SUPPORTING INFORMATION FOR

General Synthesis of 8-Aryl-2-tetralones

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Table of Contents

General Experimental Paragraph.....	S-2
Experimental procedures and characterization data for compounds 8a-h	S-2 to S-6
Experimental procedures and characterization data for compounds 2a-h	S-6 to S-10
Experimental procedures and characterization data for compounds 11a-h and 1c-h	S-10 to S-17
Experimental procedures and characterization data for compounds 14a,i-n	S-17 to S-21
Experimental procedures and characterization data for compounds 1a,i-n	S-21 to S-24
Copies of ¹ H NMR and ¹³ C NMR spectra for compounds 8a-h	S-25 to S-40
Copies of ¹ H NMR and ¹³ C NMR spectra for compounds 2a-h	S-41 to S-56
Copies of ¹ H NMR and ¹³ C NMR spectra for compounds 11a-h	S-57 to S-72
Copies of ¹ H NMR and ¹³ C NMR spectra for compounds 1c-h	S-73 to S-84
Copies of ¹ H NMR and ¹³ C NMR spectra for compounds 12, 13 and 4	S-85 to S-90
Copies of ¹ H NMR and ¹³ C NMR spectra for compounds 14a,i-n	S-91 to S-104
Copies of ¹ H NMR and ¹³ C NMR spectra for compounds 1a,i-n	S-105 to S-118

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General Experimental Paragraph. Melting points were obtained in open capillary tubes and are uncorrected. ^1H - and ^{13}C -NMR spectra were recorded in CDCl_3 at 300 and 75 MHz, respectively. All reactions were monitored by thin layer chromatography that was performed on precoated sheets of silica gel 60, and flash column chromatography was done with silica gel 60 (230-400 mesh) of Merck. Eluting solvents are indicated in the text. The apparatus for inert atmosphere experiments was dried by flaming in a stream of dry argon. THF and CH_2Cl_2 were dried over $4\text{\AA}$ molecular sieves. All other reagent quality solvents were used without purification. For routine workup, hydrolysis was carried out with water, extractions with CH_2Cl_2 , and solvent drying with MgSO_4 .

Experimental Procedures

6-Methoxy-4-(4-methylphenyl) -1,2-dihydronaphthalene (8a)

Compound **8a** was obtained from 1-bromo-4-methylbenzene (1.37 mL, 1.92 g) following Method A (1 h, eluent CH_2Cl_2 /hexane 1:6) as a white solid, in 73% yield: mp 54-56 °C; ^1H NMR δ 2.33-2.43 (m, 2H), 2.39 (s, 3H), 2.74-2.82 (m, 2H), 3.69 (s, 3H), 6.07-6.12 (m, 1H), 6.62, (d, $J = 2.7$ Hz, 1H), 6.71 (dd, $J = 2.7$ and 8.0 Hz, 1H), 7.12 (d, $J = 8.0$, 1H), 7.17 and 7.24 (AA'BB' system, 4H); ^{13}C NMR δ 21.1, 23.8, 27.4, 55.2, 111.6, 112.0, 127.8, 128.1, 128.6, 128.9, 136.2, 136.7, 137.7, 139.7, 158.1; MS (EI): m/z (%) 202 (12), 218 (10), 219 (12), 235 (38), 248 (31), 250 (M^+ , 100); HRMS (EI) calcd for $\text{C}_{18}\text{H}_{18}\text{O}$ (M^+) 250.1357, found 250.1351.

6-Methoxy-4-(4-methoxyphenyl)-1,2-dihydronaphthalene (**8b**)

Compound **8b** was obtained from 1-bromo-4-methoxybenzene (1.34 mL, 2.09 g) following Method A (overnight, eluent CH₂Cl₂/hexane 1:2) as a white solid, in 86% yield: ¹H NMR δ 2.37 (ddd, *J* = 4.8, 7.5 and 8.1 Hz, 2H), 2.77 (dd, *J* = 7.5 and 8.1 Hz, 2H), 3.69 (s, 3H), 3.84 (s, 3H), 6.07 (t, *J* = 4.5 Hz, 1H), 6.61 (d, *J* = 2.7 Hz, 1H), 6.70 (dd, *J* = 2.7 and 8.1 Hz, 1H), 6.90 and 7.28 (AA'BB' system, 4H), 7.11 (d, *J* = 8.1 Hz, 1H); ¹³C NMR δ 23.8, 27.4, 55.2, 111.5, 111.9, 113.6, 127.5, 128.1, 129.0, 129.8, 133.0, 136.3, 139.2, 158.1, 158.8; MS (EI): *m/z* (%) 121 (31), 235 (27), 251 (37), 266 (M⁺, 100); HRMS (EI) calcd for C₁₈H₁₈O₂ (M⁺) 266.1306, found 266.1304.

6-Methoxy-4-(2,4-dimethoxyphenyl)-1,2-dihydronaphthalene (**8c**)

Compound **8c** was obtained from 1-bromo-2,4-dimethoxybenzene (1.61 mL, 2.43 g) following Method A (overnight, eluent CH₂Cl₂/Hexane 2:1) as a white solid, in 72% yield: mp 96-98 °C; ¹H NMR δ 2.40 (dt, *J* = 4.5 and 7.8 Hz, 2H), 2.81 (t, *J* = 7.8 Hz, 2H), 3.65 (s, 3H), 3.68 (s, 3H), 3.84 (s, 3H), 6.01 (t, *J* = 4.5 Hz, 1H), 6.32 (d, *J* = 2.7 Hz, 1H), 6.49-6.56 (m, 2H), 6.66 (dd, *J* = 2.7 and 8.2 Hz, 1H), 7.07 (d, *J* = 8.2 Hz, 1H), 7.08 (d, *J* = 8.7 Hz, 1H); ¹³C NMR δ 23.9, 27.2, 55.2, 55.4, 55.5, 98.8, 104.3, 111.1, 111.4, 122.4, 127.8, 128.0, 128.8, 131.7, 136.5, 136.6, 158.1, 158.2, 160.3; MS (EI): *m/z* (%) 151 (18), 265 (20), 281 (20), 296 (M⁺, 100); HRMS (EI) calcd for C₁₉H₂₀O₃ (M⁺) 296.1412, found 296.1411.

4-(2-Ethylphenyl)-6-methoxy-1,2-dihydronaphthalene (**8d**)

8d

Compound **8d** was obtained from commercially available 2-ethylphenylboronic acid (**10d**) (525 mg) following Method B (40 min, eluent CH₂Cl₂/hexane 1:3) as a yellow oil, in 94% yield: ¹H NMR δ 1.10 (t, *J* = 7.6 Hz, 3H), 2.36-2.43 (m, 2H), 2.47 (q, *J* = 7.6 Hz, 2H), 2.79-2.86 (m, 2H), 3.60 (s, 3H), 5.95 (t, *J* = 4.5 Hz, 1H), 6.23 (d, *J* = 2.7 Hz, 1H), 6.66 (dd, *J* = 2.7 and 8.0 Hz, 1H), 7.08 (d, *J* = 8.0 Hz, 1H), 7.11-7.28 (m, 4H); ¹³C NMR δ 15.3, 23.7, 26.1, 27.2, 55.0, 111.1, 111.7, 125.6, 127.4, 127.9, 128.0, 128.3, 130.2, 136.7, 139.0, 139.6, 142.5, 158.2; MS (EI): *m/z* (%) 115 (18), 202 (26), 218 (33), 220 (31), 249 (100), 264 (M⁺, 90); HRMS (EI) calcd for C₁₉H₂₀O (M⁺) 264.1520, found 264.1520.

