Supporting Information

to accompany

Interrupted Nazarov Cyclization on Silica Gel

Francis Dhoro and Marcus A. Tius*

Contribution from the Department of Chemistry, 2545 The Mall, University of Hawaii, Honolulu, Hawaii
96822

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Experimental Section

General: ^1H NMR and ^{13}C NMR spectra were recorded on either a Varian Mercury Plus 300 operating at 300 MHz (^1H) or 75 MHz (^{13}C) or on a Varian Unity Inova 500 operating at 500 MHz (^1H) or 126 MHz (^{13}C). Chemical shifts are reported in parts per million (δ) and are referenced to the solvent, i.e. 7.26/77.0 for CDCl_3 . Multiplicities are indicated as br (broadened), s (singlet), d (doublet), t (triplet), q (quartet), quint (quintet), sept (septet), or m (multiplet). Coupling constants (J) are reported in Hertz (Hz). Infrared spectra were recorded on a Perkin Elmer IR 1430 spectrometer. Electron impact mass spectra were recorded on a VG-70SE mass spectrometer. Thin layer chromatography (TLC) was performed on Sigma-Aldrich TLC plates, 250 μm , particle size 5-17 μm , pore size 60 Å. Flash column chromatography was performed on Natland International Corporation silica gel, 200-400 mesh and Sorbent technologies, premium R_f , 60 Å, 40-75 μm . Anhydrous THF was taken from a GlassContour (www.glasscontour.com) solvent purification system. The silica gel was activated by heating under vacuum at 160 $^\circ\text{C}$ for 16 h. The amines were distilled and stored over potassium hydroxide before use. All moisture sensitive reactions were performed under a static atmosphere of nitrogen or argon atmosphere in oven dried or flame dried glassware.

A general method for the preparation of cyclopentenone **7** is described below. The general method was applied to the synthesis of **8** and **39**.

To a solution of ether **40** (147 mg, 0.65 mmol) in THF (3 ml) at $-78\text{ }^\circ\text{C}$ was added *n*-BuLi (0.25 ml, 0.63 mmol, 2.5 M in hexanes). After 30 min, a solution of enamide **2** (125 mg, 0.54 mmol) in THF (1 ml) was added dropwise via cannula. The reaction was stirred at $-78\text{ }^\circ\text{C}$ for 1 h, quenched with 1M HCl and diluted with ether. The aqueous phase was extracted with Et_2O (3X) and the combined organic extracts were washed with brine (1X), dried over MgSO_4 , and concentrated under reduced pressure. Removal of trace solvent was done under high vacuum for 1 h. The crude product was transferred to a 4-dram vial charged with two glass beads. To a separate 4-dram vial containing activated silica gel (540 mg, 9.00 mmol) was added triethylamine (90 μl , 66 mg, 0.65 mmol). The mixture was stirred for 10 min and then transferred to the vial that contained crude enone **5**. The reaction was stirred at room temperature for 3 h. Direct purification of the reaction mixture by flash column chromatography on silica gel (5% EtOAc in hexanes) gave cyclopentenone **7** as a colorless oil (126 mg, 63% yield): $R_f = 0.33$ (5% EtOAc in hexanes). ^1H NMR (300 MHz, CDCl_3) δ 7.34-7.18 (m, 4 H), 7.14-7.04 (m, 1 H), 5.93 (s, 1 H), 4.98 (s, 1 H), 4.22 (s, 1 H), 4.08 (s, 3 H), 2.21 (d, $J = 12.0$ Hz, 1 H), 1.31 (d, $J = 12.0$ Hz, 1 H), 1.03-0.93 (m, 21 H); ^{13}C NMR (75 MHz, CDCl_3) δ 188.4, 156.3, 153.4, 145.9, 140.2, 128.7, 127.7, 127.1, 116.2, 57.8, 49.6, 18.3, 12.1, 11.8; IR (film) 2943, 2866, 1688, 1656, 1605, 1447, 1385, 1342 cm^{-1} ; EIMS m/z (%) 370 (M^+ , 7), 346 (5), 327 (18), 197 (25); HREIMS calcd for $\text{C}_{23}\text{H}_{34}\text{O}_2\text{Si}$ 370.2328, found 370.2315.

