

SUPPLEMENTARY MATERIAL TO

A study towards the synthesis of (–)-atrop-abysomicin C core

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J. Serb. Chem. Soc. 86 (12) (2021) 1305–1315

Physical data for **7**:

$[\alpha]_D^{23}$ -33.5 (c 1.11, CHCl₃). ¹H NMR (500 MHz, CDCl₃) δ 6.86 (dd, J = 15.5, 7.9 Hz, 1H), 5.76 (d, J = 15.6 Hz, 1H), 5.06 (t, J = 7 Hz, 1H), 4.18 (q, J = 7.3 Hz, 2H), 2.36-2.25 (m, 1H), 1.95 (dd, J = 15, 7.3, 2H), 1.67 (s, 3H), 1.57 (s, 3H), 1.30-1.47 (m, 2H), 1.27 (t, J = 7.3 Hz, 3H), 1.03 (d, J = 6.7 Hz, 3H). ¹³C NMR (75 MHz, CDCl₃) δ 166.9, 154.5, 131.9, 124.0, 119.7, 60.2, 36.1, 25.7, 19.4, 17.7, 14.3. IR (ATR) ν_{\max} : 2964, 2914, 1716, 1650, 1454, 1367, 1347, 1299, 1264. HRMS (ESI) Calcd. for C₁₃H₂₂O₂Na⁺ [M+Na]⁺: 233.1517, found: 233.1531.

Physical data for **12**:

¹H NMR (500 MHz, CDCl₃) δ 6.84 (dd, J = 15.6, 7.9 Hz, 1H), 5.78 (d, J = 15.8 Hz, 1H), 4.33 (t, J = 5.6 Hz, 1H), 4.18 (q, J = 7.1 Hz, 2H), 3.30 (s, 3H), 3.31 (s, 3H), 2.36-2.25 (m, 1H), 1.61-1.55 (m, 2H), 1.46-1.40 (m, 2H), 1.29 (t, J = 7.1 Hz, 3H), 1.06 (d, J = 6.7 Hz, 3H). ¹³C NMR (75 MHz, CDCl₃) δ 166.9, 153.9, 120.2, 104.5, 60.3, 53.9, 52.8, 36.4, 30.8, 30.3, 19.5, 14.3. IR (ATR) ν_{\max} : 2955, 2830, 1715, 1651, 1455, 1367, 1301, 1264. HRMS (ESI) Calcd. for C₁₂H₂₂O₄Na⁺ [M+Na]⁺: 253.1416, found: 253.1439.

Physical data for **13** (in the NMR spectra, *min* stands for the minor, and *maj* - for the major diastereoisomer):

¹H NMR (500 MHz, CDCl₃) δ 4.36 (t, J = 5.1 Hz, 1H *maj*), 4.37-4.32 (m, 1H *min*), 4.30-4.24 (m, 2H+2H*), 3.62-3.53 (m, 1H *min*), 3.56 (t, J = 8.8 Hz, 1H *maj*), 3.31 (s, 12H), 3.17-3.12 (m, 2H), 2.23 (d, J = 9.4 Hz, 1H *maj*), 2.17 (d, J = 9.1 Hz, 1H *min*), 1.82-1.65 (m, 6H), 1.62-1.49 (m, 2H), 1.30 (t, J = 7.2 Hz, 6H), 1.33-1.19 (m, 2H), 1.02 (d, J = 6.7 Hz, 3H *min*), 0.95 (d, J = 6.6 Hz, 3H *maj*). ¹³C NMR (125 MHz, CDCl₃) δ 174.3, 174.1, 105.0, 104.9, 76.5, 76.2, 71.5, 71.3, 62.2, 53.0, 53.0, 52.9, 52.8, 36.1, 35.8, 30.0, 29.7, 28.0, 27.6, 27.6, 15.9, 15.3, 14.3. IR (ATR) ν_{\max} : 3452, 2936, 2831, 1732, 1453, 1384, 1267, 1216. HRMS (ESI) Calcd. for C₁₂H₂₄O₆Na⁺ [M+Na]⁺: 287.1471, found: 287.1468.

