SUPPORTING INFORMATION

Iron Catalyzed Cross Coupling Reactions

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General. All reactions were carried out under Ar. The solvents used were purified by distillation over the drying agents indicated and were transferred under Ar: THF (Na/K alloy), Et₂O (Mg-anthracene), CH₂Cl₂ (CaH₂), MeCN, Et₃N, pyridine, DMF (CaH₂), MeOH (Mg), hexane, toluene (Na/K). Flash chromatography: Merck silica gel 60 (230-400 mesh). NMR: Spectra were recorded on a DPX 300 or AV 400 spectrometer (Bruker) in the solvents indicated; chemical shifts (δ) are given in ppm relative to TMS, coupling constants (J) in Hz. IR: Nicolet FT-7199 spectrometer, wavenumbers in cm⁻¹. MS (EI): Finnigan MAT 8200 (70 eV), HR-MS: Finnigan MAT 95. Melting points: Büchi melting point apparatus (uncorrected). Elemental analyses: H. Kolbe, Mülheim/Ruhr. All commercially available compounds (Lancaster, Fluka, Aldrich) were used as received.

Preparation of the Iron Salen Complex 4. A solution of (*R,R*)-(-)-*N,N'*-bis-(3,5-di-*tert*-butylsalicylidene)-1,2-cyclohexanediamine (1.0 g, 1.8 mmol) in THF (5 mL) is added to a suspension of NaH (86 mg, 3.6 mmol) in THF (5 mL) at 0°C. After the evolution of gas has ceased, the mixture is refluxed for 2 h and cooled to ambient temperature before FeCl₃ (427 mg, 2.6 mmol)

is introduced and reflux is continued for 4 h. Standard extractive work-up followed by evaporation of the solvent provides complex **4** as a dark-red solid (1056 mg, 95%). IR (film): ν = 2955, 2906, 2866, 1610, 1553, 1536, 1462, 1433, 1389, 1361, 1345, 1311, 1253, 1174 cm⁻¹. MS *m/z* (rel. intensity) 635 (100 [M⁺]), 620 (25), 600 (15), 584 (43), 569 (16), 277 (20).

Analytical and Spectroscopic Data of the Cross Coupling Products

mp = 28-29°C. ¹H NMR (300 MHz, CDCl₃): δ 7.92 (dd, 2H, *J* = 6.5, 1.8 Hz), 7.21 (dd, 2H, *J* = 6.4, 1.7 Hz), 3.87 (s, 3H), 2.63 (t, 2H, *J* = 7.7 Hz), 1.60 (m, 2H), 1.38-1.06 (m, 24H), 0.86 (t, 3H, *J* = 6.7 Hz). ¹³C NMR (75 MHz, CDCl₃): δ 167.6, 148.9, 130.0, 128.8, 128.0, 52.3, 36.4, 32.3, 31.5, 30.09, 30.07, 30.05, 30.00, 29.95, 29.9, 29.8, 29.7, 23.1, 14.5. IR: ν = 3091, 3061, 3031, 2925, 2854, 1726, 1611, 1574, 1510, 1466, 1435, 1415, 1377, 1309, 1277, 1191, 1178, 1109, 1021, 970, 854, 763, 722, 704 cm⁻¹. MS *m/z* (rel. intensity) 332 (100, [M⁺]), 301 (1), 163 (34), 150 (60), 149 (29).

¹H NMR (300 MHz, CDCl₃): δ 7.93 (d, *J* = 8.3 Hz, 2H), 7.21 (d, *J* = 8.2 Hz, 2H), 5.76 (m, 1H), 5.01 (dd, *J* = 3.5, 1.6 Hz, 1H), 4.95 (m, 2H), 4.91 (m, 1H), 3.87 (s, 3H), 2.06 (m, 2H), 1.62 (m, 2H), 1.42 (m, 2H); ¹³C NMR (75 MHz, CDCl₃): δ 167.1, 148.2, 138.6, 129.6, 128.4, 114.5, 51.9, 35.8, 33.5, 30.9, 28.4; MS (EI) *m/z* (rel intensity): 218 (26 [M⁺]), 187 (38), 175 (11), 162 (100), 159 (37), 149 (57), 145 (10), 131 (61), 117 (32), 105 (13), 91 (38). Anal. *calcd.* for C₂₃H₄₁N: C 77.03, H 8.31; *found*: C 76.92, H 8.23.

^1H NMR (300 MHz, CDCl_3): δ 7.91 (d, $J = 6.5$ Hz, 2H), 7.19 (d, $J = 8.2$ Hz, 2H), 4.56 (s, 2H), 3.86 (s, 3H), 3.47 (t, $J = 7.0$ Hz, 2H), 3.32 (s, 3H), 2.61 (t, $J = 7.7$ Hz, 2H), 1.57 (m, 4H), 1.29 (bs, 8H); ^{13}C NMR (75 MHz, CDCl_3): δ 167.1, 148.3, 129.5, 128.3, 127.6, 96.3, 67.7, 54.9, 51.8, 35.9, 31.0, 29.7, 29.3, 29.2, 29.0, 26.5; IR: $\nu = 3032, 2989, 2930, 2856, 2823, 1723, 1610, 1464, 1435, 1415, 1279, 1178, 1144, 1110, 1050, 919\text{ cm}^{-1}$; MS (EI) m/z (rel intensity): 308 (1.5, $[\text{M}^+]$), 276 (19), 244 (26), 231 (16), 215 (4), 173 (7), 162 (34), 149 (33), 121 (21), 91 (18), 75 (9), 55 (7), 45 (100), 29 (7). Anal. *calcd.* for $\text{C}_{18}\text{H}_{28}\text{O}_4$: C 70.10, H 9.15; *found*: C 69.88, H 9.20.

^1H NMR (300 MHz, CDCl_3): δ 7.92 (d, $J = 8.2$ Hz, 2H), 7.21 (d, $J = 8.2$ Hz, 2H), 3.87 (s, 3H), 2.63 (t, $J = 7.6$ Hz, 2H), 2.10 (m, 2H), 1.75 (t, $J = 2.6$ Hz, 3H), 1.60 (m, 2H), 1.25-1.50 (m, 8H); ^{13}C NMR (75 MHz, CDCl_3): δ 167.2, 148.4, 129.6, 128.4, 127.6, 79.3, 75.3, 51.9, 35.9, 31.0, 29.1, 29.0, 28.9, 28.7, 18.6, 3.4; IR: $\nu = 3031, 2995, 2931, 2856, 1723, 1610, 1435, 1279, 1108, 1020, 913, 855, 763, 734\text{ cm}^{-1}$; MS (EI) m/z (rel intensity): 272 (6, $[\text{M}^+]$), 257 (2), 240 (6), 213 (12), 205 (15), 202 (17), 189 (10), 163 (19), 162 (100), 159 (18), 150 (27), 149 (62), 131 (52). Anal. *calcd.* for $\text{C}_{18}\text{H}_{24}\text{O}_2$: C 79.37, H 8.88; *found*: C 79.40, H 8.83.

