

Experimental Section

General: All the experiments were carried out under an argon atmosphere. ^1H , ^{13}C and ^{19}F NMR spectra were measured on spectrometers at 500.13, 125.77 and 470.53 MHz, respectively. ^{19}F NMR chemical shifts were referenced to external CFCl_3 (0.0 ppm). ^{11}B NMR spectra at 64.2 MHz were obtained on a spectrometer equipped with the appropriate decoupling accessories. All ^{11}B chemical shifts were referenced to external $\text{BF}_3\cdot\text{OEt}_2$ (0.0 ppm) with a negative sign indicating an upfield shift. Palladium catalysts and Cs_2CO_3 were purchased from Aldrich. Phenyltriflate (**2a**), 4-acetylphenyltriflate (**2b**), 4-nitrophenyltriflate (**2c**) and ethyl 2-(trifluoromethylsulfonyloxy)-1-cyclopentene-1-carboxylate (**2d**) were obtained from Aldrich. Other triflates (**2e-k**) were prepared by reported procedures.¹ THF, DME and dioxane were distilled from benzophenone ketyl.

Representative Procedures for the Preparation of Potassium Benzyltrifluoroborate (1a) via the Grignard Method (Method A). To a solution of trimethyl borate (3.1 g, 30 mmol) in THF (20 mL) was added dropwise benzylmagnesium chloride (1.0 M THF solution, 20 mL, 20 mmol) over 10 min at $-78\text{ }^\circ\text{C}$ under an argon atmosphere. The resulting brownish suspension was stirred for 20 min at $-78\text{ }^\circ\text{C}$ and then allowed to warm to rt for 1 h. The mixture was then cooled to $0\text{ }^\circ\text{C}$ and KHF_2 (9.4 g, 120 mmol) was added followed by the addition of water (16 mL) over 50 min. After stirring at rt for 20 min, acetone was added and the liquid was poured off (2 x 80 mL), combined, and concentrated. The resulting white solid was subjected to high vacuum for 4 h and purified by dissolving in hot acetone and precipitating with Et_2O , obtaining a flaky white solid (2.6 g, 13 mmol, 66%). ^1H NMR (500 MHz, CD_3OD): δ 7.18-7.10 (m, 4 H), 7.00-6.90 (m, 1 H), 1.73 (br, 2 H). ^{13}C NMR (125.8 MHz, CD_3OD): δ 144.5, 128.5, 128.2, 123.7, 26.6. ^{11}B NMR (64.2 MHz, CD_3OD): δ 5.4. ^{19}F NMR (471 MHz, CD_3OD): δ -142.7. Anal. Calcd for $\text{C}_7\text{H}_7\text{BF}_3\text{K}$: C, 42.45; H, 3.56. Found: C, 42.55; H, 3.58.

Representative Procedures for the Preparation of Potassium 5-Cyanopentyltrifluoroborate

(1d) via the Catalytic Hydroboration Method (Method B). To a solution of 5-hexenenitrile (951 mg, 10 mmol) in dichloromethane (5 mL) in the presence of 1 mol% Rh(PPh₃)₃Cl catalyst was added with pinacolborane (1.0 M THF solution, 10 mL, 10 mmol) at 0 °C. The reaction mixture was stirred for 2 h at rt, and then extracted with ether (80 mL), washed with water (30 mL), dried over Mg₂SO₄, and filtered. After the removal of solvent, the crude product was obtained. By silica gel column chromatography (eluting with hexane/ether = 20:1 ~ 10:1), the hydroborated product was obtained (1.23 g, 5.5 mmol) in 55% yield. A part (669 mg, 3.0 mmol) of the resulting product was dissolved in ether (5 mL). To the solution was added KHF₂ (1.4 g, 18 mmol) at 0 °C followed by the addition of water (2.4 mL) for 1 h. The resulting mixture was stirred for 1 h. Acetone was added (2 x 80 mL) and the liquid was poured off, combined, concentrated, and then held under vacuum for 0.5 h. The resulting white solid was purified by dissolving in acetone and precipitating with Et₂O (202 mg, 1.0 mmol, 33%). ¹H NMR (500 MHz, DMSO-*d*⁶): δ 2.36 (m, 2 H), 1.44 (m, 2 H), 1.23 (m, 2 H), 1.10 (m, 2 H), -0.08 (m, 2 H). ¹³C NMR (125.8 MHz, DMSO-*d*⁶): δ 121.4, 32.4, 25.5, 25.2, 20.1 (br), 16.6. ¹¹B NMR (64.2 MHz, DMSO-*d*⁶): δ 5.7. ¹⁹F NMR (471 MHz, DMSO-*d*⁶): δ -137.5. Anal. Calcd for C₆H₁₀BF₃KN: C, 35.49; H, 4.96. Found: C, 35.36; H, 4.95.