Isolated as a white solid (105 mg, 68%): mp = 70-71 $^\circ\text{C}$, $R_f = 0.28$ (20% diethyl ether in hexanes). ^1H NMR (300 MHz, CDCl_3) δ 7.28-7.34 (m, 3 H), 7.10-7.16 (m, 2 H), 6.09 (s, 1 H), 5.41 (s, 2 H), 5.13 (s, 1

H), 4.24 (s, 1 H), 3.52 (s, 3 H), 1.86 (s, 3 H); ^{13}C NMR (75 MHz, CDCl_3) δ 190.0, 152.9, 152.1, 145.7, 140.8, 129.0, 128.1, 127.5, 118.2, 95.3, 56.8, 50.1, 12.7; IR (neat) 2953, 1695, 1663, 1626, 1453, 1409 cm^{-1} ; EIMS m/z (%) 244 (M^+ , 66), 229 (63), 213 (38), 184 (42), 115 (72), 84 (100); HREIMS calcd for $\text{C}_{15}\text{H}_{16}\text{NO}_3\text{Si}$ 244.1099, found 244.1106.

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Isolated as a colorless oil (136 mg, 68% yield): R_f = 0.31 (3% EtOAc in hexanes). ^1H NMR (300 MHz, CDCl_3) δ 6.80 (ddd, J = 8.4, 4.5, 1.5 Hz, 1 H), 3.99 (s, 3 H), 3.00 (d, J = 11.7 Hz, 1 H), 2.52-2.38 (m, 1 H), 2.27 (d, J = 12.3 Hz, 1 H), 2.24-2.08 (m, 3 H), 1.92-1.80 (m, 1 H), 1.67 (d, J = 12.3 Hz, 1 H), 1.60-1.56 (m, 1 H), 1.32-1.18 (m, 2 H), 1.18-1.00 (m, 21 H); ^{13}C NMR (75 MHz, CDCl_3) δ 188.1, 156.5, 152.2, 141.8, 133.0, 57.7, 43.7, 31.4, 30.5, 28.4, 26.4, 18.4, 11.7, 10.7; IR (film) 2940, 2866, 1692, 1664, 1610, 1445 cm^{-1} ; EIMS: m/z (%) 348 (M^+ , 100), 305 (41), 290 (90), 131 (56); HREIMS calcd for $\text{C}_{21}\text{H}_{36}\text{O}_2\text{Si}$ 348.2485, found 348.2478.

A general procedure for the preparation of all aminocyclopentenones is illustrated for the case of **11**.

To a solution of ether **40** (147 mg, 0.65 mmol) in THF (3 ml) at -78°C was added $n\text{-BuLi}$ (0.25 ml, 0.63 mmol, 2.5 M in hexanes). After 30 min, a solution of enamide **2** (125 mg, 0.54 mmol) in THF (1 ml) was added dropwise via cannula. The reaction was stirred at -78°C for 1 h, quenched with 1M HCl and diluted with ether. The aqueous phase was extracted with Et_2O (3X) and the combined organic extracts were washed with brine (1X), dried over MgSO_4 , and concentrated under reduced pressure. Removal of trace solvent was done under high vacuum for 1 h. The crude product was transferred to a vial charged with two glass beads. To a separate vial containing activated silica gel (540 mg, 9.00 mmol) was added cyclohexylamine (74 μl , 64 mg, 0.65 mmol). The mixture was stirred for 10 min and then transferred to the vial that contained crude enone **5**. The reaction was stirred at room temperature for 3 h. Direct purification of the reaction mixture by flash column chromatography on silica gel (10% EtOAc in hexanes) gave aminocyclopentenone **11** (165 mg, 65% yield) as a colorless oil: R_f = 0.33 (10% EtOAc in hexanes). ^1H NMR (300 MHz, CDCl_3) δ 7.35-7.20 (m, 4 H), 7.08 (bs, 1 H), 4.00 (s, 3 H), 3.90 (s, 1 H), 2.35 (d, J = 12.0 Hz, 1 H), 2.36-2.26 (m, 1 H), 1.96-1.82 (m, 2 H), 1.74-1.62 (m, 2 H), 1.52 (d, J = 12.0 Hz, 1 H), 1.60-1.48 (m, 1 H), 1.30-1.12 (m, 3 H), 1.12-0.92 (m, 23 H), 0.57 (s, 3 H); ^{13}C NMR (75 MHz, CDCl_3) δ 204.4, 157.9, 150.2, 137.7, 128.2, 126.7(2), 64.6, 57.7, 54.1, 52.4, 37.8, 35.6, 25.7, 25.4, 23.1, 18.3, 12.5, 11.6; IR (film) 2924, 2866, 1670, 1624, 1451, 1366, 1334 cm^{-1} ; EIMS m/z (%) 469 (M^+ , 83), 426 (12), 372 (4), 312 (33), 84 (100); HREIMS calcd for $\text{C}_{29}\text{H}_{47}\text{NO}_2\text{Si}$ 469.3376, found 469.3343.