^1H NMR (300 MHz, CDCl_3): δ 7.55 (d, $J = 6.6$ Hz, 2H), 7.24 (d, $J = 8.35$ Hz, 2H), 2.63 (t, $J = 7.7$ Hz, 2H), 1.59 (m, 2H), 1.20-1.30 (m, 22H), 0.85 (t, $J = 6.8$ Hz, 3H); ^{13}C NMR (75 MHz, CDCl_3): δ 148.6, 132.1, 129.1, 119.2, 109.5, 36.1, 31.9, 30.9, 29.63, 29.60, 29.5, 29.4, 29.3, 29.1, 22.6, 14.1; IR: $\nu = 3065, 3002, 2963, 2920, 2963, 2852, 2254, 2227, 1929, 1813, 1608, 1506, 1459, 1416, 1382, 1294, 1182, 1127, 1042, 1021, 960, 908, 844, 825, 734, 650, 565, 521\text{ cm}^{-1}$; MS (EI) m/z (rel intensity): 299 (63 $[\text{M}^+]$), 284 (16), 271 (58), 257 (78), 243 (58), 229 (29), 215 (15), 200 (13), 186 (18), 172 (22), 158 (42), 145 (32), 130 (77), 116 (100), 102 (11), 57 (47), 43 (87). Anal. *calcd.* for $\text{C}_{21}\text{H}_{33}\text{N}$: C 84.22, H 11.11, N 4.68; *found*: C 84.22, H 11.08, N 4.70.

^1H NMR (300 MHz, CDCl_3): δ 7.51 (d, J = 8.0 Hz, 2H), 7.26 (d, J = 8.0 Hz, 2H), 2.64 (t, J = 7.8 Hz, 2H), 1.58 (m, 2H), 1.20-1.32(m, 22H), 0.87 (t, J = 6.8 Hz, 3H); ^{13}C NMR (75 MHz, CDCl_3): δ 147.0, 129.1, 128.7, 128.2, 127.8, 126.2, 125.2, 125.16, 125.11, 125.0, 122.6, 119.0, 35.8, 31.9, 31.2, 29.7, 29.68, 29.66, 29.65, 29.56, 29.45, 29.38, 29.23, 22.7, 14.1; IR: ν = 3068, 3043, 3019, 2924, 2854, 1619, 1467, 1417, 1378, 1326, 1164, 1126, 1068, 1019, 842, 820, 755, 722, 632, 613, 595 cm^{-1} ; MS (EI) m/z (rel intensity): 342 (41 [M^+]), 201 (8), 172 (8), 160 (100), 71 (15), 57 (27), 43 (29). Anal. *calcd.* for $\text{C}_{21}\text{H}_{33}\text{F}_3$: C 73.65, H 9.71, F 16.64; *found*: C 73.60, H 9.65, F 16.53.

^1H NMR (300 MHz, CDCl_3): δ 7.78 (d, J = 6.2 Hz, 2H), 7.78 (d, J = 6.8 Hz, 2H), 4.71 (hept., J = 6.3 Hz, 1H), 2.65 (t, J = 7.8 Hz, 2H), 1.60 (m, 2H), 1.15-1.40 (m, 28H), 0.85 (t, J = 6.8 Hz, 3H); ^{13}C NMR (75 MHz, CDCl_3): δ = 149.2, 134.7, 129.0, 128.7, 127.9, 127.7, 35.9, 31.9, 31.0, 29.69, 29.66, 29.64, 29.62, 29.5, 29.4, 29.3, 29.2, 22.8, 22.7, 14.2; IR: ν = 3065, 3046, 3031, 2982, 2924, 2854, 1599, 1496, 1409, 1366, 1190, 1177, 1109, 1088, 920, 880 cm^{-1} ; MS (EI) m/z (rel intensity): 396 (5, [M^+]), 354 (100), 318 (6), 297 (6), 273 (15), 213(14), 172 (70), 131 (18), 107 (22), 91 (88), 85 (23), 71 (33), 43 (83). Anal. *calcd.* for $\text{C}_{23}\text{H}_{40}\text{O}_3\text{S}$ (396.64): C 69.95, H 10.17; *found*: C 70.01, H 9.80.

^1H NMR (300 MHz, CDCl_3): δ 7.75 (d, J = 8.3 Hz, 2H), 7.25 (d, J = 7.8 Hz, 2H), 3.68 (quint., J = 6.9 Hz, 2H), 2.64 (t, J = 7.7 Hz, 2H), 1.61 (t, J = 7.3 Hz, 2H), 1.20-1.35 (m, 18H), 0.87 (t, J = 6.9 Hz, 3H); ^{13}C NMR (75 MHz, CDCl_3): δ 139.9, 134.9, 128.9, 128.7, 128.3, 35.5, 31.9, 31.7, 29.7, 29.6, 29.5, 29.4, 22.7, 22.6, 20.9, 14.1; IR: ν = 3065, 3027, 2971, 2931, 2858, 2872, 1918, 1739, 1653, 1599, 1574, 1498, 1458, 1405, 1369, 1333, 1199, 1169, 1146, 1123, 1089, 1024, 976, 881, 833, 817, 687, 580 cm^{-1} ; MS (EI) m/z (rel intensity): 325 (8 [M^+]), 310 (100), 268 (45), 225 (51), 161 (25), 91(31), 43 (13). Anal. *calcd.* for $\text{C}_{18}\text{H}_{31}\text{NO}_2\text{S}$: C 66.42, H 9.60, N 4.30 S 9.85; *found*: C 66.38, H 9.73, N 4.41, S 9.93.

$^1\text{H-NMR}$ (300 MHz, CDCl_3): δ 7.46 (d, J = 9.6 Hz, 2H), 7.0-7.35 (arom. H, 7H), 2.55 (t, J = 7.7 Hz, 2H), 1.1 (m, 2H), 1.13-1.25 (m, 22H), 0.77 (t, J = 6.5 Hz, 3H); ^{13}C NMR (75 MHz, CDCl_3): δ 143.4, 141.4, 141.1, 128.7, 128.6, 127.4, 127.3, 127.2, 127.1, 124.5, 36.1, 31.9, 31.6, 29.7, 29.6, 29.5, 29.39, 29.37, 22.7, 14.1; IR: ν = 3059, 3031, 2953, 2924, 2853, 1600, 1576, 1480, 1466, 1456, 1420, 1377, 908, 755, 735, 699 cm^{-1} ; MS (EI) m/z (rel intensity): 350 (100 [M^+]), 180 (8), 168 (66), 152 (7), 43 (15).

^1H NMR (300 MHz, CDCl_3): δ 7.71 (d, J = 7.6 Hz, 1H), 7.53 (d, J = 1.5 Hz, 1H), 7.0-7.35 (arom. H, 5H) 2.55 (t, J = 7.71 Hz, 1H), 1.48 (m, 2H), 1.05-1.2 (m, 23H), 0.68 (t, J = 6.7 Hz, 3H); ^{13}C NMR (75 MHz, CDCl_3): δ = 156.5, 154.7, 137.5, 127.7, 126.8, 122.5, 120.0, 111.6, 111.1, 35.9, 32.1, 31.9, 29.7, 29.6, 29.5, 29.4, 29.3, 22.7, 14.1; IR: ν = 3044, 3016, 2952, 2918, 2849, 1588, 1480, 1467, 1448, 1377, 1345, 1276, 1245, 1204, 1122, 1103, 1022, 931, 881, 842, 766, 723, 653, 616, 564 cm^{-1} ; MS (EI) m/z (rel intensity): 364 (69 [M^+]), 194 (4), 181 (100), 152 (3). Anal. *calcd.* for $\text{C}_{26}\text{H}_{30}\text{O}$: C 85.66, H 9.95, O 4.39; *found*: C 85.73, H 9.99.