Potassium 2-Phenylethyltrifluoroborate (1b). The compound was prepared by the procedure of Method A. ¹H NMR (500 MHz, CD₃OD): δ 7.18-7.10 (m, 4 H), 7.05-6.90 (m, 1 H), 2.51 (t, *J* = 8.8 Hz, 2 H), 0.48 (br, 2 H). ¹³C NMR (125.8 MHz, DMSO-*d*⁶): δ 148.4, 128.3, 128.1, 124.8, 32.5, 23.3 (br). ¹¹B NMR (64.2 MHz, CD₃OD): δ 6.1. ¹⁹F NMR (471 MHz, CD₃OD): δ -143.9. Anal. Calcd for C₈H₉BF₃K: C, 45.31; H, 4.28. Found: C, 45.23; H, 3.82.

Potassium 3-Phenylpropyltrifluoroborate (1c). The compound was prepared by the procedure of Method B. ¹H NMR (500 MHz, CD₃OD): δ 7.18-7.02 (m, 5 H), 2.52 (t, *J* = 7.3 Hz, 2 H), 1.53 (br, 2 H), 0.24 (br, 2 H). ¹³C NMR (125.8 MHz, CD₃OD): δ 145.8, 129.6, 129.1, 126.2, 41.0, 29.1. ¹¹B NMR

(64.2 MHz, CD₃OD): δ 6.3. ¹⁹F NMR (471 MHz, CD₃OD): δ -142.8. Anal. Calcd for C₉H₁₁BF₃K: C, 47.81; H, 4.90. Found: C, 47.77; H, 4.75.

Potassium (6-Benzoyloxy)hexyltrifluoroborate (1e). The compound was prepared by the procedure of Method B. ¹H NMR (500 MHz, DMSO-*d*⁶): δ 7.91 (d, *J* = 7.5 Hz, 2 H), 7.62-7.56 (m, 1 H), 7.51-7.44 (m, 2 H), 4.22 (t, *J* = 6.4 Hz, 2 H), 1.63 (t, *J* = 6.9 Hz, 2 H), 1.32-1.25 (m, 2 H), 1.23-1.15 (m, 2 H), 1.15-1.10 (m, 2 H), -0.05 (br, 2 H). ¹³C NMR (125.8 MHz, DMSO-*d*⁶): δ 166.2, 133.6, 130.3, 129.5, 129.2, 65.3, 33.1, 28.8, 26.2, 25.9, 20.4 (br). ¹¹B NMR (64.2 MHz DMSO-*d*⁶): δ 5.8. ¹⁹F NMR (471 MHz, DMSO-*d*⁶): δ -137.4. Anal. Calcd for C₁₃H₁₇BF₃KO₂: C, 50.02; H, 5.49. Found: C, 49.44; H, 5.65.

Potassium (5-Oxo)hexyltrifluoroborate (1f). The compound was prepared using Method B with catecholborane in place of pinacolborane. ¹H NMR (500 MHz, DMSO-*d*⁶): δ 2.27 (t, *J* = 7.5 Hz, 2 H), 2.00 (s, 3 H), 1.38-1.30 (m, 2 H), 1.10-1.00 (m, 2 H), -0.11 (br, 2 H). ¹³C NMR (125.8 MHz, DMSO-*d*⁶): 209.8, 44.0, 30.0, 27.8, 25.7, 19.9. ¹¹B NMR (64.2 MHz DMSO-*d*⁶): δ 6.0. ¹⁹F NMR (471 MHz, DMSO-*d*⁶): δ -137.4. Anal. Calcd for C₆H₁₁BF₃KO: C, 34.97; H, 5.38. Found: C, 34.94; H, 5.40.

Potassium Octyltrifluoroborate (1g). The compound was prepared by the procedure of Method A. ¹H NMR (500 MHz, DMSO-*d*⁶): δ 1.30-1.05 (m, 12 H), 0.81 (t, *J* = 5.5 Hz, 3 H), -0.08 (br, 2 H). ¹³C NMR (125.8 MHz, DMSO-*d*⁶): 33.3, 31.6, 29.5, 29.0, 25.6, 22.3, 20.2, 14.0. ¹¹B NMR (64.2 MHz, DMSO-*d*⁶): δ 5.1. ¹⁹F NMR (471 MHz, DMSO-*d*⁶): δ -137.5. Anal. Calcd for C₈H₁₇BF₃K: C, 43.65; H, 7.78. Found: C, 43.63; H, 7.95.

