



Supporting Information

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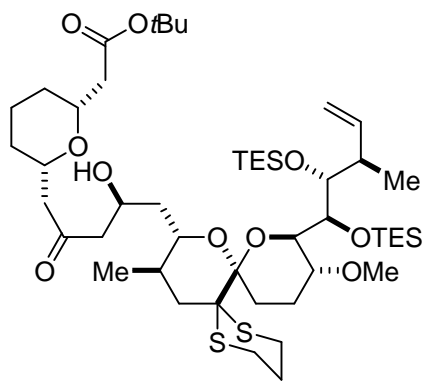
Toward the Total Synthesis of Spirastrellolide A, Part 1: Strategic Considerations and Preparation of the Southern Domain

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Cédricx Godbout, and Karin Radkowski

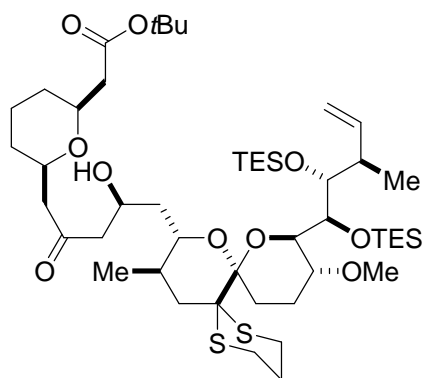
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General: All reactions were carried out under Ar in flame-dried glassware. IR: Nicolet FT-7199 spectrometer, wavenumbers ($\tilde{\nu}$) in cm^{-1} . MS (EI): Finnigan MAT 8200 (70 eV), ESI-MS: Finnigan MAT 95, accurate mass determinations: Bruker APEX III FT-MS (7 T magnet). NMR: Spectra were recorded on a Bruker AMX 300, AV 400, or DMX 600 spectrometer in the solvents indicated; chemical shifts (δ) are given in ppm, coupling constants (J) in Hz. The solvent signals were used as references (CD_2Cl_2 : $\delta_{\text{C}} \equiv 53.8$ ppm; residual CH_2Cl_2 in CD_2Cl_2 : $\delta_{\text{H}} \equiv 5.32$ ppm; C_6D_6 : $\delta_{\text{C}} \equiv 128.0$ ppm; residual C_6H_6 in C_6D_6 : $\delta_{\text{H}} \equiv 7.15$ ppm). **Where indicated, the signal assignments are unambiguous**; the numbering scheme is arbitrary and is shown in the inserts. The assignments are based upon 1D and 2D spectra recorded using the following pulse sequences from the Bruker standard pulse program library: DEPT; COSY (*cosygs* and *cosyqtp*); HSQC (*invietgss*) optimized for $^1J(\text{C,H}) = 145$ Hz; HMBC (*inv4gslplrnd*) for correlations via $^nJ(\text{C,H})$; HSQC-TOCSY (*invietgsmf*) using an MLEV17 mixing time of 120 ms.