^1H NMR (300 MHz, CDCl_3): δ 8.83 (dd, J = 4.24, 1.7 Hz, 1H), 8.07 (dd, J = 8.3, 1.1 Hz, 1H), 8.02 (d, J = 9.2 Hz, 1H), 7.60 (m, 2H), 7.34 (dd, J = 8.3, 4.3 Hz, 1H), 2.77 (t, J = 7.7 Hz, 2H), 1.68 (m, 2H), 1.20-1.40 (m, 24H), 0.85 (t, J = 6.7 Hz, 3H); ^{13}C NMR (75 MHz, CDCl_3): δ 149.3, 146.8, 141.4, 135.7, 131.2, 129.0, 128.3, 125.9, 121.0, 35.9, 31.9, 31.2, 29.6, 29.5, 29.4, 29.3, 29.2, 22.7, 14.1; IR: ν = 3013, 2923, 2853, 1712, 1626, 1595, 1500, 1466, 1377, 1321, 1234, 1118, 1030, 882, 835, 795, 771, 721, 615, 561 cm^{-1} ; MS (EI) m/z (rel intensity): 325 (72 [M^+]), 296 (18), 282 (18), 268 (15), 254 (12), 226 (8), 212 (8), 170 (10), 156 (83), 143 (100). Anal. *calcd.* for $\text{C}_{23}\text{H}_{35}\text{N}$: C 84.86, H 10.84, N 4.30; *found*: C 84.75, H 10.91, N 4.34.

$^1\text{H-NMR}$ (300 MHz, CDCl_3): δ = 7.43 (dd, J = 8.1, 7.31 Hz, 1H), 6.62 (d, J = 7.2 Hz, 1H), 6.50 (d, J = 8.1 Hz, 1H), 3.90 (s, 3H), 2.65 (t, J = 7.7 Hz, 2H), 1.70 (m, 2H), 1.23-1.35 (m, 22H), 0.87 (t, J = 6.7 Hz, 3H); $^{13}\text{C NMR}$ (75 MHz, CDCl_3): δ = 163.6, 160.4, 138.5, 115.0, 107.0, 53.1, 37.9, 31.9, 29.68, 29.60, 29.5, 29.4, 22.7, 14.1; IR: ν = 3065, 3005, 2924, 2853, 1599, 1580, 1466, 1441, 1413, 1377, 1298, 1265, 1228, 1188, 1147, 1188, 1075, 1037, 987, 948, 909, 797, 735, 650 cm^{-1} ; MS (EI) m/z (rel intensity): 151 (41 [M^+]), 150 (67), 136 (100), 121(19), 104(21), 93(11).

$^1\text{H NMR}$ (300 MHz, CDCl_3): δ 8.63 (d, J = 5.0 Hz, 2H), 7.1 (t, J = 4.9 Hz, 1H), 2.92 (t, J = 7.8 Hz, 2H), 1.1-1.3 (m, 22H), 0.83 (t, J = 6.7 Hz, 3H); $^{13}\text{C NMR}$ (75 MHz, CDCl_3): δ 171.6, 156.9, 118.3, 39.5, 31.9, 29.63, 29.60, 29.58, 29.48, 29.39, 29.35, 29.31, 28.7, 22.6, 14.1; IR: ν = 3078, 3045, 2918, 2851, 2736, 1989, 1803, 1717, 1627, 1563, 1471, 1455, 1439, 1426, 1380 cm^{-1} ; MS (EI) m/z (rel intensity): 276 (44 [M^+]), 163 (4), 149 (6), 136 (8), 121 (11), 107 (31), 94 (100).

$^1\text{H-NMR}$ (300 MHz, CDCl_3): δ = 7.22 (m, 1H), 6.88-6.95 (m, 2H), 2.61 (t, J = 7.7 Hz, 2H), 1.61 (m, 2H), 1.19-1.35(m, 22H), 0.87 (t, J = 6.7 Hz, 3H); $^{13}\text{C NMR}$ (75 MHz, CDCl_3): δ = 143.2, 128.3, 125.0, 119.7, 31.9, 30.6, 30.3, 29.67, 29.66, 29.60, 29.5, 29.4, 29.3, 22.7, 14.1; IR: ν = 3106, 3050, 2919, 2854, 1465, 1409, 1377, 1079, 858, 835, 770 cm^{-1} ; MS (EI) m/z (rel intensity): 280 (16 [M^+]), 111 (12), 98 (100), 69 (3), 55 (7), 43 (16).

$^1\text{H NMR}$ (300 MHz, CDCl_3): δ 7.98 (d, J = 8.1 Hz, 1H), 7.82 (d, J = 8.6 Hz, 1H), 7.44 (t, J = 7.7 Hz, 1H), 7.35 (t, J = 7.41 Hz, 1H), 3.11(t, J = 7.7 Hz, 2H), 1.86 (m, 24H), 0.86 (t, J = 6.7 Hz, 3H); $^{13}\text{C NMR}$ (75 MHz, CDCl_3): δ 149.2, 134.7, 129.0, 128.7, 127.9, 127.7, 35.9, 31.9, 31.0, 29.69, 29.66, 29.64, 29.62, 29.5, 29.4, 29.3, 29.2, 22.8, 22.7, 14.2; IR: ν = 3064, 3034, 2920, 2953, 2850, 2680, 1901, 1781, 1699, 1666, 1594, 1559, 1521, 1463, 1436, 1377, 1311, 1278, 1242, 1126, 1063, 1013, 934,

877, 798, 758, 728, 709 cm^{-1} ; MS (EI) m/z (rel intensity): 331 ($[\text{M}^+]$), 288, 204, 162, 149, 109, 69, 43. Anal. *calcd.* for $\text{C}_{21}\text{H}_{33}\text{NS}$: C 76.07, H 10.03, N 4.22, S 9.67; *found*: C 76.19, H 9.88, N 4.21, S 9.64.