4-(2-Isopropylphenyl)-6-methoxy-1,2-dihydronaphthalene (**8e**)

8e

Compound **8e** was obtained from commercially available 2-isopropylphenylboronic acid (**10e**) (574 mg) following Method B (15 min, eluent CH₂Cl₂/hexane 1:3) as a pale yellow oil, in 97% yield: ¹H NMR δ 1.31 (d, *J* = 6.9 Hz, 3H), 1.33 (d, *J* = 6.9 Hz, 3H), 2.55-2.63 (m, 2H), 2.98-3.04 (m, 2H), 3.13 (sept, *J* = 6.9 Hz, 1H), 3.77 (s, 3H), 6.13 (t, *J* = 4.5 Hz, 1H), 6.43 (d, *J* = 2.6 Hz, 1H), 6.85 (dd, *J* = 2.6 and 8.0 Hz, 1H), 7.25-7.39 (m, 2H), 7.47-7.56 (m, 3H); ¹³C NMR δ 23.1, 23.8, 25.0, 27.2, 29.9, 55.0, 111.5, 111.6, 125.2, 125.6, 127.7, 127.8, 128.0, 128.2, 130.0, 137.0, 139.0, 139.1, 147.3, 158.3; MS (EI): *m/z* (%) 91 (12), 115 (13), 202 (19), 232 (35), 247 (60), 263 (80), 278 (M⁺, 100); HRMS (EI) calcd for C₂₀H₂₂O (M⁺) 278.1670, found 278.1658.

6-Methoxy-4-(2,4,6-trimethoxyphenyl)-1,2-dihydronaphthalene (8f)

Compound **8f** was obtained from commercially available 2,4,6-trimethoxyphenylboronic acid (**10f**) (742 mg) following Method B (2 h, eluent EtOAc/hexane 1:6) as a brown solid, in 70% yield: mp 130-132 °C; ^1H NMR δ 2.43 (ddd, $J = 4.5, 7.3$ and 8.3 Hz, 2H), 2.83 (t, $J = 8.0$ Hz, 2H), 3.66 (s, 3H), 3.68 (s, 6H), 3.85 (s, 3H), 5.93 (t, $J = 4.5$ Hz, 1H), 6.20 (s, 2H), 6.27 (d, $J = 2.8$ Hz, 1H), 6.64 (dd, $J = 2.8$ and 8.0 Hz, 1H), 7.05 (d, $J = 8.0$ Hz, 1H); ^{13}C NMR δ 23.9, 27.1, 55.1, 55.3, 56.0, 91.0, 110.5, 110.7, 110.8, 127.7, 128.2, 130.0, 131.1, 136.9, 158.2, 159.1, 160.5; MS (EI): m/z (%) 181 (19), 295 (20), 311 (18), 326 (M^+ , 100); HRMS (EI) calcd for $\text{C}_{20}\text{H}_{22}\text{O}_4$ (M^+) 326.1518, found 326.1512.

6-Methoxy-4-(2,4-dimethoxy-6-methylphenyl)-1,2-dihydronaphthalene (8g)

Compound **8g** was obtained from 2,4-dimethoxy-6-methylphenylboronic acid (**10g**)¹ (686 mg) following Method B (45 min, EtOAc/hexane 1:8) as a pale yellow solid, in 96% yield: mp 96-97 °C; ^1H NMR δ 2.14 (s, 3H), 2.42 (m, 2H), 2.83 (ddd, $J = 7.1, 8.1$ and 15.2 Hz, 1H), 2.90 (ddd, $J = 7.1, 8.1$ and 15.2 Hz, 1H), 3.68 (s, 3H), 3.70 (s, 3H), 3.86 (s, 3H), 5.92 (t, $J = 4.5$ Hz, 1H), 6.25 (d, $J = 2.7$ Hz, 1H), 6.41 (d, $J = 2.3$ Hz, 1H), 6.45 (d, $J = 2.3$ Hz, 1H), 6.68 (dd, $J = 2.7$ and 8.1 Hz, 1H), 7.11 (d, $J = 8.1$ Hz, 1H); ^{13}C NMR δ 20.1, 23.8, 27.2, 55.1, 55.2, 55.8, 96.1, 106.2, 110.6, 110.8, 121.5, 127.8, 128.2, 129.2, 134.3, 136.6, 139.0, 158.3, 158.6, 159.4; MS (EI): m/z (%) 165 (20), 279 (53), 295 (30), 310 (M^+ , 100); HRMS (EI) calcd for $\text{C}_{20}\text{H}_{22}\text{O}_3$ (M^+) 310.1569, found 310.1584

(1) Bringmann, G.; Goetz, R.; Keller, P. A.; Walter, R.; Boyd, M. R.; Lang, F.; Garcia, A.; Walsh, J. J.; Tellitu, I.; Bhaskar, K. V.; Kelly, T. R. *J. Org. Chem.* **1998**, *63*, 1090–1097.

6-Methoxy-4-(2,4,6-trimethylphenyl)-1,2-dihydronaphthalene (8h)

Compound **8h** was obtained from commercially available 2,4,6-trimethylphenylboronic acid (**10h**) (574 mg) following Method B (1 h, eluent CH₂Cl₂/hexane 1:3) as a light yellow solid, in 90% yield: mp 68-70 °C; ¹H NMR δ 2.09 (s, 6H), 2.31 (s, 3H), 2.43 (ddd, *J* = 4.5, 6.6 and 8.0 Hz, 2H), 2.84 (t, *J* = 8.0 Hz, 2H), 3.64 (s, 3H), 5.86 (t, *J* = 4.5 Hz, 1H), 6.15 (d, *J* = 2.7 Hz, 1H), 6.67 (dd, *J* = 2.7, 8.0 Hz, 1H), 6.90 (s, 2H), 7.11 (d, *J* = 8.0 Hz, 2H); ¹³C NMR δ 19.9, 21.0, 23.7, 27.5, 55.1, 110.76, 110.94, 127.9, 128.0, 128.1, 128.4, 136.1, 136.2, 136.5, 136.2, 137.5, 158.45; MS (EI): *m/z* (%) 232 (10), 235 (11), 247 (36), 263 (28), 278 (M⁺, 100); HRMS (EI) calcd for C₂₀H₂₂O (M⁺) 278.1670, found 278.1663.

7-Methoxy-1-(4-methylphenyl)naphthalene (2a)

Compound **2a** was obtained from 6-methoxy-4-(4-methylphenyl)-1,2-dihydronaphthalene (**8a**) (651 mg) following Method C (eluent CH₂Cl₂) as a white solid, in 71% yield: mp 90-91 °C; ¹H NMR δ 2.51 (s, 3H), 3.83, (s, 3H), 7.22 (dd, *J* = 2.6 and 8.7 Hz, 1H), 7.30-7.37 (m, 3H), 7.42-7.49 (m, 4H), 7.81-7.87 (m, 2H); ¹³C NMR δ 21.2, 55.2, 104.5, 118.2, 123.2, 127.2, 127.5, 129.1, 129.3, 129.7, 129.8, 132.8, 136.8, 138.1, 139.0, 157.7; MS (EI): *m/z* (%) 189 (21), 202 (14), 215 (15), 218 (27), 248 (M⁺, 100); HRMS (EI) calcd for C₁₈H₁₆O (M⁺) 248.1201, found 248.1201.

7-Methoxy-1-(4-methoxyphenyl)naphthalene (**2b**)

Compound **2b** was obtained from 6-methoxy-4-(4-methoxyphenyl)-1,2-dihydronaphthalene (**8b**) (692 mg) following Method C (eluent CH₂Cl₂) as a white solid, in 86% yield: mp 78-80 °C; ¹H NMR δ 3.78 (s, 3H), 3.90 (s, 3H), 7.04 and 7.44 (AA'BB' system, 4H), 7.16 (dd, *J* = 2.4 and 8.9 Hz, 1H), 7.24 (d, *J* = 2.4 Hz, 1H), 7.38 (m, 2H), 7.74-7.81 (m, 2H); ¹³C NMR δ 55.2, 55.3, 104.6, 113.8, 114.2, 118.2, 123.2, 127.1, 127.5, 129.4, 129.8, 130.1, 133.0, 133.5, 157.8, 158.9; MS (EI): *m/z* (%) 189 (20), 205 (15), 249 (20), 264 (M⁺, 100); HRMS (EI) calcd for C₁₈H₁₆O₂ (M⁺) 264.1150, found 264.1152.