Isolated as a colorless oil (155 mg, 60% yield): R_f = 0.33 (6% EtOAc in Hexanes). ^1H NMR (300 MHz, CDCl_3) δ 7.36-7.14 (m, 10 H), 3.98 (s, 3 H), 3.92 (s, 1 H), 3.64 (s, 2 H), 2.31 (d, J = 12.0 Hz, 1 H), 1.46 (d, J = 12.0 Hz, 1 H), 1.02-0.80 (m, 21 H), 0.64 (s, 3 H); ^{13}C NMR (75 MHz, CDCl_3) δ 203.0, 158.8, 150.2, 139.8, 137.8, 128.3 (2), 128.2 (2), 127.0, 126.9, 64.6, 57.8, 54.1, 47.6, 21.9, 18.3, 12.9, 11.8; IR (film) 3027, 2942, 2866, 1698, 1621, 1452, 1335 cm^{-1} ; EIMS m/z (%) 477 (M^+ , 1), 372 (7), 131 (81), 103 (75), 75 (100); HREIMS calcd for $\text{C}_{30}\text{H}_{43}\text{NO}_2\text{Si}$ 477.3063, found 477.3049.

Isolated as colorless oil (167mg, 63% yield): R_f = 0.23 (10% EtOAc in hexanes). ^1H NMR (300 MHz, CDCl_3) δ 7.38-7.22 (m, 8 H), 6.99 (bs, 2 H), 4.04 (s, 3 H), 3.81 (s, 1 H), 2.90-2.74 (m, 4 H), 2.37 (d, J = 12.0 Hz, 1 H), 1.82 (bs, 1 H), 1.52 (d, J = 12.0 Hz, 1H), 1.08-0.92 (m, 21 H), 0.66 (s, 3 H); ^{13}C NMR (75 MHz, CDCl_3) δ 203.1, 158.2, 149.9, 139.7, 137.9, 128.5, 128.2, 128.1, 128.0, 126.7, 125.9, 64.0, 57.7, 54.2, 44.6, 36.7, 21.9, 18.2, 12.6, 11.7; IR (film) 3026, 2942, 2865, 1696, 1621, 1495, 1453, 1335 cm^{-1} ; EIMS m/z (%) 491 (M^+ , 58), 400 (100), 372 (45), 157 (36), 115 (47); HREIMS calcd for $\text{C}_{31}\text{H}_{45}\text{NO}_2\text{Si}$ 491.3220, found 491.3224.

Isolated as a colorless oil (171 mg, 67% yield): R_f = 0.25 (45% EtOAc in hexanes). ^1H NMR (300 MHz, CDCl_3) δ 7.32-7.18 (m, 4 H), 7.07 (bs, 1 H), 4.42 (t, J = 5.4 Hz, 1 H), 3.99 (s, 3 H), 3.83 (s, 1 H), 3.33 (s, 3 H), 3.32 (s, 3 H), 2.66 (dd, J = 11.7, 5.4 Hz, 1 H), 2.65 (dd, J = 11.7, 5.4 Hz, 1 H), 2.32 (d, J = 12.0 Hz, 1 H), 1.66 (bs, 1 H), 1.46 (d, J = 12.0 Hz, 1 H), 1.10-0.88 (m, 21 H), 0.61 (s, 3 H); ^{13}C NMR (75 MHz, CDCl_3) δ 202.8, 157.8, 149.9, 139.9, 128.2, 126.8, 103.7, 63.7, 57.7, 54.6, 53.5, 53.0, 44.8, 21.4, 18.3, 12.6, 11.7; IR (film) 2943, 2868, 1697, 1624, 1452, 1367 cm^{-1} ; EIMS m/z (%) 475 (M^+ , 10), 400 (6), 84 (100); HREIMS calcd for $\text{C}_{27}\text{H}_{45}\text{NO}_4\text{Si}$ 475.3118, found 475.3113.

