SOCH_2, ^3J = 6.8 Hz), 5.19 (t, 2H, NCH_2, ^3J = 7.4 Hz), 7.90-7.97 (m, 1H, H-aryl), 8.15-8.27 (m, 4H, H-aryl), 8.92 (d, 1H, H-aryl, J_o = 8.2 Hz), 10.03 (d, 1H, H-aryl, J_o = 5.3 Hz). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS):

14.20, 22.77, 26.05, 26.58, 29.28, 29.44, 29.74, 29.79, 30.42, 32.00, 58.46, 67.72, 118.41, 122.88, 130.14, 131.27, 135.95, 137.65, 147.51, 150.89. Calculated for (%) $C_{41}H_{73}NO_4S$: C 72.84, H 10.88, N 2.07. Found: C 72.65, H 10.90, N 1.99. **Q22.c.** Yield: 72 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.83-0.87 (m, 6H, CH_3), 1.23-1.78 (m, 58H, CH_2), 1.97-2.16 (m, 2H, $NCH_2C\mathbf{H}_2$, ^5J = 7.6 Hz), 4.06 (t, 2H, O_3SOCH_2, ^3J = 6.6 Hz), 5.23 (t, 2H, NCH_2, ^3J = 6.9 Hz), 7.92-7.96 (m, 1H, H-aryl), 8.17-8.22 (m, 2H, H-aryl), 8.33-8.35 (m, 2H, H-aryl), 9.09 (d, 1H, H-aryl, J_o = 8.0 Hz), 10.02 (d, 1H, H-aryl, J_o = 5.2 Hz). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.23, 22.80, 26.08, 26.62, 29.29, 29.47, 29.57, 29.82, 30.47, 32.03, 58.48, 67.73, 118.42, 122.95, 130.15, 131.26, 135.92, 137.70, 147.38, 151.10. Calculated for $C_{43}H_{77}NO_4S$: C 73.35, H 11.02, N 1.99. Found: C 73.01, H 11.24, N 1.86. **IQ12.c.** Yield: 81 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.82-0.87 (m, 6H, CH_3), 1.18-1.68 (m, 38H, CH_2), 2.02 (quintet, 2H, $NCH_2C\mathbf{H}_2$, ^5J = 6.9 Hz), 4.08 (t, 2H, O_3SOCH_2, ^3J = 6.9 Hz), 4.86 (t, 2H, NCH_2, ^3J = 7.4 Hz), 7.84-7.90 (m, 1H, H-aryl), 8.03-8.07 (m, 2H, H-aryl), 8.24 (d, 1H, H-aryl, J_o = 6.8 Hz), 8.51-8.68 (m, 2H, H-aryl), 10.40 (s, 1H, H-aryl). δ_C (150 MHz, $CDCl_3$, 25 °C, TMS): 14.21, 22.78, 22.79, 26.10, 26.27, 29.24, 29.44, 29.47, 29.51, 29.58, 29.65, 29.70, 29.72, 29.76, 29.80, 31.95, 32.01, 32.03, 61.90, 67.83, 126.32, 126.97, 128.12, 131.29, 131.79, 134.51, 136.99, 137.17. Calculated for (%) $C_{33}H_{57}NO_4S$: C 70.29, H 10.19, N 2.48. Found: C 70.33, H 9.80, N 2.45. **IQ14.c.** Yield: 87 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.87-0.91 (m, 6H, CH_3), 1.23-1.72 (m, 42H, CH_2), 2.07 (quintet, 2H, $NCH_2C\mathbf{H}_2$, ^5J = 6.9 Hz), 4.11 (t, 2H, O_3SOCH_2, ^3J = 6.8 Hz), 4.91 (t, 2H, NCH_2, ^3J = 7.4 Hz), 7.91-7.96 (m, 1H, H-aryl), 8.06-8.11 (m, 2H, H-aryl), 8.26 (d, 1H, H-aryl, J_o = 6.8 Hz), 8.48-8.75 (m, 2H, H-aryl), 10.51 (s, 1H, H-aryl). δ_C (150 MHz, $CDCl_3$, 25 °C, TMS): 14.22, 22.80, 26.11, 26.28, 29.24, 29.47, 29.51, 29.59, 29.66, 29.73, 29.77, 29.80, 31.96, 32.04, 61.91, 67.84, 126.29, 126.96, 128.13, 131.32, 131.82, 132.49, 134.46, 137.02, 137.18. Calculated for (%) $C_{35}H_{61}NO_4S$: C 71.02, H 10.39, N 2.37. Found: C 70.67, H 10.43, N 2.30. **IQ16.c.** Yield: 96 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.82-0.92 (m, 6H, CH_3), 1.11-1.68 (m, 46H, CH_2), 2.03 (quintet, 2H, $NCH_2C\mathbf{H}_2$, ^5J = 7.0 Hz), 4.10 (t, 2H, O_3SOCH_2, ^3J = 6.8 Hz), 4.87 (t, 2H, NCH_2, ^3J = 7.4 Hz), 7.86-7.93 (m, 1H, H-aryl), 8.04-8.10 (m, 2H, H-aryl), 8.24 (d, 1H, H-aryl, J_o = 6.8 Hz), 8.49-8.72 (m, 2H, H-aryl), 10.48 (s, 1H, H-aryl). δ_C (150 MHz, $CDCl_3$, 25 °C, TMS): 14.22, 22.80, 26.10, 26.28, 29.24, 29.47, 29.51, 29.58, 29.66, 29.74, 29.77, 29.81, 31.95, 32.03, 61.90, 97.84, 126.30, 126.96, 128.12, 131.29, 131.79, 134.49, 137.00, 137.17. Calculated for (%) $C_{37}H_{65}NO_4S$: C 71.68, H 10.57, N 2.26. Found: C 71.54, H 10.88, N 2.35. **IQ17.c.** Yield: 89 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.87-0.88 (m, 6H, CH_3), 1.24-1.68 (m, 48H, CH_2), 2.03 (m, 2H, $NCH_2C\mathbf{H}_2$), 4.08-4.12 (m, 2H, O_3SOCH_2), 4.87-4.90 (m, 2H, NCH_2), 7.87-7.89 (m, 1H, H-aryl), 8.06 (m, 2H, H-aryl), 8.27 (d, 1H, H-aryl, J_o = 6.3 Hz), 8.58 (d, 1H, H-aryl, J_o = 6.3 Hz), 8.68 (d, 1H, H-aryl, J_o = 7.9 Hz), 10.45 (s, 1H, H-aryl). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.23, 22.80, 26.10, 26.27, 29.25, 29.48, 29.59, 29.67, 29.78, 29.82, 31.96, 32.04, 61.88, 67.83, 126.29, 126.94, 128.10, 131.28, 131.79, 134.48, 136.98, 137.14, 151.01. Calculated for (%) $C_{38}H_{67}NO_4S$: C 71.99, H 10.65, N 2.21. Found: C 71.87, H 10.12, N 2.09. **IQ18.c.** Yield: 91 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.85-0.90 (m, 6H, CH_3), 1.20-1.75 (m, 50H, CH_2), 2.06 (quintet, 2H, $NCH_2C\mathbf{H}_2$, ^5J = 7.1 Hz), 4.09 (t, 2H, O_3SOCH_2, ^3J = 6.9 Hz), 4.93 (t, 2H, NCH_2, ^3J = 7.4 Hz), 7.90-7.97 (m, 1H, H-aryl), 8.06-8.12 (m, 2H, H-aryl), 8.25 (d, 1H, H-aryl, J_o = 6.8 Hz), 8.50-8.74 (m, 2H, H-aryl), 10.30 (s, 1H, H-aryl). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.24, 22.81, 26.11, 26.28, 29.24, 29.49, 29.59, 29.68, 29.78, 29.83, 31.96, 32.05, 61.92, 67.85, 126.27, 126.94, 128.12, 131.31, 131.84, 134.42, 137.01, 137.14. Calculated for (%) $C_{39}H_{69}NO_4S{\cdot}0.5H_2O$: C 71.29, H 10.74, N 2.13. Found: C 71.62, H 11.66, N 2.22. **IQ19.c.** Yield: 82 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.86-0.88 (m, 6H, CH_3), 1.24-1.68 (m, 52H, CH_2), 2.04 (m, 2H, $NCH_2C\mathbf{H}_2$), 4.10 (t, 2H, O_3SOCH_2, ^3J = 6.5 Hz), 4.89 (t, 2H, NCH_2, ^3J = 6.5 Hz), 7.87-7.90 (m, 1H, H-aryl), 8.06 (m, 2H, H-aryl), 8.27 (d, 1H, H-aryl, J_o = 6.5 Hz), 8.58 (d, 1H, H-aryl, J_o = 6.5 Hz), 8.68 (d, 1H, H-aryl, J_o = 8.3