7-Methoxy-1-(2,4-dimethoxyphenyl)naphthalene (**2c**)

Compound **2c** was obtained from 6-methoxy-4-(2,4-dimethoxyphenyl)-1,2-dihydronaphthalene (**8c**) (770 mg) following Method C (eluent CH₂Cl₂) as a light brown solid, in 80% yield: mp 161-162 °C; ¹H NMR δ 3.70 (s, 3H), 3.74 (s, 3H), 3.91 (s, 3H), 6.61 (d, *J* = 2.3 Hz, 1H), 6.63-6.65 (m, 1H), 6.92 (d, *J* = 2.5 Hz, 1H), 7.14 (dd, *J* = 2.5 and 8.9 Hz, 1H), 7.22 (dd, *J* = 2.1 and 6.7 Hz, 1H), 7.37 (m, 2H), 7.75-7.79 (m, 2H); ¹³C NMR δ 55.1, 55.4, 55.5, 98.9, 104.5, 105.0, 118.0, 122.5, 123.1, 127.2, 128.1, 129.1, 129.6, 132.5, 133.6, 135.6, 157.5, 158.1, 160.5; MS (EI): *m/z* (%) 205 (8), 248 (13), 294 (M⁺, 100); HRMS (EI) calcd for C₁₉H₁₈O₃ (M⁺) 294.1255, found 294.1265.

1-(2-Ethylphenyl)-7-methoxynaphthalene (**2d**)

2d

Compound **2d** was obtained from 4-(2-ethylphenyl)-6-methoxy-1,2-dihydronaphthalene (**8d**) (687 mg) following Method C (eluent CH₂Cl₂) as a light yellow solid, in 90% yield: mp 51-52 °C; ¹H NMR δ 1.14 (t, *J* = 7.6 Hz, 3H), 2.50 (m, 2H), 3.80 (s, 3H), 6.89, (d, *J* = 2.9 Hz, 1H), 7.28 (dd, *J* = 2.4 and 8.9 Hz, 1H), 7.35-7.53 (m, 6H), 7.89-7.93 (m, 2H); ¹³C NMR δ 15.5, 26.3, 55.0, 104.6, 118.2, 123.0, 125.6, 127.1, 127.3, 127.7, 128.2, 129.0, 129.6, 130.4, 133.5, 138.4, 139.8, 142.8, 157.6; MS (EI): *m/z* (%) 101 (13), 202 (29), 215 (40), 231 (25), 262 (M⁺, 100); HRMS (EI) calcd for C₁₉H₁₈O (M⁺) 262.1357, found 262.1361.

7-Methoxy-1-(2-isopropylphenyl)naphthalene (**2e**)

2e

Compound **2e** was obtained from 6-methoxy-4-(2-isopropylphenyl)-1,2-dihydronaphthalene (**8e**) (724 mg) following Method C (eluent CH₂Cl₂) as a light yellow solid, in 98% yield: mp 91-92 °C; ¹H NMR δ 1.24 (d, *J* = 6.9 Hz, 3H), 1.28 (d, *J* = 6.9 Hz, 3H), 2.87 (sept, *J* = 6.9 Hz, 1H), 3.81 (s, 3H), 6.93 (d, *J* = 2.6 Hz, 1H), 7.31 (dd, *J* = 2.6 and 8.8 Hz, 1H), 7.37 (dd, *J* = 1.7 and 7.6 Hz, 1H), 7.41 (dd, *J* = 1.5, 6.9 Hz, 1H), 7.45 (dd, *J* = 1.6 and 4.4 Hz, 1H), 7.49 (d, *J* = 1.6 Hz, 1H), 7.52 (d, *J* = 7.8, 1H), 7.56-7.65 (m, 2H), 7.94 (d, *J* = 8.9 Hz, 1H); ¹³C NMR δ 23.5, 24.8, 30.0, 55.0, 104.6, 118.3, 123.0, 125.3, 125.4, 127.0, 127.4, 128.0, 129.0, 129.6, 130.4, 133.7, 138.5, 139.1, 147.5, 157.6; MS (EI): *m/z* (%) 202 (20), 215 (24), 229 (31), 245 (18), 261 (20), 276 (M⁺, 100); HRMS (EI) calcd for C₂₀H₂₀O (M⁺) 276.1514, found 276.1513 .

7-Methoxy-1-(2,4,6-trimethoxyphenyl)naphthalene (2f)

Compound **2f** was obtained from 6-methoxy-4-(2,4,6-trimethoxyphenyl)-1,2-dihydronaphthalene (**8f**) (848 mg) following Method C (eluent CH₂Cl₂) as a pale yellow solid, in 92% yield; mp 166-167 °C; ¹H NMR δ 3.64 (s, 6H), 3.73 (s, 3H), 3.92 (s, 3H), 6.30 (s, 2H), 6.80 (d, *J* = 2.4 Hz, 1H), 7.11 (dd, *J* = 2.4 and 9.0 Hz, 1H), 7.31 (dd, *J* = 1.4 and 7.1 Hz, 1H), 7.39 (d, *J* = 9.0 Hz, 1H), 7.76 (m, 2H); ¹³C NMR δ 55.1, 55.3, 55.9, 91.0, 104.6, 110.6, 117.8, 123.1, 127.0, 129.1, 129.2, 129.6, 131.3, 134.1, 157.4, 159.0, 160.9; MS (EI): *m/z* (%) 162 (5), 235 (5), 278 (11), 324 (M⁺, 100); HRMS (EI) calcd for C₂₀H₂₀O₄ (M⁺) 324.1361, found 324.1359.

7-Methoxy-1-(2,4-dimethoxy-6-methylphenyl)naphthalene (2g)

Compound **2g** was obtained from 6-methoxy-4-(2,4-dimethoxy-6-methylphenyl)-1,2-dihydronaphthalene (**8g**) (807 mg) following Method C (eluent CH₂Cl₂) as a pale yellow solid, in 96% yield; mp 112-113 °C; ¹H NMR δ 1.93 (s, 3H), 3.62 (s, 3H), 3.71 (s, 3H), 3.90 (s, 3H), 6.49 (d, *J* = 2.3 Hz, 1H), 6.53 (d, *J* = 2.3 Hz, 1H), 6.73 (d, *J* = 2.5 Hz, 1H), 7.14 (dd, *J* = 2.5 and 8.8 Hz, 1H), 7.26 (dd, *J* = 1.4 and 7.1 Hz, 1H), 7.40 (m, 1H), 7.78 (m, 2H); ¹³C NMR δ 20.2, 54.8, 54.9, 55.3, 96.0, 104.0, 106.2, 117.7, 121.4, 123.1, 126.8, 128.2, 129.0, 129.6, 133.7, 134.3, 139.0, 157.5, 158.4, 159.7; MS (EI): *m/z* (%) 189 (7), 262 (15), 277 (17), 293 (13), 308 (M⁺, 100); HRMS (EI) calcd for C₂₀H₂₀O₃ (M⁺) 308.1412, found 308.1419.