Isolated as a colorless oil (143 mg, 58% yield): R_f = 0.29 (10% EtOAc in hexanes). ^1H NMR (300 MHz, CDCl_3) δ 7.34-7.14 (m, 4 H), 6.82 (bs, 1 H), 4.03 (s, 3 H), 3.99 (s, 1 H), 2.60-2.40 (m, 4 H), 2.29 (d, J = 12.0 Hz, 1 H), 1.50-1.62 (m, 4 H), 1.40-1.49 (m, 2 H), 1.37 (d, J = 12.0 Hz, 1 H), 0.94-1.12 (m, 21 H), 0.69 (s, 3 H); ^{13}C NMR (75 MHz, CDCl_3) δ 202.5, 158.5, 150.6, 139.1, 131.6, 128.1, 126.5, 68.5, 57.7, 50.9, 48.5, 26.2, 24.7, 18.9, 18.3, 12.7, 11.7; IR (film) 2938, 2865, 1701, 1632, 1453, 1336 cm^{-1} ; EIMS m/z (%) 455 (M^+ , 7), 103 (61), 131 (69); HREIMS calcd for $\text{C}_{28}\text{H}_{45}\text{NO}_2\text{Si}$ 455.3220, found 455.3209.

Isolated as a colorless oil (173 mg, 70% yield): R_f = 0.29 (15% EtOAc in hexanes). ^1H NMR (300 MHz, CDCl_3) δ 7.18-7.34 (m, 4 H), 6.82 (bs, 1 H), 4.04 (s, 1 H), 3.99 (s, 3 H), 3.70 (m, 4 H), 2.59 (m, 4 H), 2.30 (d, J = 12.0 Hz, 1 H), 1.38 (d, J = 12.0 Hz, 1 H), 0.90-1.20 (m, 21 H), 0.71 (s, 3 H); ^{13}C NMR (75 MHz, CDCl_3) δ 201.8, 159.0, 150.7, 138.7, 131.5, 128.4, 126.8, 68.0, 67.3, 57.8, 51.1, 47.8, 18.6, 18.4, 12.9, 11.9; IR (film) 2943, 2891, 2865, 1699, 1628, 1453, 1337 cm^{-1} ; EIMS m/z (%) 457 (M^+ , 94), 442 (29), 372 (67), 313 (49), 157 (69), 115 (100); HREIMS calcd for $\text{C}_{27}\text{H}_{43}\text{NO}_3\text{Si}$ 457.3012, found 457.3004.

Isolated as a white solid (75 mg, 30% yield): mp 50-53 $^{\circ}\text{C}$, R_f = 0.28 (7% EtOAc in hexanes). ^1H NMR (300 MHz, CDCl_3) δ 7.50-7.36 (m, 4 H), 7.30-7.10 (m, 2 H), 6.94 (t, J = 7.2 Hz, 1 H), 6.78-6.72 (m, 2 H), 4.38 (s, 1 H), 4.18 (s, 3 H), 2.52 (d, J = 12.0 Hz, 1 H), 1.75 (d, J = 12.0 Hz, 1 H), 1.10-0.95 (m, 24 H); ^{13}C NMR (75 MHz, CDCl_3) δ 199.6, 157.1, 149.9, 143.1, 136.4, 129.0(2), 128.1, 126.9, 119.6, 116.0, 64.3, 57.7, 51.2, 24.2, 18.1, 12.6, 11.6; IR (neat) 3355, 2942, 2866, 1703, 1602, 1497, 1455, 1369, 1334 cm^{-1} ; EIMS m/z (%) 463 (M^+ , 20), 371(15), 160 (48), 131 (100), 103 (80); HREIMS calcd for $\text{C}_{29}\text{H}_{41}\text{NO}_2\text{Si}$ 463.2907, found 463.2934.