Hz), 10.45 (s, 1H, H-aryl). δ_C (100 MHz, $CDCl_3$, 25 °C, TMS): 14.22, 22.80, 26.11, 26.28, 29.25, 29.48, 29.52, 29.59, 29.67, 29.78, 29.83, 31.96, 32.04, 61.91, 67.84, 126.27, 126.95, 128.13, 131.30, 131.82, 134.47, 137.00, 137.17, 151.05. Calculated for (%) $C_{40}H_{71}NO_4S$: C 72.57, H 10.81, N 2.12. Found: C 72.09, H 10.58, N 1.99. **IQ20.c.** Yield: 87 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.85-0.90 (m, 6H, CH_3), 1.20-1.73 (m, 54H, CH_2), 2.03 (quintet, 2H, $NCH_2C\mathbf{H}_2$, ^5J = 7.1 Hz), 4.09 (t, 2H, O_3SOCH_2, ^3J = 6.9 Hz), 4.88 (t, 2H, NCH_2, ^3J = 7.4 Hz), 7.87-7.92 (m, 1H, H-aryl), 8.03-8.07 (m, 2H, H-aryl), 8.24 (d, 1H, H-aryl, J_o = 6.8 Hz), 8.50-8.70 (m, 2H, H-aryl), 10.43 (s, 1H, H-aryl). δ_C (150 MHz, $CDCl_3$, 25 °C, TMS): 14.21, 22.79, 26.10, 26.27, 29.24, 29.46, 19.52, 29.57, 29.67, 29.76, 31.94, 32.03, 61.88, 67.82, 126.32, 126.97, 128.10, 131.26, 131.75, 134.56, 136.96, 137.17. Calculated for (%) $C_{41}H_{73}NO_4S$: C 72.84, H 10.88, N 2.07. Found: C 72.68, H 12.05, N 2.16. **IQ22.c.** Yield: 82 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.87-0.89 (m, 6H, CH_3), 1.21-1.70 (m, 58H, CH_2), 2.03 (m, 2H, $NCH_2C\mathbf{H}_2$), 4.09 (t, 2H, O_3SOCH_2, ^3J = 6.5Hz), 4.88-4.91 (m, 2H, NCH_2), 7.89-7.90 (m, 1H, H-aryl), 8.05-8.07 (m, 2H, H-aryl), 8.27 (d, 1H, H-aryl, J_o = 6.3 Hz), 8.55-8.70 (m, 2H, H-aryl), 10.46 (s, 1H, H-aryl). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.24, 22.81, 26.10, 26.28, 29.25, 29.48, 29.51, 29.59, 29.68, 29.78, 29.83, 32.04, 61.89, 67.84, 126.26, 126.94, 128.10, 131.32, 131.81, 134.41, 137.02, 137.14, 151.03. Calculated for (%) $C_{43}H_{77}NO_4S \cdot H_2O$: C 71.52, H 11.03, N 1.94. Found: C 71.53, H 11.03, N 1.83.

Synthesis of the hexafluorophosphate salts. A solution of potassium hexafluorophosphate (2 eq.) in water was added to a solution of the appropriate bromide (1 eq.) in methanol/water (6:4). The mixture was refluxed for 3 h. On cooling to room temperature a light brown precipitate formed which was filtered off and washed with water. The precipitate was dissolved in chloroform and any residual KPF_6 was filtered off. After removing the solvent under reduced pressure, a light brown to white solid was obtained. The pure products were dried overnight *in vacuo* at 50 °C. **Q12.d.** Yield: 71 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.87 (t, 3H, CH_3, ^3J = 6.9 Hz), 1.23-1.48 (m, 18H, CH_2), 2.08 (quintet, 2H, $NCH_2C\mathbf{H}_2$, ^5J = 7.1 Hz), 5.01 (t, 2H, NCH_2, ^3J = 7.7 Hz), 7.95-8.00 (m, 1H, H-aryl), 8.03-8.31 (m, 4H, H-aryl), 8.99 (d, 1H, H-aryl, J_o = 8.2 Hz), 9.24 (d, 1H, H-aryl, J_o = 5.9 Hz). δ_C (150 MHz, $CDCl_3$, 25 °C, TMS): 14.23, 22.79, 26.54, 29.14, 29.44, 29.60, 29.70, 30.19, 32.01, 58.86, 118.24, 122.38, 130.36, 130.47, 131.28, 136.39, 137.85, 147.85, 148.98. Calculated for (%) $C_{21}H_{32}F_6NP$: C 56.88, H 7.27, N 3.16. Found: C 57.21, H 7.14, N 3.21. **Q14.d.** Yield: 77 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.87 (t, 3H, CH_3, ^3J = 6.3 Hz), 1.22-1.48 (m, 22H, CH_2), 2.07 (quintet, 2H, $NCH_2C\mathbf{H}_2$, ^5J = 7.5 Hz), 5.01 (t, 2H, NCH_2, ^3J = 7.7 Hz), 7.94-7.99 (m, 1H, H-aryl), 8.02-8.31 (m, 4H, H-aryl), 8.99 (d, 1H, H-aryl, J_o = 8.5 Hz), 9.23 (d, 1H, H-aryl, J_o = 5.8 Hz). δ_C (150 MHz, $CDCl_3$, 25 °C, TMS): 14.22, 22.79, 26.53, 29.15, 29.46, 29.62, 29.71, 29.75, 29.79, 30.18, 32.03, 58.84, 118.23, 122.34, 130.35, 130.46, 131.28, 136.40, 137.84, 147.87, 148.92. Calculated for (%) $C_{23}H_{36}F_6NP$: C 58.59, H 7.70, N 2.97. Found: C 58.61, H 6.98, N 2.99. **Q16.d.** Yield: 86 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.87 (t, 3H, CH_3, ^3J = 6.8 Hz), 1.20-1.45 (m, 26H, CH_2), 2.07 (quintet, 2H, $NCH_2C\mathbf{H}_2$, ^5J = 7.0 Hz), 5.01 (t, 2H, NCH_2, ^3J = 7.7 Hz), 7.95-8.00 (m, 1H, H-aryl), 8.02-8.31 (m, 4H, H-aryl), 8.99 (d, 1H, H-aryl, J_o = 8.3 Hz), 9.24 (d, 1H, H-aryl, J_o = 5.7 Hz). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.21, 22.77, 26.53, 29.19, 29.45, 29.61, 29.78, 30.29, 32.00, 65.63, 118.31, 122.50, 130.24, 130.34, 131.28, 136.25, 137.74, 147.77, 149.56. Calculated for (%) $C_{25}H_{40}F_6NP$: C 60.11, H 8.07, N 2.80. Found: C 60.00, H 7.38, N 2.74. **Q17.d.** Yield: 84 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.78-0.93 (m, 3H, CH_3), 1.04-1.52 (m, 28H, CH_2), 1.93-2.14 (m, 2H, $NCH_2C\mathbf{H}_2$), 4.95-4.99 (m, 2H, NCH_2), 7.92-8.00 (m, 2H, H-aryl), 8.17-8.29 (m, 3H, H-aryl), 9.00 (d, 1H, H-aryl, J_o = 8.1 Hz), 9.18-9.20 (m, 1H, H-aryl). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.26, 22.82, 26.56, 29.17, 29.50, 29.64, 29.74, 29.80, 29.84, 30.21, 32.06, 58.87, 118.24, 122.42, 130.35, 130.45, 131.28, 136.35, 137.84, 147.80, 149.05. Calculated for (%) $C_{26}H_{42}F_6NP$: C