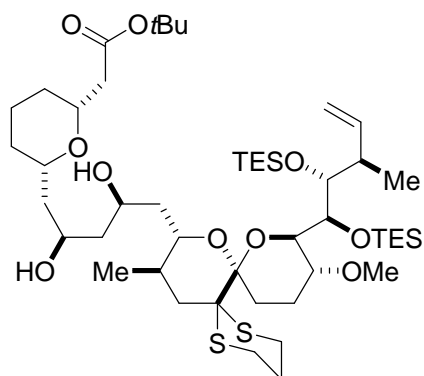
Compound 30. $[\alpha]_D^{20} = -3.5^\circ$ (c 1.4, CH₂Cl₂). IR (neat): 3526, 3068, 2959, 2875, 1731, 1638, 1416, 1239, 1164, 1005, 738 cm⁻¹. ¹H NMR (400 MHz, C₆D₆): δ 6.56 (ddd, *J* = 7.4, 10.3, 17.6 Hz, 1H), 5.38 (d, *J* = 17.4 Hz, 1H), 5.18 (d, *J* = 10.4 Hz, 1H), 4.61-4.53 (m, 1H), 4.45 (s, 1H), 4.06 (s, 1H), 3.99-3.94 (m, 2H), 3.71-3.64 (m, 1H), 3.62-3.54 (m, 1H), 3.47 (p, *J* = 6.9 Hz, 1H), 3.40-3.32 (m, 1H), 3.08 (s, 3H), 2.67-2.08 (m, 14H), 1.98-1.72 (m, 4H), 1.58-1.06 (m, 7H), 1.44 (s, 9H), 1.40 (d, *J* = 7.2 Hz, 3H), 1.22 (t, *J* = 7.9 Hz, 9H), 1.11 (t, *J* = 7.8 Hz, 9H), 1.00-0.72 (m, 17H). ¹³C NMR (100 MHz, C₆D₆): δ 209.0, 170.0, 143.3, 112.8, 100.2, 81.0, 79.9, 76.6, 75.9, 74.7, 73.9, 73.5, 71.5, 63.8, 58.4, 54.3, 50.3, 50.2, 43.0, 40.6, 39.9, 39.8, 32.5, 31.2, 30.9, 29.2, 28.3, 26.0, 25.4, 25.3, 23.6, 23.4, 21.3, 17.1, 7.7, 7.4, 5.9, 5.6. HRMS (ESI⁺): Calcd for C₄₈H₈₈O₁₀S₂Si₂Na (M+Na)⁺: 967.5250. Found: 967.5235.



Compound 29. $[\alpha]_D^{20} = -18.5^\circ$ (c 1.44, CH₂Cl₂). IR (neat): 3524, 2935, 2875, 1731, 1457, 1415, 1368, 1238, 1160, 1067, 1003 cm⁻¹. ¹H NMR (400 MHz, C₆D₆): δ 6.57 (ddd, *J* = 7.4, 10.4, 17.5 Hz, 1H), 5.40 (dd, *J* = 1.6, 17.5 Hz, 1H), 5.19 (dd, *J* = 1.6, 10.4 Hz, 1H), 4.59-4.55 (m, 1H), 4.46 (s, 1H), 4.07 (s, 1H), 3.99 (dd, *J* = 1.7, 9.1 Hz, 1H), 3.94 (dd, *J* = 1.7, 10.3 Hz, 1H), 3.72-3.65 (m, 2H), 3.63-3.57 (m, 1H), 3.49 (t, *J* = 7.0 Hz, 1H), 3.38 (dt, *J* = 4.6, 10.6 Hz, 1H), 3.08 (s, 3H), 2.66-2.57 (m, 1H), 2.53-2.28 (m, 8H), 2.20 (td, *J* = 3.9, 14.4 Hz, 2H), 2.12 (dd, *J* = 5.2, 15.1 Hz, 2H), 1.96 (dd, *J* = 4.6, 15.1 Hz, 2H), 1.85-1.76 (m, 2H), 1.54-1.10 (m, 10H), 1.43 (s, 9H), 1.41 (d, *J* = 5.8 Hz, 3H), 1.24 (t, *J* = 7.9 Hz, 9H), 1.14 (t, *J* = 7.9 Hz, 9H), 0.97 (d, *J* = 6.6 Hz, 3H), 1.01-0.89 (m, 6H), 0.87-0.76 (m, 6H). ¹³C NMR (100 MHz, C₆D₆): δ 209.9, 170.1, 143.4, 112.8, 100.2, 81.0, 79.9, 76.7, 75.9, 74.7, 74.0, 73.4, 71.7, 64.0, 58.4, 54.3, 50.4, , 50.3, 42.9, 40.6, 39.9, 39.9, 32.5, 31.2, 30.9, 29.2, 28.2, 26.0, 25.4, 25.3, 23.6, 23.4, 21.3, 17.1, 7.7, 7.4, 6.0, 5.7. HRMS (ESI⁺): Calcd for C₄₈H₈₈O₁₀S₂Si₂Na (M+Na)⁺: 967.5250. Found: 967.5250.