^1H NMR (300 MHz, CDCl_3): δ 7.48 (dd, $J = 8.0, 7.4$ Hz, 1H), 6.73 (d, $J = 7.2$ Hz, 1H), 6.52 (d, $J = 8.3$ Hz, 1H), 3.91 (s, 3H), 2.93 (hept., 1H), 1.27 (d, $J = 6.9$ Hz, 6H). ^{13}C NMR (75 MHz, CDCl_3): δ 165.3, 163.1, 138.8, 112.9, 107.4, 52.9, 35.9, 22.2. IR: $\nu = 3066, 2965, 2907, 2871, 1595, 1580, 1464, 1414, 1288, 1255, 1031, 801$ cm^{-1} . MS m/z (rel. intensity) 151 (41, $[\text{M}^+]$), 150 (67), 136 (100), 121 (19), 104 (21), 93 (11).

mp = 64-66 $^{\circ}\text{C}$. ^1H NMR (400 MHz, CDCl_3): δ 8.41 (s, 1H), 6.81 (s, 1H), 3.14 (t, $J = 7.7$ Hz, 2H), 2.68 (s, 3H), 1.86 (m, 2H), 1.47-1.26 (m, 22H), 0.88 (m, 3H); ^{13}C NMR (100 MHz, CDCl_3) (DEPT): δ 164.68 (C), 155.19 (CH), 155.11 (C), 150.54 (C), 109.23 (CH), 31.75 (CH_2), 30.29 (CH_2), 29.51 (CH_2), 29.48 (CH_2), 29.46 (CH_2), 29.41 (CH_2), 29.27 (CH_2), 29.18 (CH_2), 29.09 (CH_2), 29.06 (CH_2), 25.95 (CH_2), 24.90 (CH_3), 22.51 (CH_2), 13.93 (CH_3); IR: $\nu = 3109, 2955, 2924, 2852, 1617, 1543, 1460, 1293$ cm^{-1} ; MS m/z (rel. intensity): 330 (21, $[\text{M}^+]$), 301 (4), 161 (41), 148 (100). Anal. *calcd.* for $\text{C}_{20}\text{H}_{34}\text{N}_4$: C 72.68, H 10.38; *found*: C, 72.49; H, 10.31.

mp = 25-27 $^{\circ}\text{C}$. ^1H NMR (400 MHz, CDCl_3): δ 8.73 (s, 1H), 8.08-8.02 (m, 2H), 7.75-7.67 (m, 2H), 3.00 (t, $J = 7.6$ Hz, 2H), 1.84 (m, 2H), 1.44-1.22 (m, 22H), 0.87 (m, 3H); ^{13}C NMR (100 MHz, CDCl_3) (DEPT): δ 157.68 (C), 145.80 (CH), 142.20 (C), 141.21 (C), 129.83 (CH), 129.15 (CH), 128.85 (CH), 128.82 (CH), 36.51 (CH_2), 31.89 (CH_2), 29.65 (CH_2), 29.63 (CH_2), 29.61 (CH_2), 29.58 (CH_2), 29.48 (CH_2), 29.42 (CH_2), 29.40 (CH_2), 29.31 (CH_2), 22.65 (CH_2), 14.06 (CH_3); IR: $\nu = 3087, 2916, 2848, 1563, 1492, 1464, 765$ cm^{-1} ; MS m/z (rel. intensity): 326 (16, $[\text{M}^+]$), 157 (11), 144 (100), 117 (2), 43 (4). Anal. *calcd.* for $\text{C}_{22}\text{H}_{34}\text{N}_2$: C 80.93, H 10.50; *found*: C, 80.86; H, 10.54.

mp = 59-60 °C. ^1H NMR (400 MHz, CDCl_3): δ 5.52 (s, 1H), 3.34 (bs, 3H), 3.27 (bs, 3H), 2.41 (m, 2H), 1.54 (m, 2H), 1.11-1.20 (m, 22H), 0.82 (m, 3H); ^{13}C NMR (100 MHz, CDCl_3) (DEPT): δ 162.49 (C), 155.05 (C), 152.60 (C), 99.91 (CH), 32.50 (CH_2), 31.77 (CH_2), 31.17 (CH_3), 29.50 (CH_2), 29.42 (CH_2), 29.30 (CH_2), 29.21 (CH_2), 29.12 (CH_2), 28.94 (CH_2), 27.75 (CH_3), 26.97 (CH_2), 22.54 (CH_2), 13.96 (CH_3); IR: ν = 2924, 2847, 1706, 1665, 1467 cm^{-1} ; MS m/z (rel. intensity): 336 (15, $[\text{M}^+]$), 167 (31), 154 (100), 127 (4), 97 (8). Anal. *calcd.* for $\text{C}_{20}\text{H}_{36}\text{N}_2\text{O}_2$: C 71.38, H 10.78; *found*: C, 71.24; H, 10.64.

mp = 54-56 °C. ^1H NMR (300 MHz, CDCl_3) δ 8.70 (m, 2H), 8.1 (d, J = 8.6 Hz, 2H), 7.84 (m, 1H), 7.59-7.47 (m, 4H), 3.32 (t, J = 7.6 Hz, 2H), 2.00 (m, 2H), 1.59-1.22 (m, 22H), 0.92 (m, 3H); ^{13}C NMR (100 MHz, CDCl_3) (DEPT): δ 171.38 (C), 160.01 (C), 150.66 (C), 138.47 (CH), 133.17 (CH), 130.25 (CH), 129.35 (CH), 128.55 (CH), 128.42 (CH), 126.59 (CH), 124.50 (CH), 122.48 (CH), 34.51 (CH_2), 31.91 (CH_2), 29.67 (CH_2), 29.58 (CH_2), 29.51 (CH_2), 29.35 (CH_2), 28.48 (CH_2), 22.67 (CH_2), 14.10 (CH_3); IR: ν = 3067, 2913, 2850, 1616, 1549, 1345, 761, 703 cm^{-1} ; MS m/z (rel. intensity): 402 (9, $[\text{M}^+]$), 233 (12), 220 (100), 205 (2), 117 (3), 43 (2). Anal. *calcd.* for $\text{C}_{28}\text{H}_{38}\text{N}_2$: C 83.53, H 9.51; *found*: C 83.37, H 9.40.

mp = 35-36 °C. ^1H NMR (400 MHz, CDCl_3): δ 8.14 (s, 1H), 2.76 (t, J = 8.0 Hz, 2H), 2.52 (s, 3H), 2.48 (s, 3H), 1.65 (m, 2H), 1.41-1.28 (m, 22H), 0.87 (m, 3H); ^{13}C NMR (100 MHz, CDCl_3) (DEPT): δ 154.99 (C), 150.04 (C), 148.45 (C), 140.52 (CH), 35.16 (CH_2), 31.92 (CH_2), 29.08 (CH_2), 29.65 (CH_2), 29.63 (CH_2), 29.55 (CH_2), 29.48 (CH_2), 29.35 (CH_2), 28.67 (CH_2), 22.68 (CH_2), 21.10 (CH_3), 21.02 (CH_3), 14.09 (CH_3); IR: ν = 2954, 2914, 2850, 1473, 1453, 1377, 1370 cm^{-1} ; MS m/z (rel. intensity): 304 (5, $[\text{M}^+]$), 289 (3), 135 (9), 122 (100). Anal. *calcd.* for $\text{C}_{20}\text{H}_{36}\text{N}_2$: C 78.88, H 11.92; *found*: C 78.77, H 11.86.