60.80, H 8.24, N 2.73. Found: C 60.29, H 8.07, N 2.44. **Q18.d.** Yield: 75 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.88 (t, 3H, CH_3, ^3J = 6.8 Hz), 1.24-1.46 (m, 30H, CH_2), 2.08 (quintet, 2H, $NCH_2C\mathbf{H}_2$, ^5J = 7.4 Hz), 5.02 (t, 2H, NCH_2, ^3J = 7.7 Hz), 7.96-8.00 (m, 1H, H-aryl), 8.04-8.31 (m, 4H, H-aryl), 8.98 (d, 1H, H-aryl, J_o = 8.3 Hz), 9.26 (d, 1H, H-aryl, J_o = 5.6 Hz). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.26, 22.82, 26.56, 29.17, 29.49, 29.65, 29.74, 29.80, 29.84, 30.20, 32.06, 58.86, 118.23, 122.39, 130.35, 130.45, 131.28, 136.36, 137.83, 147.83, 149.01. Calculated for (%) $C_{27}H_{44}F_6NP$: C 61.46, H 8.41, N 2.65. Found: C 61.28, H 8.06, N 2.71. **Q19.d.** Yield: 84 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.75-0.90 (m, 3H, CH_3), 1.06-1.55 (m, 32H, CH_2), 1.93-2.13 (m, 2H, $NCH_2C\mathbf{H}_2$), 4.89-5.08 (m, 2H, NCH_2), 7.93-8.01 (m, 2H, H-aryl), 8.20-8.29 (m, 3H, H-aryl), 9.01 (d, 1H, H-aryl, J_o = 8.0 Hz), 9.15-9.25 (m, 1H, H-aryl). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.26, 22.82, 26.57, 29.17, 29.50, 29.65, 29.80, 29.85, 30.22, 32.06, 58.86, 118.24, 122.43, 130.35, 130.44, 131.28, 136.35, 137.84, 147.79, 149.07. Calculated for (%) C_{28}, $H_{46}F_6NP$: C 62.09, H 8.56, N 2.59. Found: C 61.89, H 8.57, 2.34. **Q20.d.** Yield: 75 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.86 (t, 3H, CH_3, ^3J = 6.8 Hz), 1.10-1.49 (m, 34H, CH_2), 2.07 (quintet, 2H, $NCH_2C\mathbf{H}_2$, ^5J = 7.1 Hz), 5.01 (t, 2H, NCH_2, ^3J = 7.7 Hz), 7.95-8.00 (m, 1H, H-aryl), 8.03-8.29 (m, 4H, H-aryl), 8.95 (d, 1H, H-aryl, J_o = 8.2 Hz), 9.29 (d, 1H, H-aryl, J_o = 5.5 Hz). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.26, 22.82, 26.57, 29.17, 29.50, 29.65, 29.80, 29.85, 30.22, 32.06, 58.86, 118.24, 122.42, 130.34, 130.44, 131.28, 136.34, 137.84, 147.79, 149.08. Calculated for (%) $C_{29}H_{48}F_6NP$: C 62.68, H 8.71, N 2.52. Found: C 62.69, H 8.40, N 2.55. **Q22.d.** Yield: 75 %. δ_H (300 MHz, DMSO-d_6, 25 °C TMS): 0.83-0.86 (m, 3H, CH_3), 1.19-1.32 (m, 38H, CH_2), 1.92-1.98 (m, 2H, $NCH_2C\mathbf{H}_2$), 5.03-5.05 (m, 2H, NCH_2), 8.04-8.09 (m, 1H, H-aryl), 8.19 (t, 1H, H-aryl, J_o = 6.8 Hz), 8.28 (t, 1H, H-aryl, J_o = 7.4 Hz), 8.48-8.64 (m, 2H, H-aryl) 9.29 (d, 1H, H-aryl, J_o = 8.1 Hz), 9.54 (d, 1H, H-aryl, J_o = 4.8 Hz). δ_C (75 MHz, DMSO-d_6, 25 °C, TMS): 13.93, 22.09, 25.75, 28.49, 28.70, 28.83, 28.91, 29.00, 29.52, 31.29, 57.36, 118.92, 122.14, 129.75, 129.89, 130.76, 135.65, 137.41, 147.41, 149.60. Calculated for (%) $C_{31}H_{52}F_6NP$: C 63.79, H 8.98, H 2.40. Found: C 63.85, H 8.54, N 2.29. **IQ12.d.** Yield: 75 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.84-0.88 (m, 3H, CH_3), 1.18-1.31 (m, 18H, CH_2), 1.96-2.24 (m, 2H, $NCH_2C\mathbf{H}_2$), 4.96 (t, 2H, NCH_2, ^3J = 7.3 Hz), 7.90-7.94 (m, 1H, H-aryl), 8.10-8.14 (m, 2H, H-aryl), 8.27-8.46 (m, 3H, H-aryl), 9.61-9.65 (m, 1H, H-aryl). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.23, 22.79, 26.21, 29.08, 29.44, 29.59, 29.70, 31.65, 32.01, 62.36, 126.77, 127.30, 127.98, 130.92, 131.75, 134.04, 137.43, 137.51, 149.12. Calculated for $C_{21}H_{32}F_6NP$: C 56.88, H 7.27, N 3.16. Found: C 56.81, H 7.27, N 3.16. **IQ14.d.** Yield: 69 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.87 (t, 3H, CH_3, ^3J = 6.9 Hz), 1.20-1.32 (m, 22H, CH_2), 2.04 (quintet, 2H, $NCH_2C\mathbf{H}_2$, ^5J = 6.9 Hz), 4.70 (t, 2H, NCH_2, ^3J = 7.2 Hz), 7.95-7.99 (m, 1H, H-aryl), 8.12-8.14 (m, 2H, H-aryl), 8.25-8.47 (m, 3H, H-aryl), 9.65 (s, 1H, H-aryl). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.24, 22.08, 26.22, 29.09, 29.47, 29.61, 29.72, 29.76, 29.80, 31.66, 32.04, 62.37, 126.76, 127.29, 127.98, 130.93, 131.75, 134.03, 137.43, 137.50, 149.14. Calculated for (%) $C_{23}H_{36}F_6NP$: C 58.59, H 7.70, N 2.97. Found: C 58.26, H 7.08, N 2.93. **IQ16.d.** Yield: 74 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.86 (t, 3H, CH_3, ^3J = 6.9 Hz), 1.18-1.35 (m, 26H, CH_2), 2.04 (quintet, 2H, $NCH_2C\mathbf{H}_2$, ^5J = 6.6 Hz), 4.70 (t, 2H, NCH_2, ^3J = 7.5 Hz), 7.93-7.99 (m, 1H, H-aryl), 8.09-8.14 (m, 2H, H-aryl), 8.24-8.48 (m, 3H, H-aryl), 9.66 (s, 1H, H-aryl). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.25, 22.82, 26.23, 29.10, 29.49, 29.63, 29.73, 29.79, 29.83, 31.67, 32.05, 62.38, 126.76, 127.29, 127.98, 130.94, 131.75, 134.04, 137.43, 137.50, 149.15. Calculated for (%) $C_{25}H_{40}F_6NP$: C 60.11, H 8.07, N 2.80. Found: C 59.93, H 7.61, N 2.75. **IQ17.d.** Yield: 87 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.84-0.88 (m, 3H, CH_3), 1.18-1.36 (m, 28H, CH_2), 2.01-2.04 (m, 2H, $NCH_2C\mathbf{H}_2$), 4.69 (t, 2H, NCH_2, ^3J = 7.3 Hz), 7.90-7.94 (m, 1H, H-aryl), 8.10-8.11 (m, 2H, H-aryl), 8.26-8.42 (m, 3H, H-aryl), 9.62 (s, 1H, H-aryl). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.25, 22.82, 26.23, 29.11, 29.49, 29.64, 29.79, 29.84, 31.67, 32.05, 62.37, 126.75, 127.29, 127.99, 130.96, 131.75, 134.03, 137.42, 137.50, 149.15. Calculated for (%)