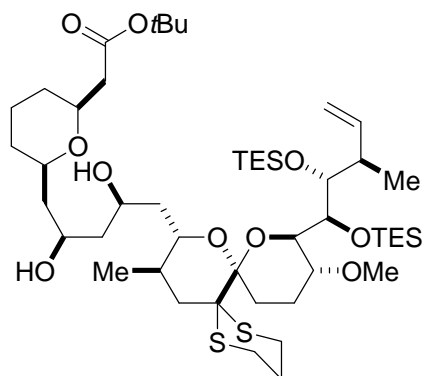


Compound 31. $[\alpha]_D^{20} = -21.3^\circ$ (c 1.80, CH₂Cl₂). IR (neat): 3480, 3067, 2948, 2875, 1731, 1637,



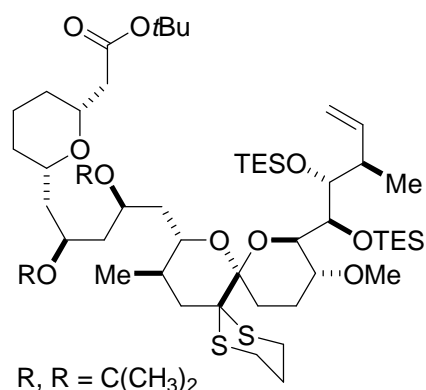
1417, 1368, 1239, 1160, 1111, 1007, 738 cm⁻¹. ¹H NMR (400 MHz, C₆D₆): δ 6.61 (ddd, $J = 7.4, 10.4, 17.6$ Hz, 1H), 5.42 (dd, $J = 1.6, 17.4$ Hz, 1H), 5.19 (dd, $J = 2.3, 10.4$ Hz, 1H), 4.57-4.51 (m, 1H), 4.47 (s, 1H), 4.21 (s, 1H), 4.20-4.16 (m, 1H), 4.16-4.08 (m, 2H), 4.08-4.02 (m, 1H), 3.61-3.52 (m, 2H), 3.39 (dd, $J = 4.7, 10.5$ Hz, 1H), 3.11 (s, 3H), 2.69-2.59 (m, 1H), 2.54-2.28 (m, 6H), 2.24-2.08 (m, 4H), 2.02-1.84 (m, 4H), 1.66-1.32 (m, 9H), 1.45 (s, 9H), 1.30-0.76 (m, 19H), 1.25 (t, $J = 7.9$ Hz, 9H), 1.14 (t, $J = 7.9$

Hz, 9H). ¹³C NMR (100 MHz, C₆D₆): δ 170.2, 143.5, 112.7, 100.2, 80.9, 80.5, 79.7, 76.6, 75.6, 74.8, 73.4, 71.9, 71.0, 64.9, 58.4, 54.2, 43.4, 42.7, 42.6, 41.0, 40.7, 39.8, 32.7, 31.7, 30.9, 29.3, 28.1, 26.1, 25.5, 25.4, 23.7, 23.2, 21.6, 17.2, 7.7, 7.5, 6.0, 5.6. HRMS (ESI⁺): Calcd for C₄₈H₉₀O₁₀S₂Si₂Na (M+Na)⁺: 969.5406. Found: 969.5399.