7-Methoxy-1-(2,4,6-trimethylphenyl)naphthalene (2h)

Compound **2h** was obtained from 6-methoxy-4-(2,4,6-trimethylphenyl)-1,2-dihydronaphthalene (**8h**) (724 mg) following Method C (eluent CH₂Cl₂) as a white solid, in 97% yield; mp 56-57 °C; ¹H NMR δ 2.16 (s, 6H), 2.61 (s, 3H), 3.86 (s, 3H), 6.94 (d, *J* = 2.6 Hz, 1H), 7.25 (s, 2H), 7.38 (dd, *J* = 2.6 and 8.9 Hz, 1H), 7.47 (dd, *J* = 1.2 and 6.9 Hz, 1H), 7.60 (dd, *J* = 8.0 and 8.4 Hz, 1H), 7.99 (m, 2H); ¹³C NMR δ 20.2, 21.0, 55.0, 103.8, 118.1, 123.4, 126.8, 127.2, 128.1, 129.2, 129.8, 133.1, 136.6, 136.6, 136.8, 137.6, 157.9; MS (EI): *m/z* (%) 101 (11), 202 (17), 215 (15), 229 (17), 245 (21), 261 (15), 276 (M⁺, 100); HRMS (EI) calcd for C₂₀H₂₀O (M⁺) 276.1514, found 276.1514.

1-(4-Methylphenyl)-7-methoxy-1,2,3,4-tetrahydronaphthalene (11a)

Compound **11a** was obtained from 7-methoxy-1-(4-methylphenyl)-1,2-dihydronaphthalene (**2a**) (174 mg) following Method D (1h 45min, eluent EtOAc/hexane 1:9) as a white solid, in 62% yield; mp 43-44 °C; ¹H NMR δ 1.80-2.00 (m, 3H), 2.19-2.27 (m, 1H), 2.43 (s, 3H), 2.84-3.00 (m, 2H), 3.73 (s, 3H), 4.16 (m, 1H), 6.51 (d, *J* = 2.6 Hz, 1H), 6.81 (dd, *J* = 2.6 and 8.4 Hz, 1H), 7.06 (d, *J* = 8.4 Hz, 1H), 7.05 and 7.15 (AA'BB' system, 4H); ¹³C NMR δ 20.9, 21.0, 28.9, 33.2, 45.4, 55.0, 112.2, 114.8, 128.6, 128.9, 129.7, 135.3, 140.5, 144.2, 157.5; MS (EI): *m/z* (%) 91 (16), 105 (21), 134 (28), 160 (52), 209 (29), 224 (21), 252 (M⁺, 100); HRMS (EI) calcd for C₁₈H₂₀O (M⁺) 252.1514, found 252.1503.

1-(4-Methoxyphenyl)-7-methoxy-1,2,3,4-tetrahydronaphthalene (11b)

Compound **11b**² was obtained from 7-methoxy-1-(4-methoxyphenyl)-1,2-dihydronaphthalene (**2b**) (185 mg) following Method D (1h 15min, eluent EtOAc/hexane 1:9) as a white solid, in 71% yield; mp 84-86 °C; ¹H NMR δ 1.85 (m, 3H), 2.19 (m, 1H), 2.86 (m, 2H), 3.70 (s, 3H), 3.84 (s, 3H), 4.10 (m, 1H), 6.47 (d, *J* = 2.8 Hz, 1H), 6.78 (dd, *J* = 2.8, 8.5 Hz, 1H), 6.9 and 7.08 (AA'BB' system, 4H), 7.12 (d, *J* = 8.5 Hz, 1H); ¹³C NMR δ 21.0, 28.9, 33.2, 45.0, 55.0, 55.1, 112.2, 113.6, 114.8, 129.6, 129.7, 130.2, 139.3, 140.7, 157.4, 157.8; MS (EI): *m/z* (%) 91 (11), 115 (10), 121 (19), 134 (24), 160 (*M*⁺, 100); HRMS (EI) calcd for C₁₈H₂₀O₂ (*M*⁺) 268.1463, found 268.1460.

1-(2,4-Dimethoxyphenyl)-7-methoxy-1,2,3,4-tetrahydronaphthalene (11c)

Compound **11c** was obtained from 7-methoxy-1-(2,4-dimethoxyphenyl)-1,2-dihydronaphthalene (**2c**) (206 mg) following Method D (1h 30min, eluent acetone/hexane 1:6) as a pale brown solid, in 50% yield: mp 56-58 °C; ¹H NMR δ 1.64-1.89 (m, 3H), 1.96-2.06 (m, 1H), 2.69-2.87 (m, 2H), 3.66 (s, 3H), 3.79 (s, 3H), 3.84 (s, 3H), 4.45 (t, *J* = 6.0 Hz, 1H), 6.35 (dd, *J* = 2.4 and 8.4 Hz, 1H), 6.40 (d, *J* = 2.8 Hz, 1H), 6.49 (d, *J* = 2.4 Hz, 1H), 6.65 (d, *J* = 8.4 Hz, 1H), 6.70 (dd, *J* = 2.8 and 8.3 Hz, 1H), 7.03 (d, *J* = 8.4 Hz, 1H); ¹³C NMR δ 20.7, 29.0, 30.5, 37.9, 55.1, 55.3, 55.4, 98.3, 103.8, 112.1, 114.5, 128.0,

(2) Pelter, A.; Ward, R. S.; Rao, R. R. *Tetrahedron* **1985**, *41*, 2933-2938.

129.6, 130.2, 130.54, 141.0, 157.5, 157.8, 158.9; MS (EI): m/z (%) 121 (12), 151 (16), 160 (100), 164 (51), 239 (17), 269 (16), 298 (M^+ , 69); HRMS (EI) calcd for $C_{19}H_{22}O_3$ (M^+) 298.1568 found 298.1565.

8-(2,4-Dimethoxyphenyl)-2-tetralone (**1c**)

Compound **1c** was obtained as above as a yellow oil, in 29% yield; 1H NMR δ 2.43-2.65 (m, 2H), 3.03-3.21 (m, 2H), 3.28 and 3.48 (AB system, $J = 19.6$ Hz, 2H), 3.72 (s, 3H), 3.84 (s, 3H), 6.52 (t, $J = 2.3$ Hz, 1H), 6.55 (d, $J = 2.5$ Hz, 1H), 7.04 (d, $J = 8.0$ Hz, 1H), 7.13 (dd, $J = 2.3$ and 6.8 Hz, 1H), 7.24 (m, 2H); ^{13}C NMR δ 28.4, 38.1, 43.0, 55.3, 55.4, 98.5, 104.5, 121.9, 126.3, 126.6, 128.9, 131.4, 132.4, 136.5, 138.0, 157.4, 160.7, 211.6; MS (EI): m/z (%) 148 (15), 165 (18), 225 (14), 239 (11), 282 (M^+ , 100); HRMS (EI) calcd for $C_{18}H_{18}O_3$ (M^+) 282.1255, found 282.1251.

1-(2-Ethylphenyl)-7-methoxy-1,2,3,4-tetrahydronaphthalene (**11d**)

Compound **11d** was obtained from 7-methoxy-1-(2-ethylphenyl)-1,2-dihydronaphthalene (**2d**) (183 mg) following Method D (1 h, eluent CH_2Cl_2 /hexane 1:5) as a colorless oil, in 36% yield; 1H NMR δ 1.38 (t, $J = 7.5$ Hz, 3H), 1.80-1.92 (m, 2H), 1.99-2.09 (m, 1H), 2.15-2.26 (m, 1H), 2.74-3.00 (m, 4H), 3.71 (s, 3H), 4.42-4.46 (m, 1H), 6.39 (d, $J = 2.6$ Hz, 1H), 6.78 (dd, $J = 2.6$ and 8.2 Hz, 1H), 6.95 (dd, $J = 1.4$ and 7.5 Hz, 1H), 7.13-7.31 (m, 4H); ^{13}C NMR δ 17.0, 22.0, 26.9, 30.1, 33.5, 42.2, 56.1, 112.8, 115.8, 126.9, 127.0, 129.5, 130.5, 130.6, 130.9, 142.4, 142.8, 145.7, 158.5; MS (EI): m/z (%) 91 (20), 121 (22), 134 (27), 160 (25), 209 (29), 237 (22), 266 (M^+ , 100); HRMS (EI) calcd for $C_{19}H_{22}O$ (M^+) 266.1670, found 266.1669.