$C_{26}H_{42}F_6NP$: C 60.80, H 8.24, N 2.73. Found: C 60.46, H 8.30, N 2.46. **IQ18.d.** Yield: 60 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.86 (t, 3H, CH_3, ^3J = 6.9 Hz), 1.18-1.35 (m, 30H, CH_2), 2.03 (quintet, 2H, $NCH_2C\mathbf{H}_2$, ^5J = 5.4 Hz), 4.70 (t, 2H, NCH_2, ^3J = 7.5 Hz), 7.93-7.99 (m, 1H, H-aryl), 8.09-8.17 (m, 2H, H-aryl), 8.24-8.47 (m, 3H, H-aryl), 9.66 (s, 1H, H-aryl). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.25, 22.82, 26.23, 29.11, 29.49, 29.64, 29.79, 29.84, 31.68, 32.05, 62.40, 126.76, 127.30, 127.99, 130.97, 131.76, 134.06, 137.43, 137.50, 149.18. Calculated for (%) $C_{27}H_{44}F_6NP$: C 61.46, H 8.41, N 2.65. Found: C 61.59, H 8.00, N 2.64. **IQ19.d.** Yield: 93 %. δ_H (300 MHz, DMSO-d_6, 25 °C TMS): 0.81-0.88 (m, 3H, CH_3), 1.06-1.47 (m, 32H, CH_2), 1.96-2.07 (m, 2H, $NCH_2C\mathbf{H}_2$), 4.64-4.80 (m, 2H, NCH_2), 8.06-8.11 (m, 1H, H-aryl), 8.28-8.35 (m, 2H, H-aryl), 8.47-8.61 (m, 2H, H-aryl), 8.80-8.82 (m, 1H, H-aryl), 10.08 (s, 1H, H-aryl). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 13.94, 22.09, 25.49, 28.42, 28.70, 28.90, 29.02, 30.46, 31.29, 60.80, 125.88, 127.24, 130.35, 131.20, 136.86, 136.93, 149.96. Calculated for (%) $C_{28}H_{46}F_6NP$: C 62.09, H 8.56, N 2.59. Found: C 62.04, H 8.66, N 2.32. **IQ20.d.** Yield: 35 %. δ_H (300 MHz, $CDCl_3$, 25 °C TMS): 0.86 (t, 3H, CH_3, ^3J = 6.9 Hz), 1.17-1.35 (m, 34H, CH_2), 2.03 (quintet, 2H, $NCH_2C\mathbf{H}_2$, ^5J = 6.0 Hz), 4.70 (t, 2H, NCH_2, ^3J = 7.2 Hz), 7.94-7.99 (m, 1H, H-aryl), 8.09-8.17 (m, 2H, H-aryl), 8.24-8.48 (m, 3H, H-aryl), 9.67 (s, 1H, H-aryl). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.26, 22.82, 26.57, 29.17, 29.50, 29.65, 29.80, 29.85, 30.22, 32.06, 58.86, 118.54, 122.42, 130.34, 130.44, 131.28, 136.34, 137.84, 147.79, 149.08. Calculated for (%) $C_{29}H_{48}F_6NP$: C 62.68, H 8.71, N 2.52. Found: C 62.82, H 8.22, N 2.49. **IQ22.d.** Yield: 71 %. δ_H (300 MHz, DMSO-d_6, 25 °C TMS): 0.83-0.85 (m, 3H, CH_3), 1.02-1.61 (m, 38H, CH_2), 1.90-2.12 (m, 2H, $NCH_2C\mathbf{H}_2$), 4.69-4.71 (m, 2H, NCH_2), 7.96-8.09 (m, 1H, H-aryl), 8.28-8.35 (m, 2H, H-aryl), 8.47-8.60 (m, 2H, H-aryl), 8.80 (m, 1H, H-aryl), 9.67 (s, 1H, H-aryl). δ_C (75 MHz, DMSO-d_6, 25 °C, TMS): 13.93, 22.10, 25.51, 28.45, 28.71, 28.78, 29.02, 30.47, 31.30, 60.81, 125.88, 127.28, 130.35, 131.21, 134.91, 136.87, 136.93, 149.94. Calculated for (%) $C_{31}H_{52}F_6NP$: C 63.79, H 8.98, N 2.40. Found: C 63.81, H 9.05, N 2.34.

Synthesis of the iodide salts **Q1.e** and **IQ1.e**. A solution of iodomethane (1.5 eq.) in acetonitrile was added dropwise to a stirred quinoline or isoquinoline (1 eq.) solution in acetonitrile. The mixture was refluxed during 48 h and allowed to cool down to room temperature so that a precipitate formed. The precipitate was filtered off and washed with acetonitrile and diethylether. The product was purified by dissolving the powder in a small amount of dichloromethane and subsequently adding diethylether until precipitation occurred. Filtration resulted in white to light brown powders that were dried *in vacuo* at 50 °C. **Q1.e**. Yield: 79 %. δ_H (300 MHz, $CDCl_3$, 25 °C, TMS): 4.94 (s, 3H, NCH_3), 7.80-8.05 (m, 1H, H-aryl), 8.14-8.19 (m, 1H, H-aryl), 8.23-8.31 (m, 2H, H-aryl), 8.38-8.40 (m, 1H, H-aryl), 8.98-9.01 (m, 1H, H-aryl), 10.42-10.44 (m, 1H, H-aryl). δ_C (75 MHz, DMSO, 25 °C, TMS): 45.44, 119.16, 122.01, 129.17, 129.96, 130.31, 138.47, 138.30, 147.05, 150.18. Calculated for $C_{10}H_{10}IN$: C 44.30, H 3.72, N 5.17. Found: C 44.52, H 3.66, N 5.01. **IQ1.e**. Yield: 86 %. δ_H (300 MHz, $CDCl_3$, 25 °C, TMS): 4.78 (s, 3H, NCH_3), 7.92-7.97 (m, 1H, H-aryl), 8.08-8.17 (m, 2H, H-aryl), 8.35-8.37 (m, 1H, H-aryl), 8.61-8.64 (m, 1H, H-aryl), 8.69-8.72 (m, 1H, H-aryl), 10.73 (s, 1H, H-aryl). δ_C (75 MHz, DMSO, 25 °C, TMS): 47.98, 125.38, 127.01, 127.20, 130.13, 131.14, 135.86, 136.63, 136.68, 150.60. Calculated for $C_{10}H_{10}IN$: C 44.30, H 3.72, N 5.17. Found: C 44.73, H 3.91, N 5.05.