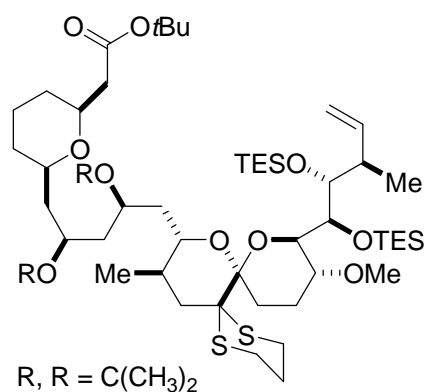


¹H NMR (600 MHz, C₆D₆): δ 6.59 (ddd, $J = 7.4, 10.4, 17.5$ Hz, 1H), 5.41 (ddd, $J = 1.1, 2.4, 17.5$ Hz, 1H), 5.20 (dd, $J = 2.4, 10.4$ Hz, 1H), 4.55-4.53 (m, 1H), 4.46 ($J = 1.5$ Hz, 1H), 4.33-4.30 (m, 1H), 4.13-4.10 (m, 1H), 4.02 (dd, $J = 1.8, 9.2$ Hz, 1H), 3.99 (td, $J = 2.1, 10.1$ Hz, 1H), 3.63 (ddd, $J = 3.7, 11.9, 14.2$ Hz, 1H), 3.57 (tdt, $J = 1.8, 4.2, 9.1$ Hz, 1H), 3.53-3.51 (m, 1H), 3.42 (tt, $J = 4.0, 8.7$ Hz, 1H), 3.38 (ddd, $J = 4.6, 9.2, 10.8$ Hz, 1H), 3.09 (s,

3H), 2.53-2.48 (m, 4H), 2.41 (ddd, $J = 3.9, 9.9, 14.3$ Hz, 1H), 2.31 (dt, $J = 4.9, 14.0$ Hz, 1H), 2.27 (dd, $J = 8.9, 15.2$ Hz, 1H), 2.21 (dt, $J = 4.7, 14.2$ Hz, 1H), 2.22-2.18 (m, 1H), 2.05 (dd, $J = 4.2, 15.2$ Hz, 1H), 1.95 (dq, $J = 4.6, 12.1$ Hz, 1H), 1.93 (ddd, $J = 2.1, 10.7, 13.4$ Hz, 1H), 1.84 (tdd, $J = 5.2, 11.0, 12.2$ Hz, 1H), 1.62 (ddd, $J = 3.2, 8.4, 14.2$ Hz, 1H), 1.57 (ddd, $J = 3.8, 9.1, 14.3$ Hz, 1H), 1.55-1.50 (m, 2H), 1.46 (s, 9H), 1.49-1.38 (m, 3H), 1.44 (d, $J = 7.2$ Hz, 3H), 1.37 (ddd, $J = 3.0, 8.1, 14.2$ Hz, 1H), 1.25 (t, $J = 8.0$ Hz, 9H), 1.19-0.93 (m, 5H), 1.15 (t, $J = 7.9$ Hz, 9H), 0.99 (dq, $J = 7.8, 14.8$ Hz, 6H), 0.96 (d, $J = 6.7$ Hz, 3H), 0.86 (dq, $J = 7.8, 15.0$ Hz, 6H). ¹³C NMR (150 MHz, C₆D₆): δ 170.5, 143.4, 112.8, 100.3, 80.9, 80.2, 76.7, 75.8, 75.6, 74.8, 73.5, 72.3, 66.5, 65.3, 58.4, 54.2, 43.4, 42.5, 42.4, 40.7, 40.4, 39.4, 32.4, 31.0, 30.8, 29.3, 28.2, 26.0, 25.4, 25.3, 23.6, 23.6, 21.4, 17.2, 7.7, 7.5, 6.0, 5.7.