8-(2-Ethylphenyl)-2-tetralone (**1d**)

1d

Compound **1d** was obtained as above (eluent CH₂Cl₂/hexane 1:5, CH₂Cl₂/hexane 2:1) as a pale yellow solid, in 36% yield; mp 57-58 °C; ¹H NMR δ 1.02 (t, *J* = 7.6 Hz, 3H), 2.35 (ddd, *J* = 7.4, 7.6 and 10.2 Hz, 2H), 2.57 (t, *J* = 6.7 Hz, 2H), 3.15 (t, *J* = 6.7 Hz, 2H), 3.19 and 3.33 (AB system, *J* = 19.0 Hz, 1H), 7.01-7.32 (m, 7H); ¹³C NMR δ 16.1, 27.1, 29.9, 39.1, 43.7, 126.7, 127.2, 127.6, 128.8, 129.3, 129.4, 130.4, 132.3, 137.8, 140.3, 142.0, 142.7, 211.7; MS (EI): *m/z* (%) 165 (19), 179 (41), 193 (27), 206 (14), 250 (M⁺, 100); HRMS (EI) calcd for C₁₈H₁₈O (M⁺) 250.1357, found 250.1351.

1-(2-Isopropylphenyl)-7-methoxy-1,2,3,4-tetrahydronaphthalene (**11e**)

11e

Compound **11e** was obtained from 7-methoxy-1-(2-isopropylphenyl)-1,2-dihydronaphthalene (**2e**) (193 mg) following Method D (1h 30min, eluent CH₂Cl₂/hexane 1:4) as a colorless oil, in 20% yield; ¹H NMR δ 1.24 (d, *J* = 6.8 Hz, 3H), 1.31 (d, *J* = 6.8 Hz, 3H), 1.70-1.87 (m, 2H), 1.90-2.01 (m, 1H), 2.06-2.20 (m, 1H), 2.76-2.94 (m, 2H), 3.28 (sept, *J* = 6.8 Hz, 1H), 3.63 (s, 3H), 4.38-4.43 (m, 1H), 6.30 (d, *J* = 2.7 Hz, 1H), 6.7 (dd, *J* = 2.7 and 8.4 Hz, 1H), 6.86 (dd, *J* = 1.4 and 7.8 Hz, 1H), 7.03-7.08 (m, 2H), 7.18 (ddd, *J* = 1.5, 7.3 and 7.8 Hz, 1H), 7.31 (dd, *J* = 1.4 and 7.8 Hz, 1H); ¹³C NMR δ 21.9, 23.6, 24.9, 28.6, 29.1, 32.8, 41.5, 55.1, 111.8, 114.8, 125.2, 125.6, 126.2, 129.6, 129.7, 129.9, 141.5, 143.9, 146.4, 157.5; MS (EI): *m/z* (%) 121 (27), 134 (25), 160 (26), 209 (29), 237 (56), 280 (M⁺, 100); HRMS (EI) calcd for C₂₀H₂₄O (M⁺) 280.1827, found 280.1825.

8-(2-Isopropylphenyl)-2-tetralone (**1e**)

1e

Compound **1e** was obtained as above (eluent CH₂Cl₂/hexane 1:4, CH₂Cl₂/hexane 1:1) as a yellow oil, in 45% yield; ¹H NMR δ 1.11 (d, *J* = 6.8 Hz, 3H), 1.17 (d, *J* = 6.8 Hz, 3H), 2.61 (t, *J* = 6.8 Hz, 2H), 2.65 (sept, *J* = 6.8 Hz, 1H), 3.18 (t, *J* = 6.8 Hz, 2H), 3.23 and 3.37 (AB system, *J* = 19.6 Hz, 2H), 7.02-7.46 (m, 7H); ¹³C NMR δ 23.1, 24.6, 28.8, 29.9, 38.1, 42.9, 125.5, 125.6, 126.1, 126.6, 128.0, 128.3, 129.3, 131.4, 136.8, 138.6, 141.1, 146.5, 210.6; MS (EI): *m/z* (%) 178 (36), 193 (45), 205 (43), 231 (31), 264 (M⁺, 100); HRMS (EI) calcd for C₁₉H₂₀O (M⁺) 264.1514, found 264.1526.

1-(2,4,6-Trimethoxyphenyl)-7-methoxy-1,2,3,4-tetrahydronaphthalene (**11f**)

11f

Compound **11f** was obtained from 7-methoxy-1-(2,4,6-trimethoxyphenyl)-1,2-dihydronaphthalene (**2f**) (227 mg) following Method D (1h 20min, eluent CH₂Cl₂/hexane 3:1) as a white solid, in 28% yield; mp 58-59 °C; ¹H NMR δ 1.67-2.08 (m, 4H), 2.70-2.89 (m, 2H), 3.63 (s, 3H), 3.65 (s, 6H), 3.81 (s, 3H), 4.53-4.6 (m, 1H), 6.15 (s, 2H), 6.29 (d, *J* = 2.8 Hz, 1H), 6.58 (dd, *J* = 2.8 and 8.1 Hz, 1H), 6.96 (d, *J* = 8.1 Hz, 1H); ¹³C NMR δ 24.1, 29.0, 29.5, 34.9, 55.1, 55.3, 55.9, 91.7, 109.8, 112.8, 116.0, 128.8, 129.6, 143.0, 157.4, 159.2, 159.5; MS (EI): *m/z* (%) 121 (11), 145 (11), 160 (85), 179 (27), 194 (M⁺, 100); HRMS (EI) calcd for C₂₀H₂₄O₄ (M⁺) 328.1674, found 328.1670.

8-(2,4,6-Trimethoxyphenyl)-2-tetralone (**1f**)

1f

Compound **1f** was obtained as above as a pale brown solid, in 31% yield: mp 111-113 °C; ^1H NMR δ 2.56 (t, J = 6.6 Hz, 2H), 3.11 (t, J = 6.6 Hz, 2H), 3.32 (s, 2H), 3.68 (s, 6H), 3.86 (s, 3H), 6.21 (s, 2H), 7.11-7.30 (m, 3H); ^{13}C NMR δ 28.9, 38.2, 42.7, 55.4, 55.7, 90.7, 109.9, 125.8, 126.5, 130.0, 133.1, 133.6, 136.2, 158.2, 161.0, 211.8; MS (EI): m/z (%) 239 (12), 281 (22), 312 (M^+ , 100); HRMS (EI) calcd for $\text{C}_{19}\text{H}_{20}\text{O}_4$ (M^+) 312.1361, found 312.1358.

1-(2,4-Dimethoxy-6-methylphenyl)-7-methoxy-1,2,3,4-tetrahydronaphthalene (**11g**)

11g

Compound **11g** was obtained from 7-methoxy-1-(2,4-dimethoxy-6-methylphenyl)-1,2-dihydronaphthalene (**2g**) (216 mg) following Method D (50min, eluent EtOAc/hexane 1:15) as a colorless oil, in 25% yield: ^1H NMR ($\text{C}_2\text{D}_2\text{Cl}_4$, 500 MHz, $T = 390^\circ\text{K}$) δ 1.75 (m, 1H), 1.95 (m, 3H), 2.07 (broad s, 3H), 2.77 (m, 2H), 3.54 (broad s, 3H), 3.58 (s, 3H), 3.75 (s, 3H), 4.49 (m, 1H), 6.23 (m, 1H), 6.30 (m, 2H), 6.56 (m, 1H), 6.92 (d, J = 8.2 Hz, 1H); MS (EI): m/z (%) 134 (12), 144 (11), 159 (37), 164 (26), 178 (100), 268 (21), 312 (M^+ , 79).