Synthesis of the sulfosuccinate salts. A solution of the sodium sulfosuccinate salt (1 eq.) in water was added to a solution of the appropriate bromide (1 eq.) in water. The mixture was refluxed for 2 h. After cooling the mixture to room temperature, chloroform was added and the mixture was stirred for 30 minutes. The organic phase was separated from the aqueous phase and the solvent was removed under reduced pressure. The products were dried overnight *in vacuo* at 50 °C. **Q1.f**. Yield: 95 %. δ_H (300 MHz, $CDCl_3$, 25 °C, TMS): 0.80-0.91 (m, 12H, CH_3), 1.22-1.43 (m, 16H, CH_2), 1.49-1.64 (m, 2H, $OCH_2C\mathbf{H}$), 3.08-3.32 (m, 2H, $C\mathbf{H}_2CHSO_3$), 3.89-4.07 (m, 4H, OCH_2), 4.14-4.19 (m, 1H, $CHSO_3$), 4.83 (s, 3H, NCH_3), 7.93-7.98 (m, 1H, H-aryl), 8.12-8.17 (m, 1H, H-aryl), 8.21-8.30 (m, 2H, H-aryl), 8.45 (d, 1H, H-aryl, J_o = 8.9 Hz), 9.01 (d, 1H, H-aryl, J_o = 8.3 Hz), 9.96 (d, 1H, H-aryl, J_o = 5.6 Hz). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 10.91, 10.98, 11.06, 14.19, 14.21, 23.08, 23.53, 23.78, 28.99, 29.01, 30.15, 30.21, 30.40, 30.44, 34.43, 38.62, 38.69, 38.79, 45.99, 62.13, 67.17, 67.78, 67.84, 118.81, 122.85, 129.60, 130.32, 130.64, 136.12, 138.69, 146.95, 152.00, 169.48, 171.82. Calculated for $C_{30}H_{47}NO_7S{\cdot}0.5H_2O$: C 62.69, H 8.42, N 2.44. Found: C 62.79, H 8.16, N 2.31. **Q4.f**. Yield: 87%. δ_H (300 MHz, $CDCl_3$, 25 °C, TMS): 0.81-0.99 (m, 15H, CH_3), 1.25-1.64 (m, 20H, CH_2 and $OCH_2C\mathbf{H}$), 2.00-2.10 (m, 2H, $NCH_2C\mathbf{H}_2$), 3.14-3.38 (m, 2H, $C\mathbf{H}_2CHSO_3$), 3.93-4.07 (m, 4H, OCH_2), 4.18-4.23 (m, 1H, $CHSO_3$), 5.21 (t, 2H, NCH_2, ^3J = 7.5 Hz), 7.91-7.97 (m, 1H, H-aryl), 8.15-8.24 (m, 2H, H-aryl), 8.33-8.38 (m, 2H, H-aryl), 9.07 (d, 1H, H-aryl, J_o = 8.3 Hz), 9.94-9.96 (m, 1H, H-aryl). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 10.89, 10.94, 11.03, 11.07, 13.65, 14.14, 14.17, 19.84, 23.05, 23.52, 23.76, 28.95, 28.98; 30.13, 30.19, 30.38, 30.42, 32.26, 34.51, 38.62, 38.68, 38.76, 38.78, 58.16, 62.15, 67.09, 67.68, 67.75, 118.43, 123.03, 130.10, 131.23, 135.94, 137.65, 147.23, 151.34, 169.43, 171.86. Calculated for $C_{33}H_{53}NO_7S{\cdot}H_2O$: C 63.33, H 8.86, N 2.24. Found: C 63.60, H 8.97, N 2.33. **Q1.g**. Yield: 92 %. δ_H (300 MHz, $CDCl_3$, 25 °C, TMS): 1.25-1.51 (m, 12H, CH_2), 1.69-1.79 (m, 8H, $OCHC\mathbf{H}_2$), 3.04-3.28 (m, 2H, $C\mathbf{H}_2CHSO_3$), 4.11-4.16 (m, 1H, $CHSO_3$), 4.72-4.80 (m, 2H, OCH), 4.83 (s, 3H, NCH_3), 7.93-7.98 (m, 1H, H-aryl), 8.11-8.16 (m, 1H, H-aryl), 8.21-8.29 (m, 2H, H-aryl), 8.48 (d, 1H, H-aryl, J_o = 8.9 Hz), 9.05 (d, 1H, H-aryl, J_o = 8.43 Hz), 9.94 (d, 1H, H-aryl, J_o = 5.6 Hz). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 23.69, 25.50, 31.36, 31.48, 31.58, 34.79, 46.00, 62.37, 72.88, 73.40, 118.89, 122.79,129.59, 130.30, 130.64, 136.13, 138.68, 147.05, 151.87, 168.72, 171.08. Calculated for $C_{26}H_{35}NO_7S$: C 61.76, H 6.98, N 2.77. Found: C 61.33, H 6.56, N 2.48. **Q1.h**. Yield: 91 %. δ_H (300 MHz, $CDCl_3$, 25 °C, TMS): 0.80-0.89 (m, 6H, CH_3), 1.22-1.35 (m, 12H, CH_2), 1.51-1.62 (m, 4H, $OCH_2C\mathbf{H}_2$), 3.03-3.27 (m, 2H, $C\mathbf{H}_2CHSO_3$), 3.99-4.16 (m, 5H, OCH_2 and $CHSO_3$), 4.80 (s, 3H, NCH_3), 7.90-7.95 (m, 1H, H-aryl), 8.11-8.18 (m, 1H, H-aryl), 8.21-8.29 (m, 2H, H-aryl), 8.44 (d, 1H, H-aryl, J_o = 8.9 Hz), 9.02 (d, 1H, H-aryl, J_o = 8.3 Hz), 9.88 (d, 1H, H-aryl, J_o = 5.7 Hz). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.11, 22.62, 25.53, 25.60, 28.55, 28.62, 31.52, 31.55, 34.38, 46.03, 62.06, 64.97, 65.57, 118.86, 122.75, 129.59, 130.30, 130.64, 136.14, 138.66, 147.11, 151.68, 169.43, 171.69. Calculated for $C_{29}H_{39}NO_7S{\cdot}0.5H_2O$: C 60.21, H 7.77, N 2.70. Found: C 60.59, H 8.19, N 2.62. **IQ1.f**. Yield: 89%. δ_H (300 MHz, $CDCl_3$, 25 °C, TMS): 0.82-0.91 (m, 12H, CH_3), 1.23-1.43 (m, 16H, CH_2), 1.50-1.63 (m, 2H, $OCH_2C\mathbf{H}$), 3.10-3.34 (m, 2H, $C\mathbf{H}_2CHSO_3$), 3.90-4.06 (m, 4H, OCH_2), 4.18-4.23 (m, 1H, $CHSO_3$), 4.64 (s, 3H, NCH_3), 7.86-7.92 (m, 1H, H-aryl), 8.06-8.07 (m, 2H, H-aryl), 8.24-8.27 (m, 1H, H-aryl), 8.58-8.63 (d, 2H, H-aryl), 10.27 (s, 1H, H-aryl). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 10.88, 10.94, 11.03, 11.07, 14.17, 23.05, 23.50, 23.75, 28.95, 28.97, 30.11, 30.18, 30.37, 30.40, 34.39, 38.60, 38.68, 38.75, 38.77, 48.49, 62.21, 67.24, 67.84, 67.91, 126.10, 129.98, 128.01, 131.25, 131.48, 136.90, 137.02, 151.46, 169.43, 171.73. Calculated for $C_{30}H_{47}NO_7S{\cdot}0.5H_2O$: C 62.69, H 8.42, N 2.44. Found: C 62.70, H 7.88, N 2.41. **IQ1.g**. Yield: 96%. δ_H (300 MHz, $CDCl_3$, 25 °C, TMS): 1.20-1.45 (m, 12H, CH_2), 1.48-1.75 (m, 8H, $OCH_2C\mathbf{H}$), 3.04-3.27 (m, 2H, $C\mathbf{H}_2CHSO_3$), 4.12-4.18 (m, 1H, $CHSO_3$), 4.64 (s, 3H, NCH_3), 4.68-4.77 (m, 2H, OCH), 7.85-7.89 (m, 1H, H-aryl), 8.04-8.06 (m, 2H, H-aryl), 8.24-8.26 (m, 1H, H-aryl), 8.59-8.61 (d, 2H, H-aryl), 10.27 (s, 1H, H-aryl). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 23.66, 23.70, 25.46, 31.31, 31.43, 31.60, 34.71, 48.55, 62.40, 73.04, 73.61, 126.08, 126.99, 128.00, 131.23, 131.46, 135.75, 136.88, 137.04, 151.44, 168.74, 171.00. Calculated for $C_{26}H_{35}NO_7S{\cdot}0.5H_2O$: C 60.68, H 7.05, N 2.72. Found: C 60.23, H 7.58, 2.56. **IQ1.h**. Yield: 91%. %. δ_H (300 MHz, $CDCl_3$, 25 °C, TMS): 0.80-0.89 (m, 6H, CH_3), 1.22-1.26 (m, 12H, CH_2), 1.52-1.64 (m, 4H, $OCH_2C\mathbf{H}_2$), 3.08-3.32 (m, 2H, $C\mathbf{H}_2CHSO_3$), 4.00-4.13 (m, 4H, OCH_2), 4.17-4.22 (m, 1H, $CHSO_3$), 4.63 (s, 3H, NCH_3), 7.84-7.89 (m, 1H, H-aryl), 8.04-8.05 (m, 2H, H-aryl), 8.23-8.25 (m, 1H, H-aryl), 8.58-8.63 (d, 2H, H-aryl), 10.28 (s, 1H, H-aryl). δ_C (75 MHz, $CDCl_3$, 25 °C, TMS): 14.20, 22.59, 22.62, 25.52, 25.60, 28.55, 28.62, 31.51, 31.53, 34.46, 48.45, 62.17, 65.01, 65.57, 126.10, 126.98, 128.01, 131.24, 131.46, 135.77, 136.90, 137.02, 151.48, 169.43, 171.67. Calculated for $C_{26}H_{39}NO_7S$: C 61.27, H 7.71, N 2.75. Found: C 60.99, H 7.57, N 2.63.