Potassium 1-Phenylethyltrifluoroborate (1h). The compound was prepared by the procedure of Method A. ¹H NMR (500 MHz, CD₃OD): δ 7.20-7.08 (m, 4 H), 7.00-6.90 (m, 1 H), 1.82 (br, 1 H), 1.18 (d, *J* = 7.4 Hz, 2 H). ¹³C NMR (125.8 MHz, CD₃OD): δ 152.8, 129.2, 128.9, 124.7, 32.7, 17.3. ¹¹B NMR (64.2 MHz, CD₃OD): δ 5.7. ¹⁹F NMR (471 MHz, CD₃OD): δ -148.5. Anal. Calcd for C₈H₉BF₃K:

C, 45.31; H, 4.28. Found: C, 44.96; H, 4.17.

Representative Procedure for the Cross-Coupling Reaction of Triflates with Potassium Alkyltrifluoroborates. 1-(4-Acetylphenyl)-1-phenylmethane (3b). To the suspension of potassium benzyltrifluoroborate (106 mg, 0.5 mmol), Cs₂CO₃ (489 mg, 1.5 mmol), PdCl₂(dppf)·CH₂Cl₂ (36 mg, 0.045 mmol) and 4-acetylphenyltriflate (134 mg, 0.5 mmol) in THF (5 mL) was added water (0.5 mL) under an argon atmosphere, followed by heating at reflux. The reaction mixture was stirred at reflux temperature for 18 h, then cooled to rt and diluted with water (10 mL) followed by extraction with ether (50 mL x 3). The ethereal solution was washed with 1N HCl (10 mL) and brine (20 mL) and dried over magnesium sulfate. The solvent was removed in vacuo and the crude product was purified by silica gel column chromatography (eluting with hexane/ether = 20:1) to yield 1-phenyl-1-(4-acetylphenyl)methane (108 mg, 0.48 mmol, 96%). Analytical TLC on silica gel, 10:1 (hexane/ether): *R_f* = 0.22. ¹H NMR (500 MHz, CDCl₃): δ 7.88 (d, *J* = 8.0 Hz, 2 H), 7.35-7.15 (m, 7 H), 4.03 (s, 2 H), 2.56 (s, 3 H). ¹³C NMR (125.8 MHz, CDCl₃): δ 197.6, 146.7, 140.0, 135.1, 129.0, 128.8, 128.5, 126.3, 41.8, 26.4. IR (KBr, cm⁻¹): 1681, 1607. HRMS (CI): *m/z* calcd for C₁₅H₁₅O (M+H⁺) 211.1123, found 211.1125.

1-(*p*-Nitrophenyl)-1-phenylmethane (3c). Analytical TLC on silica gel, 10:1 (hexane/ether): *R_f* = 0.48. ¹H NMR (500 MHz, CDCl₃): δ 8.12 (t, *J* = 8.6 Hz, 2 H), 7.35-7.28 (m, 4 H), 7.27-7.22 (m, 1 H), 7.17 (d, *J* = 7.3 Hz, 2 H), 4.07 (s, 2 H). ¹³C NMR (125.8 MHz, CDCl₃): δ 148.8, 146.4, 139.1, 129.6, 128.9, 128.7, 126.7, 123.6, 41.6. IR (neat, cm⁻¹): 1514, 1347. HRMS (CI): *m/z* calcd for C₁₃H₁₁NO₂ (M⁺) 213.0790, found 213.0785.

2-Benzylcyclopent-1-enecarboxylic acid, Ethyl Ester (3d). Analytical TLC on silica gel, 10:1 (hexane/ether): *R_f* = 0.48. ¹H NMR (500 MHz, CDCl₃): δ 7.30-7.16 (m, 5 H), 4.23 (q, *J* = 7.1 Hz, 2 H), 3.95 (s, 2 H), 2.66 (t, *J* = 7.0 Hz, 2 H), 2.38 (t, *J* = 7.5 Hz, 2 H), 1.76 (t, *J* = 7.5 Hz, 2 H), 1.31 (t, *J* = 7.1 Hz, 3 H). ¹³C NMR (125.8 MHz, CDCl₃): δ 166.1, 156.8, 139.1, 128.8, 128.3, 128.0, 126.0, 59.7, 37.8,

36.0, 33.7, 21.2, 14.3. IR (neat, cm^{-1}): 1709. HRMS (CI): m/z calcd for $\text{C}_{15}\text{H}_{19}\text{O}_2$ ($\text{M}+\text{H}^+$) 231.1385, found 231.1376.