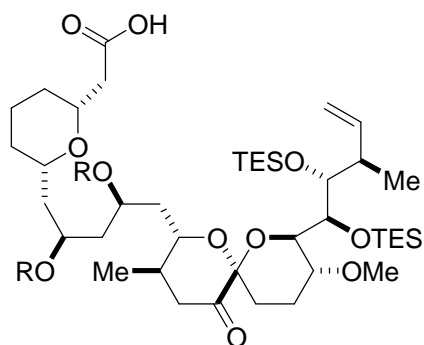


$[\alpha]_D^{20} = -11.6^\circ$ (*c* 1.54, CH₂Cl₂). IR (neat): 3068, 2949, 2876, 1733, 1638, 1368, 1164, 1113, 1008, 740 cm⁻¹. ¹H NMR (400 MHz, C₆D₆): δ 6.60 (ddd, *J* = 6.9, 10.3, 17.4 Hz, 1H), 5.32 (d, *J* = 17.4 Hz, 1H), 5.17 (d, *J* = 10.3 Hz, 1H), 4.45-4.38 (m, 1H), 4.39 (s, 1H), 4.19 (p, *J* = 7.0 Hz, 1H), 3.81 (s, 1H), 3.78-3.68 (m, 3H), 3.50-3.34 (m, 2H), 3.26 (dt, *J* = 4.6, 10.6 Hz, 1H), 3.01 (s, 3H), 2.65-2.57 (m, 1H), 2.49-2.33 (m, 6H), 2.31-2.11 (m, 3H), 2.09-1.87 (m, 4H), 1.64-0.65 (m, 28H), 1.62 (s, 3H), 1.48 (s, 3H), 1.44 (s, 9H), 1.35 (d, *J* = 7.1 Hz, 3H), 1.21 (t, *J* = 7.9 Hz, 9H), 1.08 (t, *J* = 8.0 Hz, 9H). ¹³C NMR (100 MHz, C₆D₆): δ 170.3, 143.0, 112.9, 100.2, 100.0, 81.4, 79.7, 76.3, 75.4, 74.8, 74.3, 73.8, 71.5, 63.4, 62.8, 58.3, 54.4, 43.1, 42.1, 39.5, 39.3, 39.2, 33.3, 31.6, 31.4, 29.1, 28.3, 27.1, 26.4, 25.9, 25.9, 25.5, 25.4, 23.8, 23.2, 20.9, 17.4, 7.8, 7.4, 6.0, 5.8. HRMS (ESI⁺): Calcd for C₅₁H₉₄O₁₀S₂Si₂Na (M+Na)⁺: 1009.5719. Found: 1009.5710.



$[\alpha]_D^{20} = -18.8^\circ$ (*c* 1.61, CH₂Cl₂). IR (neat): 2928, 2875, 1734, 1457, 1367, 1162, 1098, 1008 cm⁻¹. ¹H NMR (400 MHz, C₆D₆): δ 6.64 (ddd, *J* = 6.9, 10.5, 17.4 Hz, 1H), 5.36 (dd, *J* = 1.6, 17.4 Hz, 1H), 5.20 (dd, *J* = 1.6, 10.5 Hz, 1H), 4.46-4.39 (m, 2H), 4.33-4.26 (m, 1H), 3.89-3.82 (m, 2H), 3.76 (dd, *J* = 0.9, 9.3 Hz, 1H), 3.72 (dd, *J* = 1.5, 10.4 Hz, 1H), 3.63 (td, *J* = 5.9, 10.9 Hz, 1H), 3.48 (q, *J* = 6.4 Hz, 1H), 3.28 (dt, *J* = 4.7, 10.9 Hz, 1H), 3.01 (s, 3H), 2.61 (ddd, *J* = 3.6, 11.8, 14.4 Hz, 1H), 2.52 (dd, *J* = 7.9, 15.1 Hz, 1H), 2.50-2.35 (m, 5H), 2.27 (td, *J* = 4.4 Hz, 2H), 2.20 (dd, *J* = 5.1, 15.1 Hz, 1H), 2.10-1.88 (m, 3H), 1.82-1.74 (m, 1H), 1.66 (s, 6H), 1.62-1.50 (m, 6H), 1.46-1.28 (m, 7H), 1.42 (s, 9H), 1.39 (d, *J* = 7.1 Hz, 3H), 1.24 (t, *J* = 7.9 Hz, 9H), 1.11 (t, *J* = 7.9 Hz, 9H), 1.01-0.89 (m, 6H), 0.93 (d, *J* = 6.6 Hz, 3H), 0.87-0.75 (m, 6H). ¹³C NMR (100 MHz, C₆D₆): δ 170.3, 143.0, 112.9, 100.4, 100.0, 81.4, 79.6, 76.3, 75.4, 74.5, 74.4, 73.7, 71.6, 63.1, 63.0, 58.3, 54.4, 43.4, 43.2, 42.2, 40.0, 39.5, 39.4, 33.3, 32.1, 31.5, 30.2, 29.0, 28.2, 26.5, 26.1, 25.9, 25.4, 23.9, 23.2, 20.9, 17.4, 7.8, 7.4, 6.0, 5.8. HRMS (ESI⁺): Calcd for C₅₁H₉₄O₁₀S₂Si₂Na (M+Na)⁺: 1009.5719. Found: 1009.5703.