Isolated as a colorless oil (166 mg, 63% yield): R_f = 0.28 (25% EtOAc in hexanes). ^1H NMR (300 MHz, CDCl_3) δ 3.87 (s, 3 H), 2.70 (q, J = 7.2 Hz, 1 H), 2.25 (dd, J = 12.3, 1.2 Hz, 1 H), 2.82-2.65 (m, 1 H), 1.85-1.45 (m, 7 H), 1.59 (d, J = 12.3 Hz, 1 H), 1.13 (d, J = 7.2 Hz, 3 H), 1.10-1.04 (m, 24 H), 1.00 (s, 3 H); ^{13}C NMR (75 MHz, CDCl_3) δ 205.0, 161.2, 148.4, 68.9, 57.5, 52.5, 41.3, 37.5, 35.5, 25.6, 25.5, 25.3, 21.6, 18.4, 12.9, 11.8, 11.3; IR (film) 2926, 2866, 1696, 1622, 1448, 1377, 1337 cm^{-1} ; EIMS m/z (%) 407 (M^+ , 100), 392 (44), 310 (71), 250 (39); HREIMS calcd for $\text{C}_{24}\text{H}_{45}\text{NO}_2\text{Si}$ 407.3220, found 407.3240.

Isolated as a colorless oil (172 mg, 64% yield): R_f = 0.31 (15% EtOAc in hexanes). ^1H NMR (300 MHz, CDCl_3) δ 7.34-7.18 (m, 5 H), 3.93 (s, 3 H), 3.58 (d, J = 12.3 Hz, 1 H), 3.51 (d, J = 12.3 Hz, 1 H), 2.79 (q, J = 7.2 Hz, 1 H), 2.28 (dd, J = 12.0, 1.2 Hz, 1 H), 1.82 (bs, 1 H), 1.63 (d, J = 12.0 Hz, 1 H), 1.39 (d, J = 7.2 Hz, 3 H), 1.11 (s, 3 H), 1.01-1.10 (m, 21 H); ^{13}C NMR (75 MHz, CDCl_3) δ 204.1, 161.8, 148.5, 140.4, 128.2, 127.9, 126.8, 63.9, 57.5, 47.7, 40.7, 20.9, 18.4, 13.2, 11.8, 11.5; IR (film) 2942, 2866, 1696, 1620, 1454, 1338 cm^{-1} ; EIMS m/z (%) 415 (M^+ , 10), 400 (16), 310 (100), 90 (90); HREIMS calcd for $\text{C}_{25}\text{H}_{41}\text{NO}_2\text{Si}$ 415.2907, found 415.2907.

Isolated as a colorless oil (153 mg, 55% yield): R_f = 0.26 (25% EtOAc in hexanes). ^1H NMR (300 MHz, CDCl_3) δ 7.44-7.33 (m, 3 H), 7.32-7.24 (m, 2 H), 4.00 (s, 3 H), 2.90-2.70 (m, 5 H), 2.36 (d, J = 12.3 Hz, 1 H), 1.82 (bs, 1 H), 1.72 (d, J = 12.3 Hz, 1 H), 1.26 (d, J = 7.5 Hz, 3 H), 1.20-1.10 (m, 24 H); ^{13}C NMR (75 MHz, CDCl_3) δ 203.8, 161.7, 148.4, 139.5, 128.4, 128.2, 125.9, 63.2, 57.5, 44.6, 41.0, 36.8, 20.6, 18.3, 13.5, 11.7, 11.4; IR (film) 2942, 2866, 1694, 1620, 1456, 1337 cm^{-1} ; EIMS m/z (%) 429 (M^+ , 29), 414 (20), 338 (57), 310 (100); HREIMS calcd for $\text{C}_{26}\text{H}_{43}\text{NO}_2\text{Si}$ 429.3063, found 429.3088.

Isolated as a colorless oil (137 mg, 51% yield): R_f = 0.40 (40% EtOAc in hexanes). ^1H NMR (300 MHz, CDCl_3) δ 4.37 (t, J = 5.7 Hz, 1 H), 3.88 (s, 3 H), 3.31 (s, 3 H), 3.30 (s, 3 H), 2.65 (q, J = 7.5 Hz, 1 H), 2.51 (d, J = 5.7 Hz, 2 H), 2.25 (d, J = 12.0 Hz, 1 H), 1.80 (bs, 1 H), 1.60 (d, J = 12.0 Hz, 1 H), 1.13 (d, J = 7.5 Hz, 3 H), 1.02-1.08 (m, 24 H); ^{13}C NMR (75 MHz, CDCl_3) δ 203.3, 161.3, 148.2, 103.4, 62.9, 57.4,

53.5, 52.7, 44.4, 41.1, 20.4, 18.3, 13.4, 11.7, 11.4; IR (film) 2943, 2867, 1698, 1621, 1462, 1447 cm^{-1} ; EIMS m/z (%) 413(M^+ , 83), 381(19), 338 (39), 310 (100); HREIMS calcd for $\text{C}_{22}\text{H}_{43}\text{NO}_4\text{Si}$ 413.2961, found 413.2999.