1-(*p*-Acetylphenyl)-2-phenylethane (3e). Analytical TLC on silica gel, 10:1 (hexane/ether): R_f = 0.22. ^1H NMR (500 MHz, CDCl_3): δ 7.87 (d, J = 8.1 Hz, 2 H), 7.30-7.12 (m, 7 H), 2.99-2.92 (m, 4 H), 2.57 (s, 3 H). ^{13}C NMR (125.8 MHz, CDCl_3): δ 197.8, 147.5, 141.1, 135.2, 128.7, 128.5, 128.5, 128.4, 126.1, 37.8, 37.4, 26.6. IR (KBr, cm^{-1}): 1678. HRMS (CI): m/z calcd for $\text{C}_{16}\text{H}_{17}\text{O}$ ($\text{M}+\text{H}^+$) 225.1279, found 225.1275.

1-(*p*-Acetylphenyl)-3-phenylpropane (3f). Analytical TLC on silica gel, 10:1 (hexane/ether): R_f = 0.22. ^1H NMR (500 MHz, CDCl_3): δ 7.90 (d, J = 8.2 Hz, 2 H), 7.35-7.24 (m, 4 H), 7.23-7.15 (m, 3 H), 2.71 (t, J = 7.7 Hz, 2 H), 2.66 (t, J = 7.7 Hz, 2 H), 2.58 (s, 3 H), 2.04-1.93 (m, 2 H). ^{13}C NMR (125.8 MHz, CDCl_3): δ 197.6, 148.0, 141.7, 134.9, 128.5, 128.4, 128.3, 128.2, 125.6, 35.24, 35.21, 32.4, 26.4. IR (neat, cm^{-1}): 1681. MS (CI): m/z (relative intensity) 238 (M^+ , 100), 223 (60). HRMS (CI): m/z calcd for $\text{C}_{17}\text{H}_{19}\text{O}$ ($\text{M}+\text{H}^+$) 239.1436, found 239.1439.

6-(*p*-Nitrophenyl)hexanenitrile (3g). Analytical TLC on silica gel, 3:1 (hexane/ether): R_f = 0.10. ^1H NMR (500 MHz, CDCl_3): δ 8.08 (d, J = 8.6 Hz, 2 H), 7.28 (d, J = 8.5 Hz, 2 H), 2.69 (t, J = 7.6 Hz, 2 H), 2.33 (t, J = 7.0 Hz, 2 H), 1.68-1.63 (m, 4 H), 1.51-1.44 (m, 2 H). ^{13}C NMR (125.8 MHz, CDCl_3): δ 149.8, 146.4, 129.1, 123.7, 119.6, 35.5, 30.1, 28.2, 25.2, 17.1. IR (neat, cm^{-1}): 2245, 1514, 1344. HRMS (CI): m/z calcd for $\text{C}_{12}\text{H}_{15}\text{N}_2\text{O}_2$ ($\text{M}+\text{H}^+$) 219.1134, found 219.1136.

Benzoic Acid, 6-(2-Ethoxycarbonylcyclopent-1-enyl)hexyl Ester (3h). Analytical TLC on silica gel, 10:1 (hexane/ether): R_f = 0.20. ^1H NMR (500 MHz, CDCl_3): δ 8.02 (d, J = 7.2 Hz, 2 H), 7.53 (t, J = 7.4 Hz, 1 H), 7.45-7.38 (m, 2 H), 4.29 (t, J = 6.6 Hz, 2 H), 4.15 (q, J = 7.1 Hz, 2 H), 2.62-2.53 (m, 4 H), 2.49-2.42 (m, 2 H), 1.81-1.71 (m, 4 H), 1.49-1.25 (m, 6 H), 1.26 (t, J = 7.1 Hz, 3 H). ^{13}C NMR (125.8 MHz, CDCl_3): δ 166.5, 166.1, 159.5, 132.7, 130.4, 129.4, 128.2, 127.1, 64.9, 59.4, 38.1, 33.5, 29.8,

29.2, 28.6, 27.8, 25.8, 21.4. IR (neat, cm^{-1}): 1715. MS (CI): m/z (relative intensity) 345.3 ($\text{M}+\text{H}^+$, 23), 298.2 (100), 149.2 (83). HRMS (CI): m/z calcd for $\text{C}_{21}\text{H}_{29}\text{O}_4$ ($\text{M}+\text{H}^+$) 345.2066, found 345.2080.