Compound 32. IR (neat): 3071, 2952, 2876, 1739, 1713, 1638, 1416, 1225, 1112, 1009, 740

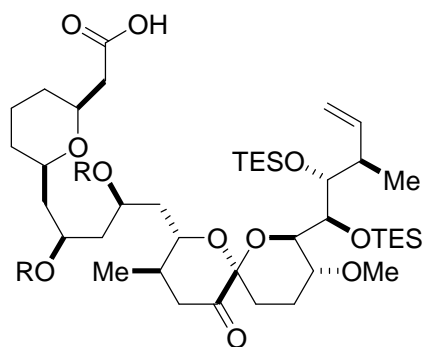


cm^{-1} . $^1\text{H NMR}$ (400 MHz, C_6D_6): δ 6.46 (ddd, $J = 6.8, 10.5, 17.4$ Hz, 1H), 5.17 (d, $J = 17.4$ Hz, 1H), 5.13 (d, $J = 10.5$ Hz, 1H), 4.42-4.34 (m, 1H), 4.31 (t, $J = 2.0$ Hz, 1H), 4.10-4.00 (m, 2H), 3.87 (dd, $J = 2.4, 9.3$ Hz, 1H), 3.80 (dd, $J = 1.6, 3.4$ Hz, 1H), 3.49-3.37 (m, 2H) 3.19-3.10 (m, 2H), 2.99 (s, 3H), 2.87 (t, $J = 13.3$ Hz, 1H), 2.34 (dd, $J = 8.7, 15.5$ Hz, 1H), 2.25 (dd, $J = 4.5, 13.4$ Hz, 1H), 2.22-2.12 (m, 2H), 2.00-1.82 (m, 5H), 1.79-1.64 (m, 2H), 1.63 (s, 6H), 1.47-1.22 (m, 6H), 1.14-1.05 (m, 21H),

R, R = $\text{C}(\text{CH}_3)_2$

1.01-0.73 (m, 17H). $^{13}\text{C NMR}$ (75 MHz, C_6D_6): δ 201.8, 172.8, 142.9, 112.9, 100.5, 97.0, 80.8, 76.3, 75.4, 74.7, 74.2, 74.2, 71.6, 64.1, 63.6, 54.7, 43.2, 42.6, 41.7, 41.4, 41.2, 39.8, 39.5, 31.4, 31.0, 26.9, 26.3, 25.6, 23.5, 22.6, 19.9, 18.1, 7.4, 7.4, 5.9, 5.8. HRMS (ESI⁺): Calcd for $\text{C}_{44}\text{H}_{80}\text{O}_{10}\text{Si}_2\text{Na}$ ($\text{M}+\text{Na}$)⁺: 863.5131. Found: 863.5136.

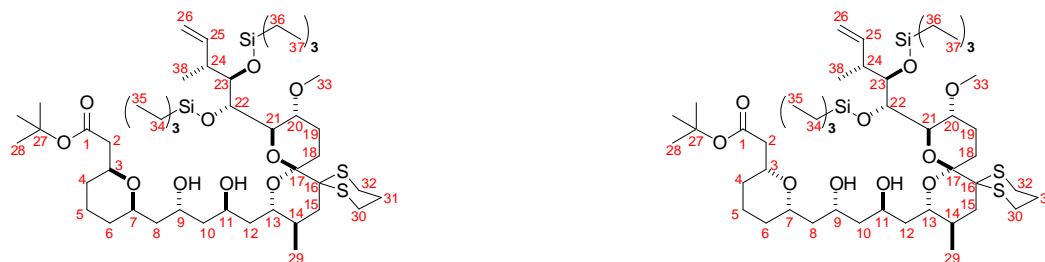
Compound 33. IR (neat): 2924, 2875, 1739, 1714, 1457, 1378, 1224, 1195, 1175, 1006, 723