Isolated as a colorless oil (170 mg, 66% yield): R_f = 0.33 (40% EtOAc in hexanes). ^1H NMR (300 MHz, CDCl_3) δ 3.83 (s, 3 H), 3.57-3.70 (m, 4 H), 2.80 (q, J = 7.2 Hz, 1 H), 2.60-2.50 (m, 2 H), 2.42-2.32 (m, 2 H), 2.20 (dd, J = 12.3, 1.2 Hz, 1 H), 1.56 (d, J = 12.3 Hz, 1 H), 1.10-0.98 (m, 27 H); ^{13}C NMR (75 MHz, CDCl_3) δ 201.6, 161.8, 148.7, 67.12, 67.08, 57.6, 47.2, 36.7, 18.4, 17.4, 14.8, 11.8, 11.3; IR (film) 2944, 2866, 1695, 1623, 1455, 1383, 1338 cm^{-1} ; EIMS m/z (%) 395 (M^+ , 6), 380 (6), 310 (30), 84 (100); HREIMS calcd for $\text{C}_{23}\text{H}_{41}\text{NO}_2\text{Si}$ 395.2856, found 395.2885.

Isolated as a colorless oil (175 mg, 68% yield) R_f = 0.24 (10% EtOAc in hexanes). ^1H NMR (300 MHz, CDCl_3) δ 3.92 (s, 3 H), 2.60 (dd, J = 7.2, 3.0 Hz, 1 H), 2.29 (d, J = 12.0 Hz, 1 H), 2.28-2.20 (m, 1 H), 2.01-1.89 (m, 2 H), 1.80-1.40 (m, 14 H), 1.55 (d, J = 12.0 Hz, 1 H), 1.41-1.30 (m, 3 H), 1.15-1.00 (m, 22 H); ^{13}C NMR (75 MHz, CDCl_3) δ 205.4, 162.6, 150.5, 66.6, 57.7, 51.2, 49.2, 37.8, 36.0, 35.5, 31.0, 28.2, 25.9, 25.7, 25.6, 25.5, 23.5, 18.5, 11.9, 10.9; IR (film) 3322, 2926, 2865, 1694, 1651, 1622, 1446, 1335 cm^{-1} ; EIMS m/z (%) 447 (M^+ , 4), 388 (14), 351 (27), 350 (100), 264 (53); HREIMS calcd for $\text{C}_{27}\text{H}_{49}\text{NO}_2\text{Si}$ 447.3533, found 447.3561.

Isolated as a colorless oil (196 mg, 75% yield): R_f = 0.28 (5% EtOAc in hexanes). ^1H NMR (300 MHz, CDCl_3) δ 7.16-7.30 (m, 5 H), 3.95 (s, 3 H), 3.55 (s, 2 H), 2.73 (dd, J = 7.5, 2.7 Hz, 1 H), 2.32 (d, J = 12.0 Hz, 1 H), 1.34-2.60 (m, 8 H), 1.58 (d, J = 12.0 Hz, 1 H), 1.18-1.28 (m, 2 H), 0.98-1.12 (m, 21 H); ^{13}C NMR (75 MHz, CDCl_3) δ 204.8, 163.0, 150.4, 140.6, 128.2, 128.0, 126.7, 66.6, 57.7, 48.6, 47.1, 34.8, 31.0, 28.6, 25.9, 23.4, 18.4, 17.7, 11.9; IR (film) 2924, 2865, 1691, 1618, 1459, 1335; EIMS m/z (%) 351 (27), 350 (100), 335 (13), 291(23), 157 (24), 91 (61); HREIMS calcd for $\text{C}_{28}\text{H}_{45}\text{NO}_2\text{Si}$ 455.3220, found 447.3177.