8-(2,4-Dimethoxy-6-methylphenyl)-2-tetralone (1g)

1g

Compound **1g** was obtained as above as a yellow oil, in 60% yield; ^1H NMR δ 1.96 (s, 3H), 2.60 (m, 2H), 3.15 (t, $J = 6.4$ Hz, 2H), 3.20 and 3.33 (AB system, $J = 19.9$ Hz, 2H), 3.68 (s, 3H), 3.86 (s, 3H), 6.40 (d, $J = 2.1$ Hz, 1H), 6.45 (d, $J = 2.1$ Hz, 1H), 7.05 (dd, $J = 2.1$ and 6.4 Hz, 1H), 7.22-7.28 (m, 2H); ^{13}C NMR δ 20.5, 28.9, 38.3, 42.3, 55.3, 55.5, 96.0, 106.4, 121.0, 126.3, 126.5, 129.0, 132.5, 136.5, 136.8, 138.1, 157.6, 159.8, 211.7; MS (EI): m/z (%) 165 (15), 222 (17), 281 (17), 296 (M^+ , 100); HRMS (EI) calcd for $\text{C}_{19}\text{H}_{20}\text{O}_3$ (M^+) 296.1776, found 296.1764.

1-(2,4,6-Trimethylphenyl)-7-methoxy-1,2,3,4-tetrahydronaphthalene (11h)

11h

Compound **11h** was obtained from 7-methoxy-1-(2,4,6-trimethylphenyl)-1,2-dihydronaphthalene (**2h**) (193 mg) following Method D (1h, eluent Et_2O /Hexane 1:40) as a colorless oil, in 8% yield; ^1H NMR δ 1.70-2.10 (m, 4H), 1.79 (s, 3H), 2.26 (s, 3H), 2.40 (s, 3H), 2.78-2.85 (m, 2H), 3.62 (s, 3H), 4.44-4.53 (m, 1H), 6.29 (d, $J = 2.8$ Hz, 1H), 6.65 (dd, $J = 2.8$ and 8.0 Hz, 1H), 6.77 (s, 1H), 6.88 (s, 1H), 7.01 (d, $J = 8.0$ Hz, 1H); ^{13}C NMR δ 20.7 (2C), 21.0, 24.0, 29.1, 29.3, 40.8, 55.2, 110.7, 113.1, 128.7, 129.1, 129.6, 131.1, 135.2, 136.5, 136.6, 139.3, 141.8, 158.0; MS (EI): m/z (%) 119 (16), 160 (22), 237 (36), 280 (M^+ , 100); HRMS (EI) calcd for $\text{C}_{20}\text{H}_{24}\text{O}$ (M^+) 280.1827, found 280.1830.

8-(2,4,6-Trimethylphenyl)-2-tetralone (**1h**)

Compound **1h** was obtained as above as a pale brown solid, in 54% yield: mp 96-98 °C; ^1H NMR δ 1.87 (s, 6H), 2.32 (s, 3H), 2.56 (t, J = 6.6 Hz, 2H), 3.10-3.15 (m, 4H), 6.92 (s, 2H), 6.99 (d, J = 2.0 Hz, 1H), 7.21-7.30 (m, 2H); ^{13}C NMR δ 20.2, 21.0, 28.9, 38.3, 42.1, 126.4, 126.8, 127.9, 128.2, 131.3, 135.6, 136.5, 136.9, 137.0, 140.2, 210.9; MS (EI): m/z (%) 96 (5), 207 (26), 264 (M^+ , 100); HRMS (EI) calcd for $\text{C}_{19}\text{H}_{20}\text{O}$ (M^+) 264.1514, found 264.1514.

8-(*p*-Tolyl)-2-[spiro-2-(1,3-dioxolyl)]tetralin (**14a**)

Compound **14a** was obtained from commercially available *p*-tolylboronic acid (**10a**) following Method E [$\text{Ba}(\text{OH})_2 \cdot \text{H}_2\text{O}$ (42 mg, 0.135 mmol, 1.5 equiv), 90 min, eluent EtOAc/hexane 1:6] as a colorless oil, in 93% yield: ^1H NMR δ 1.88 (t, J = 6.7 Hz, 2H), 2.30 (s, 3H), 2.75 (s, 2H), 2.97 (t, J = 6.7 Hz, 2H), 3.83 (m, 4H), 6.96 (dd, J = 1.9 and 6.9 Hz, 1H), 7.02-7.14 (m, 6H); ^{13}C NMR δ 21.2, 28.6, 31.7, 38.0, 64.4, 108.6, 125.8, 127.6, 128.8, 129.1, 132.1, 135.6, 136.4, 138.6, 142.3; MS (EI): m/z (%) 165 (18), 179 (80), 194 (40), 208 (20), 236 (17), 280 (M^+ , 100). HRMS (EI) Calcd for $\text{C}_{19}\text{H}_{20}\text{O}_2$ (M^+) 280.1463, found 280.1467.

8-Phenyl-2-[spiro-2-(1,3-dioxolyl)]tetralin (**14i**)

Compound **14i** was obtained from commercially available phenylboronic acid (**10i**) following Method E [$\text{Ba}(\text{OH})_2 \cdot \text{H}_2\text{O}$ (42 mg, 0.135 mmol, 1.5 equiv), 70 min, eluent EtOAc/hexane 1:8] as a white solid, in 92% yield: mp 91-92 °C; ^1H NMR δ 1.88 (t, J = 6.8 Hz, 2H), 2.74 (s, 2H), 2.98 (t, J = 3.0 Hz, 2H), 3.84 (m, 4H), 6.97 (dd, J = 1.9 and 6.9 Hz, 1H), 7.07-7.33 (m, 7H); ^{13}C NMR δ 28.5, 31.7, 38.0, 64.4, 108.6, 125.8, 126.8, 127.6, 127.6, 127.8, 128.1, 129.2, 132.0, 135.7, 141.6, 142.3; MS (EI): m/z (%) 165 (82), 178 (39), 194 (19), 222 (17), 266 (M^+ , 100). HRMS (EI) Calcd for $\text{C}_{18}\text{H}_{18}\text{O}_2$ (M^+) 266.1306, found 266.1310.

8-(2-Biphenyl)-2-[spiro-2-(1,3-dioxolyl)]tetralin (**14j**)

Compound **14j** was obtained from commercially available 2-biphenylboronic acid (**10j**) following Method E [$\text{Ba}(\text{OH})_2 \cdot \text{H}_2\text{O}$ (65 mg, 0.20 mmol, 2.3 equiv), 5 h, eluent EtOAc/hexane 1:6] as a white solid, in 80% yield: mp 101-102 °C; ^1H NMR δ 1.63 (ddd, J = 6.6, 7.0 and 13.7 Hz, 1H), 1.76 (ddd, J = 6.6, 7.0 and 13.7 Hz, 1H), 2.25 (d, J = 17.0, 1H), 2.51 (d, J = 17.0 Hz, 1H), 2.74-2.92 (m, 2H), 3.69-3.82 (m, 4H), 6.87 (dd, J = 2.3 and 6.4 Hz, 1H), 6.93-6.97 (m, 2H), 7.02-7.08 (m, 4H), 7.15-7.18 (m, 2H), 7.25-7.38 (m, 3H); ^{13}C NMR δ 28.4, 31.6, 37.7, 64.3, 64.4, 108.5, 125.3, 126.5, 127.1, 127.4, 127.6, 127.8, 128.3, 129.3, 130.1, 130.6, 132.6, 135.3, 139.8, 140.8, 141.2, 141.5; MS (EI): m/z (%) 178 (14), 239 (36), 241 (85), 255 (36), 298 (28), 342 (M^+ , 100). HRMS (EI) Calcd for $\text{C}_{24}\text{H}_{22}\text{O}_2$ (M^+) 342.1620, found 342.1615.