cm^{-1} . $^1\text{H NMR}$ (400 MHz, C_6D_6): δ 6.47 (ddd, $J = 6.8, 10.5, 17.5$ Hz, 1H), 5.18 (d, $J = 17.5$ Hz, 1H), 5.14 (d, $J = 10.5$ Hz, 1H), 4.38-4.33 (m, 1H), 4.32 (t, $J = 1.9$ Hz, 1H), 4.28-4.21 (m, 1H), 4.04 (dt, $J = 1.6, 10.2$ Hz, 1H), 3.87 (dd, $J = 2.1, 9.2$ Hz, 1H), 3.81 (dd, $J = 1.5, 3.3$ Hz, 1H), 3.67-3.54 (m, 2H), 3.20-3.16 (m, 1H), 3.13 (dt, $J = 4.2, 9.8$ Hz, 1H), 2.98 (s, 3H), 2.87 (t, $J = 13.3$ Hz, 1H), 2.41 (dd, $J = 8.5, 15.5$ Hz, 1H), 2.24 (dd, $J = 4.5, 13.4$ Hz, 1H), 2.20-2.10 (m, 2H), 1.92 (ddd, $J = 1.9, 8.8, 14.2$ Hz,

R, R = $\text{C}(\text{CH}_3)_2$

1H), 1.86-1.77 (m, 2H), 1.63 (s, 6H), 1.57-1.43 (m, 6H), 1.39-1.17 (m, 7H), 1.16 (d, $J = 8.0$ Hz, 3H), 1.10 (q, $J = 7.8$ Hz, 18H), 0.84-0.73 (m, 15H). $^{13}\text{C NMR}$ (100 MHz, C_6D_6): δ 201.9, 170.6, 142.9, 112.9, 100.5, 96.9, 80.8, 76.4, 74.7, 74.6, 74.2, 74.1, 71.5, 63.7, 63.0, 54.6, 43.3, 43.2, 41.6, 41.4, 41.3, 40.2, 39.8, 32.3, 31.9, 31.2, 30.2, 27.0, 26.4, 26.1, 25.9, 25.6, 7.41, 7.39, 5.9, 5.8. HRMS (ESI⁺): Calcd for $\text{C}_{44}\text{H}_{80}\text{O}_{11}\text{Si}_2\text{Na}$ ($\text{M}+\text{Na}$)⁺: 863.5131. Found: 863.5124.

Table 1. Spectroscopic Assignment for Diols Derived from **29** and **30**.

#C	¹³ C NMR ^a	¹ H NMR ^b	¹³ C NMR ^a	¹ H NMR ^b
	δ (ppm) (mult)	δ (ppm) [mult, J (Hz)]	δ (ppm) (mult)	δ (ppm) [mult, J (Hz)]
1	170.5 (s)		170.2 (s)	
2	42.5 (t)	2.27 (dd, 8.9, 15.2) 2.05 (dd, 4.2, 15.2)	42.6 (t)	2.19 (dd, 9.1, 15.1) 2.00 (dd, 3.6, 15.1)
3	74.8 (d)	3.57 (tdt, 1.8, 4.2, 9.1)	74.9 (d)	3.58 (m)
4	30.8 (t)	1.17 (m) 0.94 (m)	30.8 (t)	1.11 (m) 0.88 (m)
5	23.6 (t)	1.47 (m) 1.16 (m)	23.2 (t)	1.40 (m) 1.10 (m)
6	31.0 (t)	1.08 (m)	31.7 (t)	1.03 (m)
7	75.6 (d)	3.42 (tt, 4.0, 8.7)	79.8 (d)	3.13 (ddt, 2.2)
8	42.4 (t)	1.57 (ddd, 3.8, 9.1, 14.3) 1.37 (ddd, 3.0, 8.1, 14.2)	42.6 (t)	1.63 (dt, 10.3, 14.4) 1.04 (m)
9	66.5 (d)	4.32 (~t)	71.3 (d)	4.11 (m)
10	43.4 (t)	1.62 (ddd, 3.2, 8.4, 14.2) 1.47 (m)	43.0 (t)	1.54 (m)
11	65.3 (d)	4.54 (~t)	65.3 (d)	4.52 (m)
12	40.4 (t)	1.93 (ddd, 2.1, 10.7, 13.4) 1.53 (m)	40.7 (t)	1.97 (m) 1.54 (m)
13	72.3 (d)	3.99 (td, 2.1, 10.1)	71.9 (d)	4.04 (td, 1.7, 10.4)
14	32.4 (d)	2.20 (m)	32.6 (d)	2.21 (m)
15	40.7 (t)	2.49 (m)	40.9 (t)	2.51 (m)
16	58.4 (s)		58.5 (s)	
17	100.3 (s)		100.2 (s)	
18	29.3 (t)	2.51 (m)	29.4 (t)	2.54 (m)
19	23.6 (t)	1.95 (dq, 4.6, 12.1)	23.7 (t)	1.97 (m)