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Isolated as colorless oil (190 mg, 71% yield): R_f = 0.30 (15 % EtOAc in hexanes). ^1H NMR (300 MHz, CDCl_3) δ 7.40-7.24 (m, 5 H), 4.02 (s, 3 H), 2.84-2.68 (m, 5 H), 2.40 (d, J = 12.0 Hz, 1 H), 3.40-2.20 (m, 1 H), 1.96-1.60 (m, 7 H), 1.62 (d, J = 12.0 Hz, 1 H), 1.54-1.42 (m, 2 H), 1.22-1.06 (m, 21 H); ^{13}C NMR (75 MHz, CDCl_3) δ 204.9, 162.9, 150.5, 139.7, 128.5, 128.2, 125.9, 66.3, 57.7, 48.3, 44.5, 36.9, 35.1, 30.9, 28.4, 25.7, 23.5, 18.4, 11.8, 10.9; IR (film) 3026, 2923, 2864, 1690, 1618, 1496, 1449; EIMS m/z (%) 379 (13), 378 (46), 350 (79), 329 (28), 260 (100), 105 (41); HREIMS calcd for $\text{C}_{29}\text{H}_{47}\text{NO}_2\text{Si}$ 469.3376, found 469.3348.

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Isolated as a colorless oil (155 mg, 60% yield): R_f = 0.45 (40% EtOAc in hexanes). ^1H NMR (300 MHz, CDCl_3) δ 4.31 (t, J = 5.7 Hz, 1 H), 3.89 (s, 3 H), 3.27 (s, 3 H), 3.26 (s, 3 H), 2.58 (d, J = 5.1 Hz, 1 H), 2.56 (dd, J = 11.7, 5.4 Hz, 1 H), 2.48 (dd, J = 11.7, 5.1 Hz, 1 H), 2.27 (d, J = 12.0 Hz, 1 H), 2.00-1.86 (m, 1 H), 1.54 (d, J = 12.0 Hz, 1 H), 1.42-1.82 (m, 7 H), 1.42-1.30 (m, 2 H), 1.09-1.00 (m, 21 H); ^{13}C NMR (75 MHz, CDCl_3) δ 204.1, 162.3, 149.9, 103.7, 65.6, 57.6, 53.3, 52.9, 49.1, 43.9, 34.1, 30.9, 28.4, 25.9, 23.3, 18.4, 11.8, 11.7; IR (film) 2935, 2866, 1698, 1623, 1446 cm^{-1} ; EIMS m/z (%) 453 (M^+ , 3), 422 (8), 378 (35), 350 (100); HREIMS calcd for $\text{C}_{25}\text{H}_{47}\text{NO}_4\text{Si}$ 453.3274 found, 453.3263.

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Isolated as a colorless oil (127 mg, 51% yield): R_f = 0.30 (10% EtOAc in hexanes). ^1H NMR (300 MHz, CDCl_3) δ 3.89 (s, 3 H), 2.86-2.78 (m, 1 H), 2.60-2.46 (m, 2 H), 2.48 (d, J = 12.0 Hz, 1 H), 2.28-2.20 (m, 2 H), 2.04-1.82 (m, 3 H), 1.52 (d, J = 12.0 Hz, 1 H), 1.80-1.30 (m, 11 H), 1.18-1.00 (m, 22 H). ^{13}C NMR (75 MHz, CDCl_3) δ 204.2, 163.3, 151.8, 71.1, 58.0, 48.4, 44.4, 32.6, 31.3, 28.7, 26.7, 25.5, 25.2, 24.1, 18.8, 12.2, 11.2; EIMS m/z (%) 433 (M^+ , 1), 350 (38), 251 (36), 250 (100). HREIMS calcd for $\text{C}_{27}\text{H}_{47}\text{NO}_2\text{Si}$ 433.3376, found 433.3380.

34

Isolated as a colorless oil (153 mg 61% yield): $R_f = 0.17$ (15% EtOAc in hexanes). ^1H NMR (300 MHz, CDCl_3) δ 3.89 (s, 3 H), 3.62-3.58 (m, 4 H), 2.90-2.80 (m, 1 H), 2.62-2.52 (m, 2 H), 2.41-2.30 (m, 2 H), 2.27 (d, $J = 12.0$ Hz, 1 H), 2.10-1.52 (m, 8 H), 1.51 (d, $J = 12.0$ Hz, 1 H), 1.10-0.98 (m, 23 H); ^{13}C NMR (75 MHz, CDCl_3) δ 202.8, 163.4, 151.5, 70.2, 67.3, 57.8, 47.5, 43.9, 31.9, 31.0, 28.3, 25.0, 23.7, 18.5, 11.9, 10.9; IR (film) 2923, 2864, 1691, 1625, 1449, 1385, 1338 cm^{-1} ; EIMS m/z (%) 392 (8), 351 (30), 350 (100), 291 (29), 115 (16); HREIMS calcd for $\text{C}_{25}\text{H}_{45}\text{NO}_3\text{Si}$ 435.3169, found 435.3169.