1-(*p*-Acetylphenyl)-5-oxohexane(3i).² Analytical TLC on silica gel, 3:1 (hexane/ether): $R_f = 0.10$. ^1H NMR (500 MHz, CDCl_3): δ 7.83 (d, $J = 8.0$ Hz, 2 H), 7.21 (d, $J = 8.0$ Hz, 2 H), 2.66-2.53 (m, 2 H), 2.53 (s, 3 H), 2.44-2.37 (m, 2 H), 2.08 (s, 3 H), 1.60-1.55 (m, 4 H). ^{13}C NMR (125.8 MHz, CDCl_3): δ 208.7, 197.8, 148.0, 135.0, 128.6, 128.5, 43.4, 35.7, 30.5, 29.9, 26.5, 23.3. IR (neat, cm^{-1}): 1713, 1681.

***m*-Cyanooctylbenzene (3j).** Analytical TLC on silica gel, 10:1 (hexane/ether): $R_f = 0.50$. ^1H NMR (500 MHz, CDCl_3): δ 7.47-7.21 (m, 4 H), 2.60 (t, $J = 7.7$ Hz, 2 H), 1.63-1.54 (m, 2 H), 1.30-1.15 (m, 10 H), 0.86 (t, $J = 7.0$ Hz, 3 H). ^{13}C NMR (125.8 MHz, CDCl_3): δ 144.2, 133.0, 131.9, 129.4, 129.0, 119.1, 112.2, 35.5, 31.8, 31.1, 29.4, 29.2, 29.1, 22.6, 14.1. IR (neat, cm^{-1}): 2229. HRMS (CI): m/z calcd for $\text{C}_{15}\text{H}_{22}\text{N}$ ($\text{M}+\text{H}^+$) 216.1752, found 216.1757.

***m*-Trifluoromethyloctylbenzene (3k).** Analytical TLC on silica gel, 10:1 (hexane/ether): $R_f = 0.90$. ^1H NMR (500 MHz, CDCl_3): δ 7.48-7.33 (m, 4 H), 2.66 (t, $J = 7.8$ Hz, 2 H), 1.68-1.58 (m, 2 H), 1.38-1.22 (m, 10 H), 0.89 (t, $J = 6.9$ Hz, 3 H). ^{13}C NMR (125.8 MHz, CDCl_3): δ 143.8, 131.8, 130.5 (q, $J = 32.0$ Hz), 128.6, 125.0 (q, $J = 3.7$ Hz), 124.3 (q, $J = 272.3$ Hz), 122.4 (q, $J = 3.8$ Hz), 35.8, 31.9, 31.3, 29.4, 29.2, 22.7, 14.1. IR (neat, cm^{-1}): 2927, 2856, 1329, 1164. HRMS (CI): m/z calcd for $\text{C}_{15}\text{H}_{21}\text{F}_3$ (M^+) 258.1595, found 258.1590.

(*Z*)-2-Benzyl-3-methylundec-2-enoic Acid, Ethyl Ester (3l). Analytical TLC on silica gel, 10:1 (hexane/ether): $R_f = 0.52$. ^1H NMR (500 MHz, CDCl_3): δ 7.30-7.21 (m, 2 H), 7.18-7.11 (m, 3 H), 4.09 (q, $J = 7.1$ Hz, 2 H), 3.68 (s, 2 H), 2.39 (t, $J = 7.8$ Hz, 2 H), 1.83 (s, 3 H), 1.50-1.42 (m, 2 H), 1.30-1.20 (m, 12 H), 1.66 (t, $J = 7.1$ Hz, 3 H), 0.88 (t, $J = 6.5$ Hz, 3 H). ^{13}C NMR (125.8 MHz, CDCl_3): δ 169.1, 148.0, 139.9, 128.2, 128.0, 126.5, 125.8, 60.0, 36.5, 35.6, 31.8, 29.8, 29.5, 29.3, 28.5, 22.6, 20.2, 14.1,

14.0. IR (neat, cm^{-1}): 1713, 1197. HRMS (CI): m/z calcd for $\text{C}_{21}\text{H}_{32}\text{O}_2$ (M^+) 316.2402, found 316.2389.