mp = 87-88 °C. ^1H NMR (400 MHz, CDCl_3): δ 8.09-8.03 (m, 2H), 7.77 (d, J =

8.7 Hz, 1H), 7. 45-7.47 (m, 3H), 7.37 (d, $J = 8.7$ Hz, 1H), 3.02 (t, $J = 6.7$ Hz, 2H), 1.81 (m, 2H), 1.44-1.20 (m, 22H), 0.88 (m, 3H); ^{13}C NMR (100 MHz, CDCl_3) (DEPT): δ 162.31 (C), 157.32 (C), 136.34 (C), 129.82 (CH), 128.96 (CH), 126.72 (CH), 124.16 (CH), 35.79 (CH_2), 31.91 (CH_2), 29.65 (CH_2), 29.63 (CH_2), 29.53 (CH_2), 29.51 (CH_2), 29.44 (CH_2), 29.34 (CH_2), 29.26 (CH_2), 22.67 (CH_2), 14.09 (CH_3); IR: $\nu = 3060, 2916, 2848, 1590, 1469, 1450, 747, 693$ cm^{-1} ; MS m/z (rel. intensity): 352 (11, $[\text{M}^+]$), 183 (20), 170 (100), 141 (2), 102 (3). Anal. *calcd.* for $\text{C}_{24}\text{H}_{36}\text{N}_2$: C 81.76, H 10.29; *found*: C 81.65, H 10.21. HRMS *calcd.* for $\text{C}_{24}\text{H}_{36}\text{N}_2$: 352.2879; *found*: 352.2879.

mp = 34-36 °C. ^1H NMR (400 MHz, CDCl_3): δ 8.43 (d, $J = 6.0$ Hz, 1H), 8.15 (d, $J = 8.2$ Hz, 1H), 7.80 (d, $J = 8.2$ Hz, 1H), 7.66 (bt, $J = 7.2$ Hz, 1H), 7.58 (bt, $J = 7.2$ Hz, 1H), 7.49 (d, $J = 6.0$ Hz, 1H) (m, 2H), 3.30 (t, $J = 7.9$ Hz, 2H), 1.86 (m, 2H), 1.49-1.22 (m, 22H), 0.87 (m, 3H); ^{13}C NMR (100 MHz, CDCl_3) (DEPT): δ 162.45 (C), 141.71 (CH), 136.31 (C), 129.79 (CH), 127.37 (CH), 126.93 (CH), 125.39 (CH), 119.13 (CH), 35.49 (CH_2), 31.91 (CH_2), 29.91 (CH_2), 29.82 (CH_2), 29.66 (CH_2), 29.63 (CH_2), 29.57 (CH_2), 29.53 (CH_2), 29.34 (CH_2), 22.67 (CH_2), 14.08 (CH_3); IR: $\nu = 3051$ br, 3049, 2916, 2848, 1563, 1502, 1468, 1386, 824, 749 cm^{-1} ; MS m/z (rel. intensity): 325 (8, $[\text{M}^+]$), 198 (3), 156 (17), 143 (100), 115 (3), 43 (4). Anal. *calcd.* for $\text{C}_{23}\text{H}_{35}\text{N}$: C 84.86, H 10.84; *found*: C 84.82, H 10.97.

mp = 51-52 °C. ^1H NMR (400 MHz, CDCl_3): δ 3.96 (bs, 6H), 2.65 (t, $J = 7.6$ Hz, 2H), 1.71 (m, 2H), 1.39-1.12 (m, 22H), 0.88 (m, 3H); ^{13}C NMR (100 MHz, CDCl_3) (DEPT): δ 183.53 (C), 172.36 (C), 54.82 (CH_3), 38.56 (CH_2), 31.80 (CH_2), 29.55 (CH_2), 29.51 (CH_2), 29.37 (CH_2), 29.23 (CH_2), 29.17 (CH_2), 27.23 (CH_2), 22.55 (CH_2), 13.94 (CH_3); IR: $\nu = 3003, 2955, 2915, 2851, 1588, 1553, 1502, 1472, 1355, 1072, 817, 716$ cm^{-1} ; MS m/z (rel. intensity): 377 (4, $[\text{M}^+]$), 322 (2), 168 (31), 155 (100), 125 (2), 43 (11). Anal. *calcd.* for $\text{C}_{19}\text{H}_{35}\text{N}_3\text{O}_2$: C 67.62, H 10.45; *found*: C 67.54, H 10.40.

^1H NMR (400 MHz, CDCl_3): δ 8.37 (d, $J = 5.1$ Hz, 1H), 6.80 (d, $J = 5.1$ Hz, 1H), 2.67 (t, $J = 7.6$ Hz, 2H), 2.56 (bs, 3H), 1.72 (m, 2H), 1.32-1.22 (m, 22H), 0.88 (m,

3H); ^{13}C NMR (100 MHz, CDCl_3) (DEPT): δ 172.20 (C), 171.37 (C), 156.63 (CH), 115.31 (CH), 37.78 (CH_2), 31.96 (CH_2), 29.72 (CH_2), 29.54 (CH_2), 29.42 (CH_2), 29.39 (CH_2), 29.31 (CH_2), 28.61 (CH_2), 22.72 (CH_2), 14.13 (CH_3), 14.07 (CH_3); IR: ν = 3032, 2924, 2853, 1568, 1542, 1466, 1423, 1335, 1205 cm^{-1} ; MS m/z (rel. intensity): 322 (7, $[\text{M}^+]$), 209 (2), 153 (16), 140 (100), 94 (3), 43 (4). Anal. *calcd.* for $\text{C}_{19}\text{H}_{34}\text{N}_2\text{S}$: C 70.75, H 10.62; *found*: C 70.65, H 10.54. HRMS *calcd.* for $\text{C}_{19}\text{H}_{34}\text{N}_2\text{S}$: 322.2443; *found*: 322.2442.

mp = 96-97.5 °C. ^1H NMR (400 MHz, CDCl_3): δ 8.98 (s, 1H), 8.32 (s, 1H), 3.26 (t, J = 7.7 Hz, 2H), 1.93 (m, 2H), 1.41-1.23 (m, 22H), 0.86 (t, J = 6.5 Hz, 3H); ^{13}C NMR (100 MHz, CDCl_3) (DEPT): δ 163.49 (C), 151.77 (CH), 151.62 (C), 142.06 (CH), 132.09 (C), 33.52 (CH_2), 31.89 (CH_2), 29.66 (CH_2), 29.65 (CH_2), 29.58 (CH_2), 29.49 (CH_2), 29.40 (CH_2), 29.32 (CH_2), 28.58 (CH_2), 22.65 (CH_2), 14.07 (CH_3). IR: ν = 3134, 3092, 2917, 2852, 1603, 1593, 1473, 1327, 641 cm^{-1} . MS m/z (rel. intensity): 316 (4, $[\text{M}^+]$), 273 (2), 203 (2), 147 (21), 134 (100), 43 (2). HRMS *calcd.* for $\text{C}_{19}\text{H}_{32}\text{N}_4$: 316.2627; *found* 316.2625.

mp 59-60°C. ^1H NMR (400 MHz, CDCl_3): δ 8.88 (s, 1H), 7.99 (s, 1H), 3.88 (d, J = 1.11 Hz, 3H), 3.19 (t, J = 7.7 Hz, 2H), 1.88 (m, 2H), 1.41-1.20 (m, 22H), 0.86 (t, J = 6.5 Hz, 3H); ^{13}C NMR (100 MHz, CDCl_3) (DEPT): δ 162.92 (C), 152.22 (CH), 151.14 (C), 144.29 (CH), 132.50 (C), 33.17 (CH_2), 31.89 (CH_2), 29.73 (CH_3), 29.65 (CH_2), 29.62 (CH_2), 29.59 (CH_2), 29.49 (CH_2), 29.39 (CH_2), 29.31 (CH_2), 28.60 (CH_2), 22.65 (CH_2), 14.07 (CH_3). IR: ν = 3066, 2955, 2916, 2851, 1596, 1580, 1473, 1329, 1235, 641 cm^{-1} . MS m/z (rel. intensity): 330 (4, $[\text{M}^+]$), 287 (2), 217 (2), 161 (20), 148 (100), 43 (2). HRMS *calcd.* for $\text{C}_{20}\text{H}_{34}\text{N}_4$: 330.2783; *found* 330.2779.