		1.84 (tdd, 5.2, 11.0, 12.2)		1.88 (~dddd)
20	73.5 (d)	3.38 (ddd, 4.6, 9.2, 10.8)	73.3 (d)	3.42 (ddd, 4.6, 9.4, 10.9)
21	75.8 (d)	4.02 (dd, 1.8, 9.2)	75.8 (d)	4.08 (dd, 1.5, 9.4)
22	76.7 (d)	4.46 (t, 1.5)	76.7 (d)	4.50 (t, 1.3)
23	80.9 (d)	4.11 (~dd)	80.9 (d)	4.18 (~dd)
24	39.4 (d)	3.51 (m)	39.9 (d)	3.57 (m)
25	143.4 (d)	6.59 (ddd, 7.4, 10.4, 17.5)	143.5 (d)	6.63 (ddd, 7.4, 10.4, 17.5)
26	112.8 (t)	5.41 (ddd, 1.1, 2.4, 17.5) 5.20 (dd, 2.4, 10.4)	112.7 (t)	5.43 (ddd, 1.1, 2.4, 17.5) 5.21 (dd, 2.4, 10.4)
27	80.2 (s)		80.5 (s)	
28	28.2 (q)	1.46 (s)	28.1 (q)	1.47 (s)
29	17.2 (q)	0.96 (d, 6.7)	17.2 (q)	1.00 (d, 6.7)
30	25.3 (t)	3.63 (ddd, 3.7, 11.9, 14.2) 2.21 (dt, 4.7, 14.2)	25.3 (t)	3.65 (ddd, 3.7, 12.0, 14.4) 2.22 (dt, 4.2, 13.6)
31	25.4 (t)	1.52 (m) 1.39 (m)	25.4 (t)	1.53 (m) 1.39 (m)
32	26.0 (t)	2.41 (ddd, 3.9, 9.9, 14.3) 2.31 (dt, 4.9, 14.0)	26.0 (t)	2.42 (ddd, 3.9, 10.0, 14.3) 2.31 (dt, 4.7, 14.5)
33	54.2 (q)	3.09 (s)	54.0 (q)	3.12 (s)
34	5.7 (t)	0.86 (dq, 7.9, 15.0) 0.81 (dq, 8.0, 14.9)	5.6 (t)	0.87 (dq, 8.0, 15.0) 0.81 (dq, 8.0, 15.0)
35	7.5 (q)	1.15 (t, 7.9)	7.5 (q)	1.15 (t, 7.9)
36	6.0 (t)	0.99 (dq, 7.8, 14.8) 0.94 (dq, 8.0, 14.8)	6.0 (t)	1.00 (dq, 7.9, 14.8) 0.95 (dq, 8.1, 14.8)
37	7.7 (q)	1.25 (t, 8.0)	7.7 (q)	1.26 (t, 8.0)
38	21.4 (q)	1.44 (d, 7.2)	21.5 (q)	1.47 (d, 7.2)

a) 150 MHz spectrum recorded in C₆D₆. The multiplicity was determined by DEPT 90 and DEPT 135. b) 600 MHz spectrum recorded in C₆D₆.