Figure S1. Close contacts in the crystal structure of compound **Q8.c**. The disorder of the *N*-octyl chain is omitted for clarity.

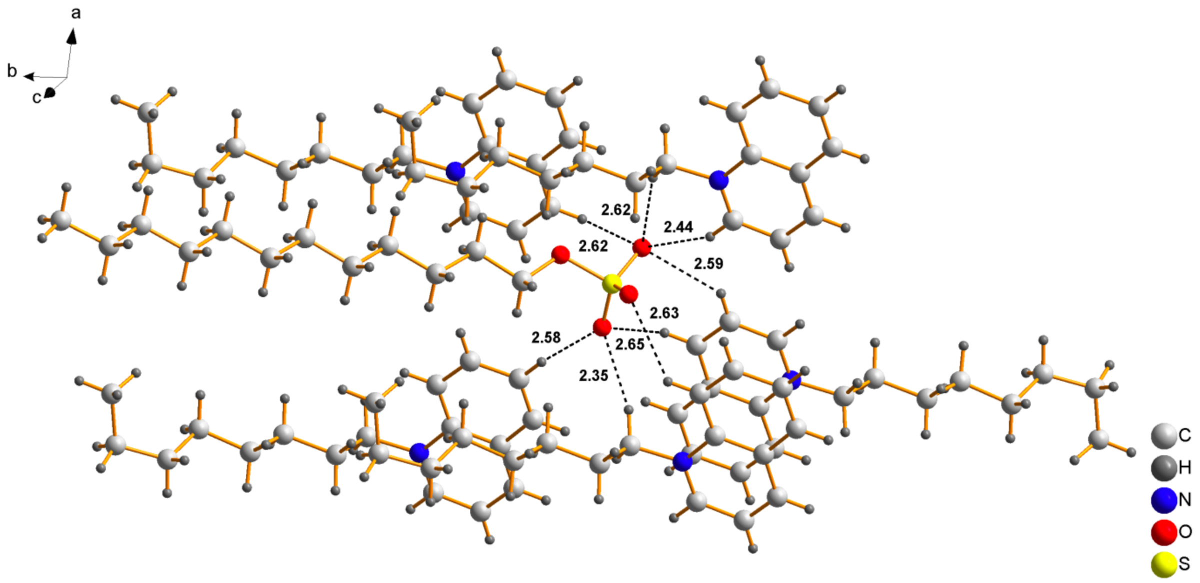


Figure S2. Packing in the crystal structure of **Q8.c**, viewed down the *a*-axis. The disorder of the *N*-octyl chain is omitted for clarity.

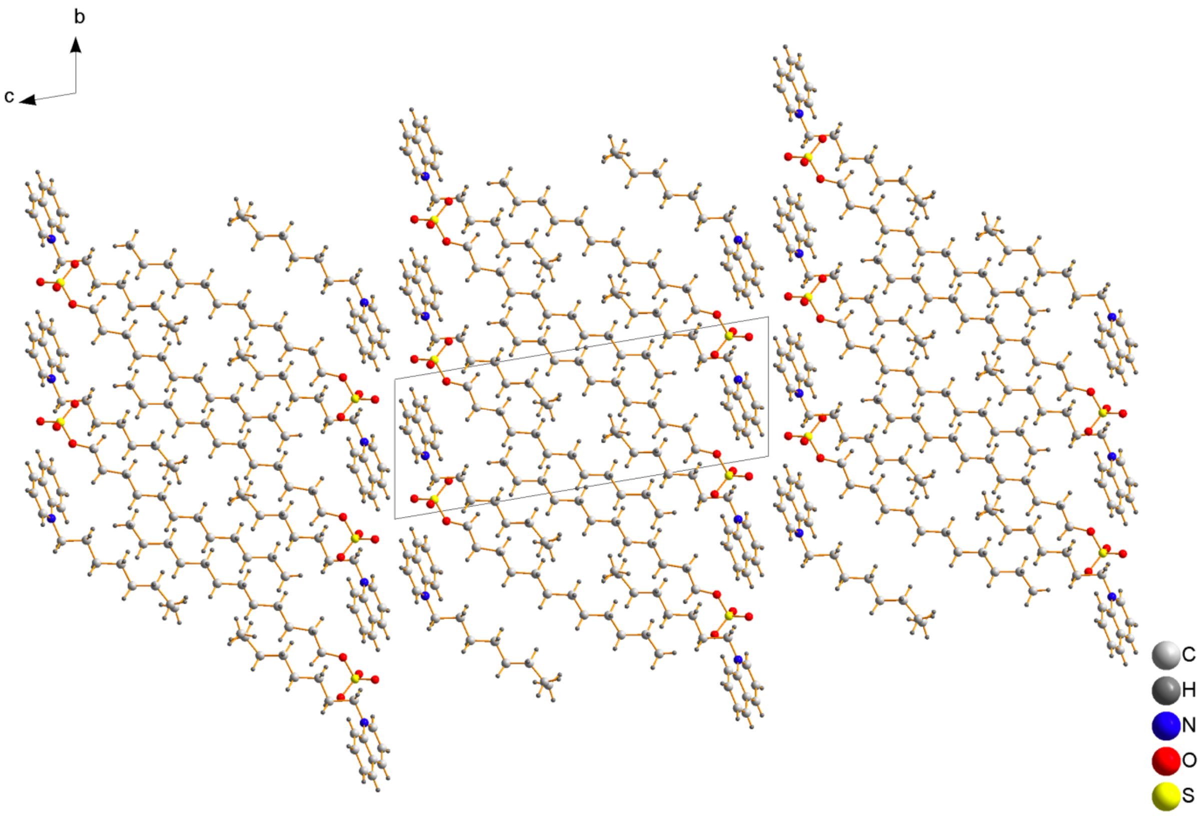


Figure S3. Close contacts in the crystal structure of compound **IQ8.a**.

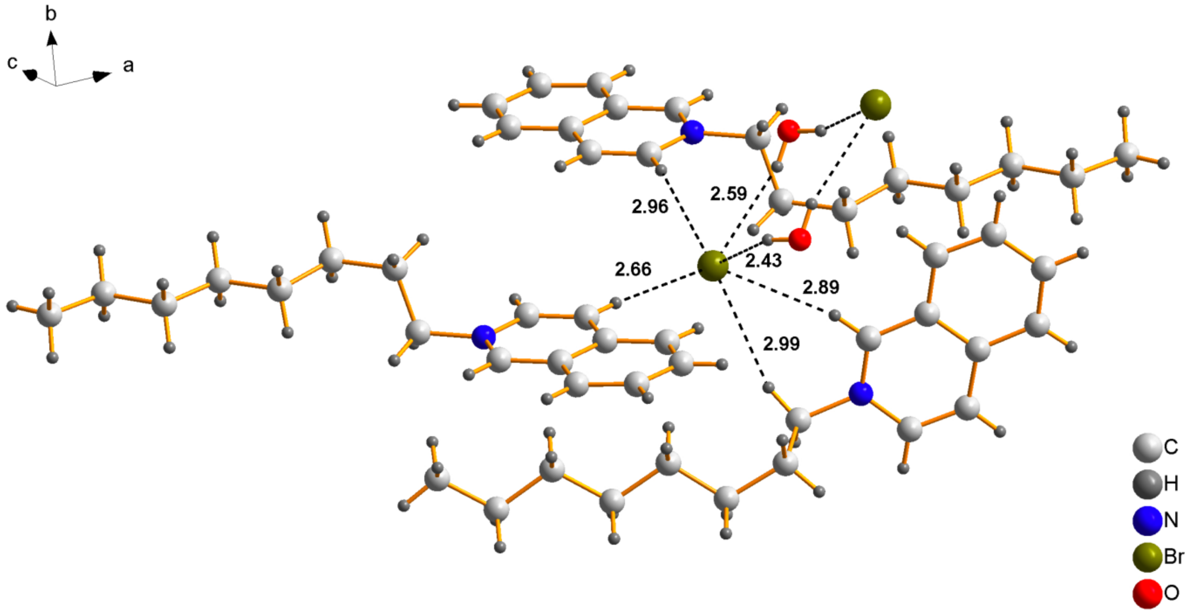


Figure S4.- Packing in the crystal structure of **IQ8.a**, viewed down the a-axis. The cyclic hydrogen bond network, around an inversion center, between the Br^- anions and water molecules is indicated.