^1H NMR (300 MHz, CDCl_3): δ = 8.64 (bs, 1H), 8.15 (d, J = 5.3, 1H), 7.86 (d, J = 7.7, 1H), 7.58 (d, J = 5.3, 1H), 7.23-7.31 (m, 2H), 6.98-7.05 (m, 1H), 2.91 (q, J = 7.6 Hz, 2H), 1.21 (t, J = 7.6 Hz, 3H); ^{13}C NMR (75 MHz, CDCl_3): δ = 146.8, 140.2, 138.6, 133.9, 128.6, 128.2, 122.1, 121.7, 120.0, 112.9, 111.5, 27.3, 12.7; IR: ν = 3126, 3062, 2969, 2933, 2875, 2779, 1625, 1602, 1567, 1502, 1456, 1429, 1324, 1241, 1232, 1024, 743 cm^{-1} ; MS m/z (rel. intensity): 195 (100 $[\text{M}^+]$), 181 (6), 168 (25), 154 (7), 140 (8), 127 (4), 115 (5), 98 (6),

^1H NMR (400 MHz, CDCl_3): δ 8.87 (s, 1H), 8.15 (s, 1H), 6.21 (d, J = 5.2 Hz, 1H), 5.97 (t, J = 5.4 Hz, 1H), 5.69 (t, J = 5.1 Hz, 1H), 4.44 (m, 2H), 4.36 (dd, J = 18.2, 5.3 Hz, 1H), 3.18 (t, J = 7.7 Hz, 2H), 2.14 (s, 3H), 2.10 (s, 3H), 2.07 (s, 3H), 1.87 (m, 2H), 1.41 (m, 2H), 1.38-1.22 (m, 22H), 0.86 (t, J = 6.5 Hz, 3H); ^{13}C NMR (100 MHz, CDCl_3) (DEPT): δ 170.24 (C), 169.50 (C), 163.79 (C), 152.68 (CH), 150.24 (C), 141.91 (CH), 133.26 (C), 86.45 (CH), 80.31 (CH), 73.07 (CH), 70.59 (CH), 62.99 (CH_2), 33.34 (CH_2), 31.87 (CH_2), 29.64 (CH_2), 29.60 (CH_2), 29.48 (CH_2), 29.40 (CH_2), 29.30 (CH_2), 28.52 (CH_2), 22.64 (CH_2), 20.68 (CH_3), 20.47 (CH_3), 20.34 (CH_3), 14.06 (CH_3). IR: ν = 2924, 2853, 1752, 1595, 1373, 1333, 1222, 1048, 946, 604 cm^{-1} . MS m/z (rel. intensity): 574 (10, $[\text{M}^+]$), 405 (6), 392 (100), 315 (15), 259 (55), 139 (48), 134 (65), 97 (18), 43 (41). HRMS *calcd.* for $\text{C}_{30}\text{H}_{46}\text{N}_4\text{O}_7$: 574.3366; *found* 574.3357.

^1H NMR (300 MHz, CDCl_3): δ 7.47 (t, J = 7.66, 1H), 6.93 (d, J = 7.7, 2H), 2.70 (t, J = 7.8, 4H), 1.68 (m, 4H), 1.32 (m, 12H), 0.88 (t, J = 6.5, 6H); ^{13}C NMR (75 MHz, CDCl_3): δ 161.9, 136.2, 119.5, 38.5, 31.8, 30.0, 29.1, 22.7, 13.9; IR: ν = 3060, 2955, 2926, 2871, 2856, 1590, 1577, 1456, 1378, 750 cm^{-1} ; MS (EI) m/z (rel intensity): 247 (5 $[\text{M}^+]$), 218 (7), 204 (22), 190 (23), 177 (100), 134 (12), 120 (44), 107 (15). HRMS (EI): *calcd* for $\text{C}_{17}\text{H}_{29}\text{N}$ 247.229999; *found*: 247.229778.

^1H NMR (400 MHz, CDCl_3): δ 7.47 (t, $J = 8.3$ Hz, 1H), 6.94 (d, $J = 7.6$ Hz, 1H), 6.90 (d, $J = 7.6$ Hz, 1H), 2.71 (t, $J = 7.7$ Hz, 2H), 2.58 (d, $J = 7.2$ Hz, 2H), 2.07 (thept., $J = 6.8$ Hz, 1H), 1.68 (m, 2H), 1.20-1.35 (m, 22H), 0.87-0.92 (m, 9H); ^{13}C NMR (100 MHz, CDCl_3): δ 161.9, 160.9, 136.0, 120.4, 119.6, 47.6, 38.5, 32.0, 30.1, 29.80, 29.78, 29.75, 29.71, 29.6, 29.48, 29.47, 29.2, 22.8, 22.3, 13.9; IR: $\nu = 3060, 2954, 2924, 2853, 1589, 1577, 1455, 1383, 1367, 1167, 1155, 753\text{ cm}^{-1}$; MS (EI) m/z (rel intensity): 331 (11 [M^+]), 316 (9), 289 (31), 260 (4), 246 (6), 232 (5), 218 (6), 190 (4), 176 (11), 162 (16), 149 (100), 133 (5), 120 (24), 107 (23), 43 (7). HRMS (EI): *calcd.* for $\text{C}_{23}\text{H}_{41}\text{N}$ 331.323899; *found*: 331.323491. Anal. *calcd.* for $\text{C}_{23}\text{H}_{41}\text{N}$: C 83.31, H 12.46, N 4.22; *found*: C 83.39, H 12.36, N 4.08.

^1H NMR (400 MHz, CDCl_3): δ 8.29 (d, $J = 5.7$ Hz, 1H), 6.67 (d, $J = 2.42$ Hz, 1H), 6.63 (dd, $J = 5.7$ Hz, 2.5, 1H), 5.80 (m, 1H), 4.99 (ddd, $J = 17.1, 3.77, 1.6$ Hz, 1H), 4.99 (dddd, $J = 10.2, 1.2, 1.08$ Hz, 1H), 3.82 (s, 3H), 2.70 (t, $J = 7.8$ Hz, 2H), 2.03 (m, 2H), 1.69 (m, 2H), 1.30-1.40 (m, 8H); ^{13}C NMR (100 MHz, CDCl_3): δ 166.0, 164.4, 150.4, 139.4, 113.9, 108.4, 107.1, 55.1, 38.5, 33.9, 29.8, 29.4, 29.2; IR: $\nu = 3075, 2926, 2854, 1595, 1568, 1484, 1464, 1307, 1283, 1193, 1161, 1040, 993, 910\text{ cm}^{-1}$; MS (EI) m/z (rel intensity): 233 (10, [M^+]), 192 (8), 178 (4), 164 (5), 150 (21), 136 (36), 123 (100). Anal. *calcd.* for $\text{C}_{15}\text{H}_{23}\text{N}$: C 77.21, H 9.93, N 6.00; *found*: C 77.08, H 9.96, N 6.11.