8-(1-Naphtyl)-2-[spiro-2-(1,3-dioxolyl)]tetralin (**14k**)

Compound **14k** was obtained from commercially available 1-naphthylboronic acid (**10k**) following Method E [$\text{Ba}(\text{OH})_2 \cdot \text{H}_2\text{O}$ (65 mg, 0.20 mmol, 2.3 equiv), 90 min, eluent EtOAc/hexane 1:8] as a white solid, in 98% yield: mp 142-144 °C; ^1H NMR δ 1.99 (t, J = 6.8 Hz, 2H), 2.52 and 2.63 (AB system, J = 17.1 Hz, 2H), 3.15 (t, J = 6.8 Hz, 3.7-3.9 (m, 4H), 7.12 (dd, J = 3.8 and 5.2 Hz, 1H), 7.3 (m, 2H), 7.34 (dd, J = 1.1 and 7.0 Hz, 1H), 7.4 (m, 1H), 7.5-7.6 (m, 4H), 7.9 (m, 2H); ^{13}C NMR δ 28.5, 31.7, 37.2, 64.3, 64.4, 108.5, 125.5, 125.8, 126.0, 126.1, 126.6, 127.5, 128.0, 128.1, 128.2, 131.9, 133.5, 133.6, 135.5, 139.3, 140.5; MS (EI): m/z (%) 57 (15), 114 (13), 149 (12), 215 (89), 229 (63), 243 (38), 254 (11), 316 (M^+ , 100); HRMS (EI) Calcd for $\text{C}_{22}\text{H}_{20}\text{O}_2$ (M^+) 316.1463, found 316.1466.

8-(2-Methoxy-1-naphtyl)-2-[spiro-2-(1,3-dioxolyl)]tetralin (**14l**)

Compound **14l** was obtained from 2-methoxynaphthylboronic acid (**10l**)³ following Method E [$\text{Ba}(\text{OH})_2 \cdot \text{H}_2\text{O}$ (65 mg, 0.20 mmol, 2.3 equiv), 60 min, eluent EtOAc/hexane 1:8] as a white solid, in 91% yield: mp 179-181 °C; ^1H NMR δ 1.85-1.91 (m, 2H), 2.30 and 2.57 (AB system, J = 17.1 Hz, 2H), 3.0-3.1 (m, 2H), 3.6-3.8 (m, 4H), 3.75 (s, 3H), 6.94 (dd, J = 1.9 and 6.6 Hz, 1H), 7.1-7.2 (m, 5H), 7.26 (d, J = 9.0 Hz, 1H), 7.7-7.8 (m, 1H), 7.87 (d, J = 9.0 Hz, 1H); ^{13}C NMR δ 28.5, 31.6, 36.7, 56.5, 64.3, 108.6, 113.5, 123.5, 123.8, 125.0, 125.8, 126.4, 127.8, 127.9, 128.5, 129.0, 129.1, 133.4, 134.3, 135.4, 136.5, 153.7; MS (EI): m/z (%) 103 (90), 202 (18), 215 (20), 229 (41), 245 (20), 259 (18), 302 (13), 346 (M^+ , 100); HRMS (EI) Calcd for $\text{C}_{23}\text{H}_{22}\text{O}_3$ (M^+) 346.1568, found 346.1576.

(3) Castanet, A.-S.; Colobert, F.; Broutin, P.-E.; Obringer, M. *Tetrahedron: Asymmetry* **2002**, 13, 659–665.

8-(8-Methoxy-1-naphthyl)-2-[spiro-2-(1,3-dioxolyl)]tetralin (**14m**)

To a solution of compound **4** (27.2 mg, 0.08 mmol, 1 equiv), 8-methoxy-1-naphthylboronic acid (**10m**)⁴ (19.4 mg, 0.1 mmol, 1.2 equiv) and CsCO₃ (39 mg, 0.12 mmol, 1.5 equiv) in admixture of toluene (0.3 mL), EtOH (0.3 mL) and H₂O (0.2 mL), under argon, Pd(PPh₃)₄ (9 mg, 10 mol%) was added and the mixture was vigorously stirred at 90 °C for 3 hours. The resulting mixture was cooled to room temperature, filtered over celite and extracted with CH₂Cl₂. After workup and flash chromatography (EtOAc/hexane 5:1), compound **6m** was obtained as a colorless oil, in 63% yield: ¹H NMR δ 1.92 (t, *J* = 6.5 Hz, 2H), 2.41 and 2.54 (AB system, *J* = 17.2 Hz, 2H), 3.01 (t, *J* = 6.5 Hz, 2H) 3.45 (s, 3H), 3.7-3.9 (m, 4H), 6.72 (dd, *J* = 1.1 and 7.5 Hz, 1H), 6.98 (dd, *J* = 2.7 and 5.9 Hz, 1H), 7.1-7.2 (m, 2H), 7.3-7.4 (m, 2H), 7.4-7.5 (m, 2H), 7.79 (dd, *J* = 1.1 and 8.1 Hz, 1H); ¹³C NMR δ 28.4, 31.9, 37.5, 55.4, 64.1, 64.2, 105.6, 108.7, 121.1, 124.0, 124.5, 125.7, 125.8, 125.9, 126.3, 127.4, 127.9, 132.6, 133.7, 135.5, 137.7, 145.6, 156.7; MS (EI): *m/z* (%) 189 (18), 215 (57), 228 (82), 243 (100), 301 (22), 346 (M⁺, 91). HRMS (EI) Calcd for C₂₃H₂₂O₃ (M⁺) 346.1569, found 346.1585.

8-(9-Anthracenyl)-2-[spiro-2-(1,3-dioxolyl)]tetralin (**14n**)

To a solution of compound **4** (23.5 mg, 0.07 mmol, 1 equiv), 9-anthraceneboronic acid (**10n**)⁵ (30.8 mg, 0.14 mmol, 2 equiv) and CsCO₃ (52.4 mg, 0.16 mmol, 2.3 equiv) in toluene (0.3 mL), ethanol (0.3 mL) and H₂O (0.2 mL), under argon, Pd(PPh₃)₄ (8 mg, 10 mol%) was added. The reaction mixture was vigorously stirred at 100°C for 6h, cooled to room temperature and filtered over celite. After extraction with CH₂Cl₂, workup and flash chromatography (eluent CH₂Cl₂/hexane 50:50), compound **6n** was obtained as a yellow solid, in 84% yield; mp 215-217 °C; ¹H NMR δ 1.98 (t, *J* = 6.7 Hz, 2H), 2.34 (s,

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2H), 3.20 (t, $J = 6.7$ Hz, 2H), 3.59-3.66 (m, 2H), 3.81-3.88 (m, 4H), 7.11 (t, $J = 4.3$ Hz, 1H), 7.28-7.39 (m, 4H), 7.43-7.56 (m, 4H), 8.04-8.08 (m, 2H), 8.51 (s, 1H); ^{13}C NMR δ 28.5, 31.7, 36.7, 64.2, 108.4, 125.1, 125.6, 126.0, 126.3, 126.4, 128.2, 128.4, 128.8, 129.9, 131.4, 134.4, 135.7, 135.8, 138.4; MS (EI): m/z (%) 265 (78), 279 (49), 293 (20), 322 (12), 366 (M^+ , 100). HRMS (EI) Calcd for $\text{C}_{26}\text{H}_{22}\text{O}_2$ (M^+) 366.1620, found 366.1624.

8-(*p*-Tolyl)-2-tetralone (**1a**)

Compound **1a** was obtained from 8-(*p*-tolyl)-2-[spiro-2-(1,3-dioxolyl)]tetralin (**14a**) (28.8 mg) following Method F (4 h) as a pale brown solid, in 99% yield: mp 67-69 °C; ^1H NMR δ 2.32 (s, 3H), 2.46 (t, $J = 6.5$ Hz, 2H), 3.04 (t, $J = 6.5$ Hz, 2H), 3.46 (s, 2H), 7.0-7.2 (m, 7H); ^{13}C NMR δ 21.1, 28.9, 37.9, 43.1, 126.5, 126.6, 128.5, 129.0, 129.1, 130.7, 136.9, 137.2, 137.3, 141.6, 210.9; MS (EI): m/z (%) 165 (23), 179 (85), 194 (40), 108 (13), 221 (11), 236 (M^+ , 100). HRMS (EI) Calcd for $\text{C}_{17}\text{H}_{16}\text{O}$ (M^+) 236.1201, found 236.1201.