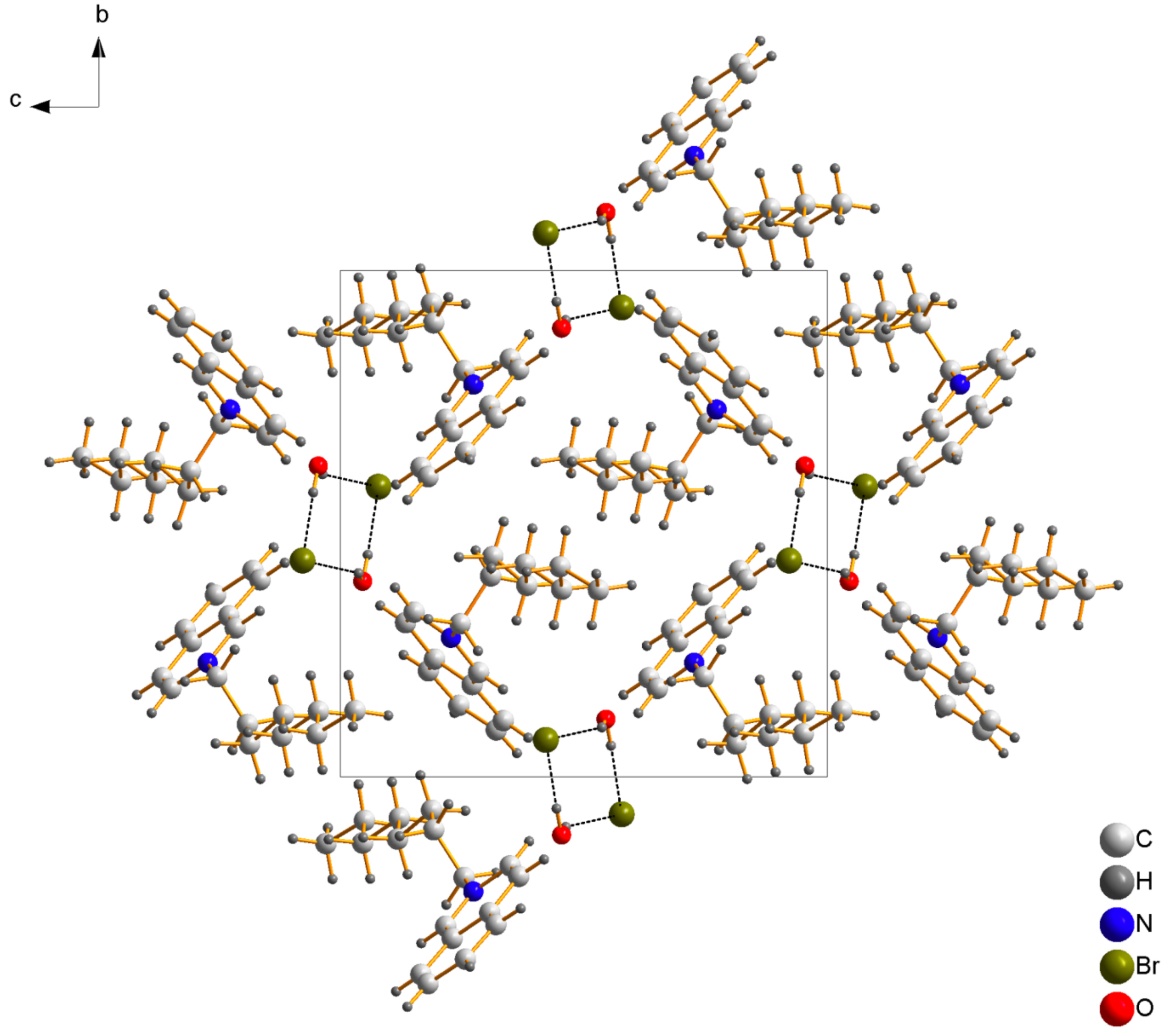


Table S1. Transition temperatures and thermal behavior of the liquid-crystalline quinolinium and isoquinolinium salts.

Compound	Transition[a]	T(°C)[b]	ΔH (kJ.mol^{-1})	ΔS (J.K^{-1}.mol^{-1})
Q16.a	Cr→I	112	55.5	144
	(I→SmA)	73[e]	0.3	1
Q17.a	$Cr_1 \rightarrow Cr_2$[c]	98[e]	-6.0	-16
	Cr_2→I	117	66.1	169
	(I→SmA)	74[f]	-[f]	-[f]
Q18.a	Cr→SmA	111	58.8	153
	SmA→I	169	0.4	0.9
Q19.a	$Cr_1 \rightarrow Cr_2$[c]	100	-2.3	-6
	$Cr_2 \rightarrow Cr_3$[c]	105	-0.4	-1
	Cr_3→SmA	119	73.5	188
	SmA→I	197	0.4	0.8
Q20.a	$Cr_1 \rightarrow Cr_2$	88[e]	25.8	71
	Cr_2→SmA	111[e]	43.8	114
	SmA→I	209[f]	-[f]	-[f]
Q22.a	$Cr_1 \rightarrow Cr_2$	71	0.6	2
	$Cr_2 \rightarrow Cr_3$	104	4.6	12
	Cr_3→SmA	116	53.7	138
	SmA→I	210[f]	-[f]	-[f]
IQ16.a	$Cr_1 \rightarrow Cr_2$	67[e]	0.7	2
	Cr_2→I	77	39.1	112
	(I→SmA)	60	0.2	0.5
IQ17.a	$Cr_1 \rightarrow Cr_2$	59	7.1	21
	$Cr_2 \rightarrow Cr_3$	73	3.1	9
	Cr_3→SmA	83	39.4	111
	SmA→I	99	0.3	0.7
IQ18.a	Cr→SmA	76	55.8	160
	SmA→I	129	0.7	2
IQ19.a	$Cr_1 \rightarrow Cr_2$	34	1.9	6
	$Cr_2 \rightarrow Cr_3$	82	56.4[d]	
	Cr_3→SmA	88		
	SmA→I	153	0.6	1
IQ20.a	Cr→SmA	81	59.7	169
	SmA→I	173	0.8	2
IQ22.a	$Cr_1 \rightarrow Cr_2$	73	3.0	9
	Cr_2→SmA	84	66.4	186
	SmA→I	197	0.6	1
Q16.b	$Cr_1 \rightarrow Cr_2$[c]	39	-12.7	-41
	Cr_2→I	77	25.3	72
	(I→SmA)	47	0.3	0.8
Q17.b	$Cr_1 \rightarrow Cr_2$[c]	33	-8.0	-26
	Cr_2→I	85	41.7	116
	(I→SmA)	60	0.3	0.9
Q18.b	$Cr_1 \rightarrow Cr_2$	44	2.2	7
	Cr_2→I	76	33.1	95
	(I→SmA)	56	0.3	0.8
Q19.b	$Cr_1 \rightarrow Cr_2$[c]	42	-4.8	-15
	Cr_2→SmA	91	49.7	137
	SmA→I	121	0.2	0.6
Q20.b	$Cr_1 \rightarrow Cr_2$[c]	50	-14.1	-44