36

Isolated as a colorless oil (153 mg, 59% yield): $R_f = 0.36$ (9% EtOAc in hexanes). ^1H NMR (300 MHz, CDCl_3) δ 3.88 (s, 3 H), 2.64 (t, 1 H), 2.30 (d, $J = 12.0$ Hz, 1 H), 2.25-2.18 (m, 1 H), 1.55 (d, $J = 12.0$ Hz, 1 H), 1.85-1.40 (m, 14 H), 1.33-1.20 (m, 3 H), 1.12-1.02 (m, 22 H); ^{13}C NMR (75 MHz, CDCl_3) δ 205.7, 160.8, 149.7, 63.2, 57.3, 52.0, 42.7, 37.3, 35.6, 31.2, 25.5, 25.4, 25.2, 22.7, 18.2, 17.7, 11.7, 11.2; IR (film) 2932, 2865, 1693, 1652, 1621, 1446 cm^{-1} ; EIMS m/z (%) 433 (M^+ , 4), 418 (2), 374 (13), 337 (25), 336 (100), 264 (48); HREIMS calcd for $\text{C}_{26}\text{H}_{47}\text{NO}_2\text{Si}$ 433.3376, found 433.3351.

37

Isolated as a colorless oil (158 mg, 60% yield): $R_f = 0.30$ (6% EtOAc in hexanes). ^1H NMR (300 MHz, CDCl_3) δ 7.27-7.13 (m, 5 H), 3.90 (s, 3 H), 3.45 (d, $J = 12.6$ Hz, 1 H), 2.56 (d, $J = 12.6$ Hz, 1 H), 2.65 (t, $J = 5.0$ Hz, 1 H), 2.28 (d, $J = 12.0$ Hz, 1 H), 1.92-1.80 (m, 1 H), 1.76 (bs, 1 H), 1.54 (d, $J = 12.0$ Hz, 1 H), 1.64-1.46 (m, 5 H), 1.36-1.20 (m, 1 H), 1.04-0.97 (m, 21 H); ^{13}C NMR (75 MHz, CDCl_3) δ 204.9, 161.5, 149.8, 140.4, 128.0, 127.7, 126.5, 63.4, 63.3, 57.4, 47.1, 42.2, 30.5, 22.8, 18.2, 17.5, 11.6, 11.3; IR (film) 2942, 2866, 1694, 1620, 1462 cm^{-1} ; EIMS m/z (%) 336 (100), 337 (34), 91 (40), 277 (18); HREIMS calcd for $\text{C}_{27}\text{H}_{43}\text{NO}_2\text{Si}$ 441.3063, found 453.3036.

Isolated as a white solid (174 mg, 64% yield): mp 45-46 °C, R_f = 0.29 (9% EtOAc in hexanes). ^1H NMR (300 MHz, CDCl_3) δ 7.39-7.31 (m, 3 H), 7.30-7.22 (m, 2 H), 3.99 (s, 3 H), 2.86-2.65 (m, 5 H), 2.38 (d, J = 12.0 Hz, 1 H), 2.06-1.92 (m, 1 H), 1.88 (bs, 1 H), 1.76-1.54 (m, 6 H), 1.30-1.48 (m, 2 H), 1.07-1.18 (m, 21 H); ^{13}C NMR (75 MHz, CDCl_3) δ 204.6, 161.7, 149.9, 139.5, 128.3, 128.1, 125.8, 62.8, 57.4, 44.1, 42.7, 36.7, 30.0, 22.8, 18.3, 17.8, 17.2, 11.7, 11.4; IR (neat) 2942, 2866, 1694, 1618, 1446 cm^{-1} ; EIMS m/z (%) 337 (27), 364 (67), 336 (100); HREIMS calcd for $\text{C}_{28}\text{H}_{45}\text{NO}_2\text{Si}$ 453.3220, found 453.3185.