(E)-2-Benzyl-3-methylundec-2-enoic Acid, Ethyl Ester (3m). Analytical TLC on silica gel, 10:1 (hexane/ether): $R_f = 0.44$. ^1H NMR (500 MHz, CDCl_3): δ 7.30-7.21 (m, 2 H), 7.18-7.11 (m, 3 H), 4.07 (q, $J = 7.1$ Hz, 2 H), 3.68 (s, 2 H), 2.16 (t, $J = 7.8$ Hz, 2 H), 2.02 (s, 3 H), 1.40-1.32 (m, 2 H), 1.30-1.20 (m, 12 H), 1.21 (t, $J = 7.1$ Hz, 3 H), 0.86 (t, $J = 6.5$ Hz, 3 H). ^{13}C NMR (125.8 MHz, CDCl_3): δ 169.4, 148.0, 140.2, 128.22, 128.18, 126.4, 125.8, 60.0, 36.1, 35.1, 31.8, 29.8, 29.4, 29.2, 27.8, 22.6, 21.0, 14.10, 14.08. IR (neat, cm^{-1}): 1713, 1184. HRMS (CI): m/z calcd for $\text{C}_{21}\text{H}_{32}\text{O}_2$ (M^+) 316.2402, found 316.2390.

Trifluoromethanesulfonic Acid, 4-Benzylphenyl Ester (3n). Analytical TLC on silica gel, 10:1 (hexane/ether): $R_f = 0.62$. ^1H NMR (500 MHz, CDCl_3): δ 7.35-7.15 (m, 9 H), 4.00 (s, 2 H). ^{13}C NMR (125.8 MHz, CDCl_3): δ 148.0, 141.7, 139.9, 130.5, 128.9, 128.7, 126.5, 121.2, 118.8 (q, $J = 320.7$ Hz), 41.1. IR (neat, cm^{-1}): 1249. MS (CI): m/z (relative intensity) 316 ($\text{M}+\text{H}^+$, 15), 239 (100). HRMS (CI): m/z calcd for $\text{C}_{14}\text{H}_{11}\text{F}_3\text{O}_3\text{S}$ ($\text{M}+\text{H}^+$) 316.0381, found 316.0367.

1-(p-Chlorophenyl)-1-phenylmethane (3o). Analytical TLC on silica gel, 10:1 (hexane/ether): $R_f = 0.80$. ^1H NMR (500 MHz, CDCl_3): δ 7.50-7.05 (m, 9 H), 3.93 (s, 2 H). ^{13}C NMR (125.8 MHz, CDCl_3): δ 140.6, 139.6, 131.9, 130.3, 128.9, 128.6, 126.3, 41.2. IR (neat, cm^{-1}): 3062, 3026, 1490, 1092.

1-(p-Acetylphenyl)-1-phenylethane (3p):³ Analytical TLC on silica gel, 10:1 (hexane/ether): $R_f = 0.22$. ^1H NMR (500 MHz, CDCl_3): δ 7.86 (d, $J = 8.0$ Hz, 2 H), 7.31-7.16 (m, 7 H), 4.19 (q, $J = 7.2$ Hz, 1 H), 2.55 (s, 3 H), 1.64 (d, $J = 7.2$ Hz, 3 H). ^{13}C NMR (125.8 MHz, CDCl_3): δ 197.8, 152.0, 145.3, 135.2, 128.6, 128.5, 127.8, 127.6, 126.4, 44.8, 26.6, 21.5. IR (neat, cm^{-1}): 3026, 2966, 1681, 1357, 1268.

6-(*p*-Acetylphenyl)-1-bromohexane (3q). Analytical TLC on silica gel, 10:1 (hexane/ether): $R_f = 0.30$. $^1\text{H NMR}$ (500 MHz, CDCl_3): δ 7.84 (d, $J = 8.1$ Hz, 2H), 7.22 (d, $J = 8.1$ Hz, 2H), 3.35 (t, $J = 6.7$ Hz, 2H), 2.63 (t, $J = 7.6$ Hz, 2H), 2.63 (t, $J = 7.6$ Hz, 2H), 2.54 (s, 3H), 1.84-1.77 (m, 2H), 1.64-1.57 (m, 2H), 1.46-1.40 (m, 2H). $^{13}\text{C NMR}$: δ 197.8, 148.4, 135.0, 128.6, 128.5, 35.8, 33.9, 32.6, 30.8, 28.3, 27.9, 26.5. IR (neat, cm^{-1}): 1680, 1605. HRMS (CI): m/z calcd for $\text{C}_{14}\text{H}_{19}\text{BrO}$ (M^+) 282.0619, found 282.0622.

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