	Cr_2→SmA	86[e]	38.1	106
	SmA→I	153	0.5	1
Q22.b	Cr_1→Cr_2[c]	58	-13.2	-40
	Cr_2→SmA	92	46.0	126
	SmA→I	190	0.9	2
IQ17.b	Cr_1→Cr_2[c]	34	-11.7	-38
	Cr_2→I	70	41.8	122
	(I→SmA)	48	0.1	0.3
IQ18.b	Cr→SmA	69	48.7	142
	SmA→I	85	0.3	0.7
IQ19.b	Cr_1→Cr_2[c]	48	-16.8	52
	Cr_2→SmA	78	48.7	139
	SmA→I	108	0.4	1
IQ20.b	Cr_1→Cr_2	63	35.8	107
	Cr_2→SmA	75	7.6	22
	SmA→I	137	0.6	1
IQ22.b	Cr→SmA	66	50.5	149
	SmA→I	155	0.6	1
Q12.c	Cr→SmA	87	65.9	183
	SmA→I	110	1.7	4
Q14.c	Cr→SmA	103	75.7	201
	SmA→I	127	2.0	5
Q16.c	Cr_1→Cr_2	88[e]	77.6[d]	
	Cr_2→SmA	97[e]		
	SmA→I	136	2.0	5
Q17.c	Cr_1→Cr_2[c]	80	-23.7	-67
	Cr_2→SmA	94	73.5	206
	SmA→I	139	2.0	4
Q18.c	Cr→SmA	85	65.3	182
	SmA→I	142	2.0	5
Q19.c	Cr_1→Cr_2[c]	75	-7.4	-21
	Cr_2→SmA	90	75.9	209
	SmA→I	143	2.1	5
Q20.c	Cr→SmA	84	69.4	192
	SmA→I	140	1.8	4
Q22.c	Cr→SmA	87	82.8	230
	SmA→I	146	1.8	4
IQ12.c	Cr_1→Cr_2	68	38.7	114
	Cr_2→SmA	82	11.3	32
	SmA→I	93	1.9	5
	(SmA→X)	78	16.1	46
IQ14.c	Cr_1→Cr_2	51	20.3	63
	Cr_2→SmA	79	41.2	117
	SmA→I	107	1.9	5
	(SmA→X)	76	14.7	42
IQ16.c	Cr_1→Cr_2	60[e]	19.7	59.2
	Cr_2→Cr_3[c]	65	-17.1	-51
	Cr_3→SmA	81	52.8	149
	SmA→I	116	2.0	5
	(SmA→X)	74	15.8	46
IQ17.c	Cr→SmA	85	52.7	147
	SmA→I	120	1.9	5

	(SmA→X)	74	15.9	46
IQ18.c	Cr→SmA	83	54.5	153
	SmA→I	120	1.9	5
	(SmA→X)	71	14.5	42
IQ19.c	Cr_1→Cr_2[c]	56	-8.0	-24
	Cr_2→Cr_3	73[e]	49.9[d]	
	Cr_3→SmA	77[e]		
	SmA→I	125	1.7	4
	(SmA→X)	69	16.2	47
IQ20.c	Cr_1→Cr_2	68	11.9	35
	Cr_2→SmA	80	48.5	137
	SmA→I	120	1.8	5
	(SmA→X)	70	15.6	46
IQ22.c	Cr→SmA	84	65.2	183
	SmA→I	125	1.6	4
Q20.d	Cr_1→Cr_2[c]	74	-15.9	-46
	Cr_2→SmA	90	51.3	141
	SmA→I	102	0.3	0.7
Q22.d	Cr_1→Cr_2[c]	69	-13.0	-38
	Cr_2→SmA	98	69.3	187
	SmA→I	139	0.5	1
IQ20.d	Cr_1→Cr_2	68	3.9	11.4
	Cr_2→SmA	98	59.5	160
	SmA→I	102	0.5	1
IQ22.d	Cr_1→Cr_2	81	11.3	32
	Cr_2→SmA	102	65.3	174
	SmA→I	133	0.8	2
Q1.f	SmA→I	57[e]	3.0	9
Q1.h	Cr→I	63[e]	26.5	79
	(I→SmA)	23	-2.5	-9
IQ1.f	SmA→I	35	0.89	3

[a] Abbreviations: Cr, Cr_1, Cr_2, Cr_3 = crystalline phase; X = crystalline phase or unidentified highly ordered smectic phase; SmA = smectic A phase; I = isotropic phase. [b] Onset temperatures obtained by DSC at heating/cooling rates of 10 °C min^{-1} (He atmosphere). For **Q16.a-Q22.a**, **IQ16.a-IQ22.a**, **Q18.b** and **IQ18.b**, **Q12.c** and **Q16.c**, **Q1.f-Q1.g** and **IQ1.f** values were taken from the first heating run. For the other compounds values were taken from the second heating run. [c] This peak is due to an exothermic recrystallisation process. [d] As the transition peaks in the DSC thermogram were not fully resolved, the total enthalpy value ΔH for both transitions is given. [e] Peak temperature. [f] Not detected by DSC. The transition temperature was determined by POM.

Table S2: Transition temperatures and thermal behaviour of the quinolinium and isoquinolinium salts that do not show liquid-crystalline behaviour.

Compound	Transition[a]	T (°C)[b]	ΔH (kJ.mol^{-1})	ΔS (J.K^{-1}.mol^{-1})
Q4.a	Cr→I	157[e]	44.0	102
Q12.a	Cr→I	102[e]	31.2	83
Q14.a	Cr→I	108	49.4	130
IQ8.a	Cr→I	70	32.8	96
IQ10.a	liquid			
IQ12.a	Cr→I	68[e]	30.4	89
IQ14.a	Cr→I	72	33.3	96
Q12.b	Cr_1→Cr_2	25	1.8	6
	Cr_2→I	47[e]	13.5	42
Q14.b	Cr→I	68	23.3	68
IQ12.b	Cr→I	36	26.8	87
IQ14.b	Cr→I	54	36.0	110
IQ16.b	Cr→I	61	43.0	129
Q8.c	Cr→I	76	54.6	157
Q12.d	Cr_1→Cr_2[c]	37	-12.6	-41
	Cr_2→I	69	15.1	44
Q14.d	Cr_1→Cr_2[c]	22	-25.0	-85
	Cr_2→Cr_3	43	7.9	25
	Cr_3→Cr_4	68	11.0	32
	Cr_4→I	81	19.4	55
Q16.d	Cr_1→Cr_2[c]	55	-7.8	-24
	Cr_2→I	81	46.9	133
Q17.d	Cr_1→Cr_2[c]	54	-13.0	-40
	Cr_2→Cr_3	80	34.0	96
	Cr_3→I	86	23.3	65
Q18.d	Cr_1→Cr_2[c]	74	-6.8	-20
	Cr_1→I	86	42.3	118
Q19.d	Cr_1→Cr_2[c]	64	-12.7	-38
	Cr_2→I	87	56.3	156
IQ10.d	Cr→I	46[e]	14.5	46
IQ12.d	Cr→I	68	32.0	94
IQ14.d	Cr_1→Cr_2	12	1.8	6
	Cr_2→I	80	39.6	112
IQ16.d	Cr_1→Cr_2	36	1.8	7
	Cr_2→I	88	33.2	92
IQ17.d	Cr→I	95	51.5	140
IQ18.d	Cr_1→Cr_2	54	3.5	11
	Cr_2→I	93	51.2	140
IQ19.d	Cr→I	100	57.1	153
Q1.e	Cr→I	144	14.2	34
Q4.f	Cr→I	59[e]	10.8	32
Q1.g	Cr→I	131	29.2	73
IQ1.e	Cr_1→Cr_2[c]	84	-1.8	-5
	Cr_2→I	158	16.3	38
IQ1.g	liquid			
IQ1.h	Cr→I	90[e]	35.9	99

[a] Abbreviations; Cr, Cr_1, Cr_2, Cr_3, Cr_4 = crystalline phase; I = isotropic phase. [b] Onset temperatures obtained by DSC at heating/cooling rates of 10 °C min^{-1} (He atmosphere). For **Q12.a**-**Q14.a**, **IQ8.a**-**IQ14.a**, **Q12.b**-**Q14.b** and **Q8.c**, **Q4.f**, **Q1.g** and **IQ1.g**-**IQ1.h** and values were taken from the first heating run. For the other compounds values were taken from the second heating run. [c] This peak is due to an exothermic recrystallisation process. [d] As the transition peaks in the DSC thermogram were not fully resolved, the total enthalpy value ΔH for both transitions is given. [e] Peak temperature. [f] Not detected by DSC. The transition temperature was determined by POM.

Figure S1: Structural model for the smectic A phase of compound **Q16.c**.