8-Phenyl-2-tetralone (**1i**)

Compound **1i** was obtained from 8-phenyl-2-[spiro-2-(1,3-dioxolyl)]tetralin (**14i**) (15 mg) following Method F (5 h) as a yellow oil, in 99% yield: ^1H NMR δ 2.55 (t, $J = 6.7$ Hz, 2H), 3.14 (t, $J = 6.7$ Hz, 2H), 3.53 (s, 2H), 7.2-7.3 (m, 5H); ^{13}C NMR δ 28.9, 37.9, 43.0, 126.5, 126.8, 127.2, 128.3, 128.5, 129.2, 130.1, 130.6, 137.3, 140.3, 141.6, 210.9; MS (EI): m/z (%) 89 (10), 115 (12), (100), 180 (56), 194 (18), 222 (M^+ , 96). HRMS (EI) Calcd for $\text{C}_{16}\text{H}_{14}\text{O}$ (M^+) 222.1044, found 222.1052.

8-(2-Biphenyl)-2-tetralone (1j)

Compound **1j** was obtained from 8-(2-biphenyl)-2-[spiro-2-(1,3-dioxolyl)]tetralin (**14j**) (26.5 mg) following Method F (2.5 h) as a colorless oil, in 94% yield: ^1H NMR δ 2.08-2.30 (m, 2H), 2.70 (d, J = 19.6 Hz, 1 H), 2.78-2.84 (m, 2H), 3.03 (d, J = 19.6 Hz, 1H), 6.96-6.99 (m, 2H), 7.03-7.07 (m, 4H), 7.12-7.21 (m, 3H), 7.28-7.37 (m, 3H); ^{13}C NMR δ 28.5, 37.8, 42.8, 126.2, 126.4, 126.5, 127.4, 127.8, 128.0, 129.3, 129.4, 129.9, 130.6, 131.1, 136.8, 138.7, 140.8, 141.0, 141.1, 211.0; MS (EI): m/z (%) 239 (25), 241 (42), 253 (18), 282 (24), 298 (M^+ , 100); HRMS (EI) Calcd for $\text{C}_{22}\text{H}_{18}\text{O}_1$ (M^+) 298.1358, found 298.1354.

8-(1-Naphtyl)-2-tetralone (1k)

Compound **1k** was obtained from 8-(1-naphtyl)-2-[spiro-2-(1,3-dioxolyl)]tetralin (**14k**) (24.0 mg) following Method F (1 h) as a colorless oil, in 98% yield: ^1H NMR δ 2.50 (dt, J = 6.4 and 4.9 Hz, 2H), 3.06-3.12 (m, 4H), 7.14-7.17 (m, 1H), 7.21 (dd, J = 7.0 and 1.1 Hz, 1H), 7.24-7.26 (m, 2H), 7.28 (m, 1H), 7.29 (m, 1H), 7.36-7.45 (m, 2H), 7.79 (dd, J = 8.5 and 0.9 Hz, 1H), 7.80-7.83 (m, 1H), ^{13}C NMR δ 28.9, 38.2, 42.7, 125.3, 125.3, 125.9, 126.3, 126.4, 126.8, 127.1, 127.9, 128.4, 129.0, 131.9, 132.2, 133.6, 136.8, 138.0, 139.9, 210.6; MS (EI): m/z (%) 189 (16), 203 (12), 215 (100), 228 (80), 239 (71), 253 (62), 272 (M^+ , 82); HRMS (EI) Calcd for $\text{C}_{20}\text{H}_{16}\text{O}_1$ (M^+) 272.1201, found 272.1205.

8-(2-Methoxy-1-naphthyl)-2-tetralone (**1l**)

Compound **1l** was obtained from 8-(2-methoxy-1-naphthyl)-2-[spiro-2-(1,3-dioxolyl)]tetralin (**14l**) (27.6 mg) following Method F (1.5 h) as a white solid, in 98% yield: mp 115-117 °C; ^1H NMR δ 2.50 (dt, J = 2.6 and 6.8 Hz, 2H), 3.01 and 3.2 (AB system, J = 20.2 Hz, 2H), 3.09 (t, J = 6.8 Hz, 2H), 3.74 (s, 3H), 7.09 (dd, J = 2.5 and 6.6 Hz, 1H), 7.13-7.20 (m, 1H), 7.20-7.29 (m, 6H), 7.72-7.76 (m, 1H), 7.82 (d, J = 9.2 Hz, 1H); ^{13}C NMR δ 28.9, 38.4, 42.3, 56.3, 113.0, 122.3, 123.5, 124.6, 126.4, 126.6, 126.9, 128.0, 129.0, 129.5, 129.6, 133.0, 133.3, 135.7, 136.6, 153.5, 211.3; MS (EI): m/z (%) 57 (17), 202 (16), 215 (18), 228 (28), 243 (14), 269 (14), 302 (M^+ , 100); HRMS (EI) Calcd for $\text{C}_{21}\text{H}_{18}\text{O}_2$ (M^+) 302.1306, found 302.1319.

8-(8-Methoxy-1-naphthyl)-2-tetralone (**1m**)

Compound **1m** was obtained from 8-(8-methoxy-1-naphthyl)-2-[spiro-2-(1,3-dioxolyl)]tetralin (**14m**) (17.5 mg) following Method F (1 h) as a yellow oil, in 71% yield: ^1H NMR δ 2.46 (dt, J = 6.4 and 4.3 Hz, 2H), 3.03-3.10 (m, 4H), 3.30 (s, 3H), 6.65 (d, J = 7.8 Hz, 1H), 7.03-7.08 (m, 2H), 7.13-7.17 (m, 2H), 7.30-7.43 (m, 3H), 7.73 (d, J = 7.8 Hz, 1H); ^{13}C NMR δ 28.9, 38.5, 42.8, 55.3, 106.0, 121.4, 125.3, 125.5, 125.6, 126.1, 127.1, 127.9, 128.3, 131.5, 135.1, 135.6, 136.5, 144.9, 156.3, 211.3; MS (EI): m/z (%) 189 (12), 202 (23), 215 (43), 228 (32), 241 (100), 302 (M^+ , 59). HRMS (EI) Calcd for $\text{C}_{21}\text{H}_{18}\text{O}_2$ (M^+) 302.1306, found 302.1319.

8-(9-anthracenyl)-2-tetralone (1n)

Compound **1n** was obtained from 8-(8-methoxy-1-naphthyl)-2-[spiro-2-(1,3-dioxolyl)]tetralin (**14n**) (21.6 mg) following Method F (2.5 h) as a yellow solid, in 79% yield: mp 172-173 °C; ^1H NMR δ 2.52 (t, $J = 6.8$ Hz, 2H), 2.89 (s, 2H), 3.15 (t, $J = 6.8$ Hz, 2H), 7.15-7.18 (m, 1H), 7.22-7.27 (m, 2H), 7.33-7.39 (m, 6H), 7.95-7.98 (m, 2H), 8.42 (s, 1H); ^{13}C NMR δ 29.0, 38.6, 42.1, 125.2, 125.9, 126.7, 126.9, 127.3, 127.4, 128.7, 129.9, 130.0, 131.4, 133.2, 134.1, 134.3, 136.9, 137.9, 210.5; MS (EI): m/z (%) 263 (19), 265 (40), 279 (25), 289 (30), 306 (31), 322 (M^+ , 100); HRMS (EI) Calcd for $\text{C}_{21}\text{H}_{18}\text{O}_2$ (M^+) 302.1306, found 302.1319.

CDCl₃ (300 MHz)
T = 293 °K