^1H -NMR (400 MHz, CDCl_3): $\delta = 8.58$ (d, $J = 8.6$ Hz, 1H), 7.45 (d, $J = 2.9$ Hz, 1H), 7.43 (dd, $J = 7.5, 3.0$ Hz, 1H), 5.85 (ddt, $J = 17.0, 10.2$ Hz, 1H), 5.02 (ddd, $J = 17.1, 3.7, 1.6$ Hz, 1H), 4.97 (s, 2H), 4.96 (m, 1H), 4.16 (s, 3H), 2.97 (t, $J = 8.0$ Hz, 2H), 2.09 (q, $J = 7.0$ Hz, 2H), 1.80 (quint., $J = 7.4$ Hz, 2H), 1.35-1.55 (m, 8H); ^{13}C -NMR (100 MHz, CD_3OD): $\delta = 172.8, 170.9, 161.6, 149.4, 140.4, 115.1, 114.1, 112.5, 60.4, 58.6, 35.1, 34.0, 30.6, 30.4, 30.3, 29.2$; IR: $\nu = 3423, 2928, 2855, 2527, 1642, 1570, 1521, 1375\text{ cm}^{-1}$; MS (ESI) m/z (rel intensity) 605.5 (2 [$\text{M}^+ + \text{Na}$]), 583 (2 [$\text{M}^+ + \text{H}$]), 314 ([$\text{M}^+ + \text{Na}$]), 292 ([$\text{M}^+ + \text{H}$])

mp = 73-75 °C. ^1H NMR (400 MHz, CDCl_3): δ 9.32 (s, 1H), 8.21-8.10 (m, 4H), 7.79-7.71 (m, 2H), 7.58-7.49 (m, 3H); ^{13}C NMR (100 MHz, CDCl_3) (DEPT): δ 151.79 (C), 143.26 (CH), 142.27 (C), 141.54 (C), 136.75 (C), 130.20 (CH), 130.12 (CH), 129.59 (CH), 129.47 (CH), 129.09 (CH), 127.51 (CH). IR: ν = 3061, 1545, 1488, 1486, 1313, 769, 750, 687 cm^{-1} . MS m/z (rel. intensity): 206 (100, $[\text{M}^+]$), 179 (36), 152 (5), 103 (12), 76 (19), 50 (9). Anal. *calcd.* for $\text{C}_{14}\text{H}_{10}\text{N}_2$: C 81.53, H 4.89; *found*: C 81.38, H 5.09.

mp = 109-110°C. ^1H NMR (300 MHz, CD_2Cl_2): δ 9.42 (s, 1H), 9.38 (s, 1H), 8.75-8.72 (m, 1H), 8.56-8.51 (m, 1H), 8.18-8.09 (m, 2H), 7.86-7.77 (m, 2H), 7.53-7.48 (m, 1H); ^{13}C NMR (75 MHz, CD_2Cl_2): δ 151.7, 150.2, 149.4, 143.6, 143.0, 142.7, 135.4, 133.2, 131.3, 130.7, 130.3, 130.0, 124.5. IR: ν = 3051, 1612, 1591, 1578, 1542, 1495, 1481, 1418, 1370, 1305, 1130, 1065, 1025, 957, 937, 809, 762, 705 cm^{-1} . MS m/z (rel. intensity): 208 (15), 207 (100, $[\text{M}^+]$), 206 (10), 180 (19), 179 (19), 76 (15), 50 (10). Anal. *calcd.* for $\text{C}_{12}\text{H}_8\text{N}_4$: C 75.35, H 4.37; *found*: C 75.14, H 4.44.

mp = 105-107°C; ^1H NMR (300 MHz, CD_2Cl_2): δ 9.25 (s, 1H), 8.04 (m, 2H), 7.88 (d, 1H), 7.76 (m, 2H), 7.57 (d, 1H), 7.222 (m, 1H); ^{13}C NMR (75 MHz, CD_2Cl_2): δ 147.7, 142.7, 142.5, 142.4, 141.8, 130.7, 130.1, 129.5, 129.4, 129.2, 128.8, 127.3; IR: ν = 3120, 3058, 1547, 1490, 1428, 1320, 1238, 1207, 1134, 1053, 941, 851, 760, 723 cm^{-1} . MS m/z (rel. intensity): 212 (100, $[\text{M}^+]$), 185 (23); Anal. *calcd.* for $\text{C}_{12}\text{H}_8\text{N}_2\text{S}$ (212.26): C 67.92, H 3.80; *found*: C 68.06, H 3.72.

mp = 118-120 °C. ^1H NMR (400 MHz, CDCl_3): δ 8.72 (m, 2H), 8.16 (d, J = 8.3 Hz, 1H), 8.13 (dt, J = 8.3, 0.4 Hz, 1H), 7.89 (m, 3H), 7.64-7.49 (m, 7H); ^{13}C NMR (100 MHz, CDCl_3) (DEPT): δ 168.31 (C), 160.25 (C), 152.01 (C), 138.24 (C), 137.73 (C), 133.48 (CH), 130.47 (CH), 130.17 (CH), 129.88 (CH), 129.19 (CH), 128.68 (CH), 128.51 (2 x CH), 126.99 (CH), 126.96 (CH), 121.70 (C). IR: ν = 3053, 1613, 1564, 1540, 1486, 1342, 774, 702 cm^{-1} . MS m/z (rel. intensity): 282 (80, $[\text{M}^+]$), 281 (100), 205 (7), 178 (8), 141 (6), 102 (4), 77 (8). HMRS (EI) *calcd.* for $\text{C}_{20}\text{H}_{14}\text{N}_2$: 282.1157; *found*: 282.1157. Anal. *calcd.* for $\text{C}_{20}\text{H}_{14}\text{N}_2$: C 85.08, H 5.00; *found*: C, 84.88; H, 4.92.

mp = 61-62°C. ^1H NMR (300 MHz, CD_2Cl_2): δ 8.47 (d, 2H), 7.47-7.56 (m, 3H), 4.08 (s, 3H). ^{13}C NMR (75 MHz, CD_2Cl_2): δ 175.0, 173.3, 135.6, 133.0, 129.2, 128.8, 55.4. IR: ν = 3066, 3010, 2955, 2877, 1593, 1558, 1511, 1465, 1374, 1362, 1307, 1232, 1157, 1092, 1037, 1021, 831, 787, 708 cm^{-1} . MS m/z (rel. intensity): 217 (100, $[\text{M}^+]$), 216 (20), 188 (8), 187 (38), 172 (28), 104 (38), 103 (13), 77 (15), 69 (24). Anal. *calcd.* for $\text{C}_{11}\text{H}_{11}\text{N}_3\text{O}_2$ (217.22): C 60.82, H 5.10; *found*: C 60.78, H 5.25.

^1H NMR (300 MHz, CD_2Cl_2): δ 8.31 (s, 1H), 7.55-7.59 (m, 2H), 7.43-7.51 (m, 3H), 2.55 (s, 3H), 2.54 (s, 3H). ^{13}C NMR (75 MHz, CD_2Cl_2): δ 152.7, 150.6, 148.4, 142.1, 139.5, 129.3, 128.7, 128.6, 22.7, 21.2. IR: ν = 3434, 3214, 3060, 3039, 2963, 2924, 2871, 1564, 1530, 1495, 1456, 1426, 1371, 1289, 1190, 1161, 1065, 1028, 965, 789, 743, 700 cm^{-1} . MS m/z (rel. intensity): 184 (55), 183 (100, $[\text{M}^+]$), 115 (7), 103 (15), 42 (16). Anal. *calcd.* for $\text{C}_{12}\text{H}_{12}\text{N}_2$ (184.24): C 78.24, H 6.56; *found*: C 78.79, H 6.67.

mp = 76-77°C. ^1H NMR (300 MHz, CD_2Cl_2): δ 8.53 (d, 1H), 8.09-8.13 (m, 2H), 7.53-7.48 (m, 3H), 7.39 (d, 2H), 2.63 (s, 3H); ^{13}C NMR (75 MHz, CD_2Cl_2): δ 173.0, 164.0, 158.0, 136.7, 131.1, 131.0, 129.2, 127.5, 127.4, 112.2, 14.3. IR: ν = 3430, 3063, 3038, 2924, 1603, 1561, 1543, 1495, 1416, 1384, 1352, 1320, 1203, 1181, 1116, 1074, 1028, 970, 855, 825, 791, 759, 694, 625 cm^{-1} . MS m/z (rel. intensity): 203 (15), 202 (100, $[\text{M}^+]$), 201 (34), 156 (40), 155 (27), 129 (18), 102 (9), 77 (9). Anal. *calcd.* for $\text{C}_{11}\text{H}_{10}\text{N}_2\text{S}$ (202.27): C 65.30, H 4.98; *found*: C 66.50, H 5.01.

mp = 88-89°C. ^1H NMR (300 MHz, CD_2Cl_2): δ 8.60 (d, 1H), 8.11 (d, 1H), 7.91 (d, 1H), 7.66-7.72 (m, 4H), 7.48-7.57 (m, 4H); ^{13}C NMR (75 MHz, CD_2Cl_2): δ 160.9, 142.6, 140.1, 137.2, 130.3, 130.2, 128.8, 128.5, 127.7, 127.5, 127.3, 127.0, 120.1. IR: ν = 3053, 1618, 1583, 1553, 1500, 1440, 1382, 1353, 1319, 1243, 1167, 1074, 1060, 1020, 973, 875, 824, 768, 754, 700, 675, 627, 575 cm^{-1} . MS m/z (rel. intensity): 205 (49, $[\text{M}^+]$), 204 (100), 203 (12), 102 (14). Anal. *calcd.* for $\text{C}_{15}\text{H}_{11}\text{N}$ (205.25): C 87.79, H 5.40; *found*: C 87.75, H 5.52.

mp = 115-117 °C. ^1H NMR (300 MHz, CDCl_3): δ 9.03 (s, 1H), 8.77 (m, 2H), 8.09 (s, 1H), 7.56-7.51 (m, 3H), 3.93 (s, 3H); ^{13}C NMR (100 MHz, CDCl_3) (DEPT): δ 154.76 (C), 152.80 (C), 152.42 (CH), 144.78 (CH), 135.60 (C), 130.97 (CH), 129.75 (CH), 128.65 (CH), 29.81 (CH_3). IR: ν = 3056, 2950, 1579, 1567, 1509, 1455, 1369, 1325, 767, 698 cm^{-1} . MS m/z (rel. intensity): 210 (100, $[\text{M}^+]$), 194 (14), 183 (16), 170 (13).

mp = 74-75°C. ^1H NMR (300 MHz, CD_2Cl_2): δ 8.22-8.25 (m, 3H), 8.16 (d, 1H), 7.92 (d, 1H), 7.86 (d, 1H), 7.75 (m, 1H), 7.46-7.57 (m, 4H); ^{13}C NMR (75 MHz, CD_2Cl_2): δ 157.3, 148.7, 139.9, 137.0, 130.0, 129.7, 129.1, 127.8, 127.7, 127.6, 127.3, 126.8, 119.1. IR: ν = 3056, 3034, 1616, 1597, 1555, 1508, 1491, 1446, 1423, 1319, 1284, 1242, 1125, 1024, 830, 792, 773, 692 cm^{-1} . MS m/z (rel. intensity): 206 (15), 205 (100, $[\text{M}^+]$), 204 (75), 203 (9), 102 (14). Anal. *calcd.* for $\text{C}_{15}\text{H}_{11}\text{N}$ (205.25): C 87.79, H 5.40; *found*: C 87.78, H 5.46.

mp = 60-61°C. ^1H NMR (300 MHz, CD_2Cl_2): δ 9.37 (d, 1H), 8.67 (d, 1H), 8.51 (m, 1H), 8.28 (d, 1H), 8.14 (d, 1H), 7.92 (d, 1H), 7.86 (d, 1H), 7.76 (m, 1H), 7.57 (m, 1H), 5.45 (m, 1H). ^{13}C NMR (75 MHz, CD_2Cl_2): δ 154.9, 150.6, 149.1, 148.6, 137.4, 135.2, 134.9, 130.2, 129.9, 127.9, 127.7, 127.0, 123.9, 118.7. IR: ν = 3057, 1617, 1578, 1552, 1506, 1481, 1438, 1376, 1305, 1246, 1130, 1101, 1020, 939, 872, 835, 809, 787, 709, 619 cm^{-1} . Anal. *calcd.* for $\text{C}_{14}\text{H}_{10}\text{N}_2$ (206.24): C 81.54, H 4.88; *found*: C 81.65, H 5.04.

mp = 125-127°C. ^1H NMR (300 MHz, CD_2Cl_2): δ 8.16 (d, 1H), 8.03 (d, 1H), 7.84-7.68 (m, 4H), 7.53-7.48 (m, 2H), 7.19-7.16 (m, 1H); ^{13}C NMR (75 MHz, CD_2Cl_2): δ 152.6, 148.4, 145.8, 136.9, 130.2, 129.3, 128.9, 128.4, 127.9, 127.6, 126.4, 126.2, 117.8; IR: ν = 3100, 3058, 1614, 1594, 1551, 1527, 1500, 1427, 1359, 1317, 1242, 1228, 1143, 1122, 1078, 1058, 933, 858, 824, 758, 711, 620 cm^{-1} . Anal. *calcd.* for $\text{C}_{13}\text{H}_9\text{NS}$ (211.28): C 73.93, H 4.29; *found*: C 73.87, H 4.34.