Physical data for **14**:

¹H NMR (300 MHz, CDCl₃) δ 4.70-4.66 (m, 1H), 4.40-4.10 (m, 7H), 3.74 (dd, J = 10.4, 1.7 Hz, 1H), 3.40 (dd, J = 9.7, 1.9 Hz, 1H), 3.36 (s, 3H), 3.25 (m, 3H), 2.93 (d, J = 9.1 Hz, 1H), 2.85 (d, J = 8.2 Hz, 1H), 1.97-1.65 (m, 6H), 1.61-1.39 (m, 3H), 1.34-1.22 (m, 1H), 1.31 (td, J = 7.1, 1.9 Hz, 6H), 0.94 (d, J = 6.5 Hz, 3H), 0.92 (d, J = 6.3 Hz, 3H). ¹³C NMR

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(75 MHz, CDCl₃) δ 173.7, 173.2, 103.7, 98.6, 82.2, 75.6, 70.9, 70.6, 61.8, 61.6, 56.0, 54.4, 31.4, 31.0, 31.1, 31.1, 29.9, 26.5, 17.5, 16.6, 14.5, 14.3. **IR** (ATR) ν_{\max} : 3482, 2931, 1738, 1460, 1370, 1378, 1270. **HRMS** (ESI) Calcd. for C₁₁H₂₀O₅Na⁺ [M+Na]⁺: 255.1208, found: 255.1195.

Physical data for **5**:

¹H NMR (500 MHz, CDCl₃) δ 5.72 (s, 1H *min*), 5.68 (s, 1H *maj*), 4.48 (s, 1H *maj*), 4.47 (s, 1H *min*), 4.38 (s, 1H *maj*), 4.46 (d, $J = 2.7$ Hz, 1H *min*), 4.25-4.18 (m, 2H *min*), 4.22 (q, $J = 7.1$ Hz, 2H *maj*), 2.12-2.03 (m, 1H *min*), 2.03-1.94 (m, 2H), 1.80 (dd, $J = 13.7, 5.9$ Hz, 1H *min*), 1.77-1.58 (m, 4H), 1.50 (dd, $J = 13.7, 6.1$ Hz, 1H *min*), 1.35-1.22 (m, 3H), 1.18 (d, $J = 7.0$ Hz, 3H *min*), 0.92 (d, $J = 6.8$ Hz, 3H *maj*). ¹³C NMR (125 MHz, CDCl₃) δ 171.5, 171.3, 104.0, 103.1, 82.2, 82.2, 72.9, 61.4, 32.4, 31.9, 30.5, 26.9, 24.5, 21.8, 17.1, 17.0, 14.2. **IR** (ATR) ν_{\max} : 2958, 2360, 1758, 1726, 1462, 1370, 1343, 1286. **HRMS** (ESI) Calcd. for C₁₀H₁₆O₄Na⁺ [M+Na]⁺: 223.0946, found: 223.0941.

Physical data for **15**:

¹H NMR (500 MHz, CDCl₃) δ 5.55 (s, 1H *min*), 5.51 (s, 1H *maj*), 4.18-4.14 (m, 2H), 4.00 (s, 1H *maj*), 3.97 (s, 1H *min*), 3.61-3.51 (m, 4H), 2.08-1.97 (m, 1H *maj*), 1.95 (s, 2H), 1.80 (dd, $J = 13.7, 5.9$ Hz, 1H *maj*), 1.77-1.59 (m, 3H), 1.50 (dd, $J = 13.7, 6.1$ Hz, 1H *maj*), 1.46-1.36 (m, 1H *min*), 1.35-1.22 (m, 3H), 1.17 (d, $J = 7.1$ Hz, 3H *maj*), 0.85 (d, $J = 7.0$ Hz, 3H *min*). ¹³C NMR (125 MHz, CDCl₃) δ 101.8, 101.4, 78.9, 79.1, 76.1, 64.3, 31.4, 31.0, 29.5, 27.2, 24.5, 22.1, 16.8, 16.7.

Physical data for **17**:

¹H NMR (500 MHz, CDCl₃) δ 6.92-6.84 (m, 1H), 6.10-6.07 (m, 1H), 6.07-6.04 (m, 1H), 5.67-5.64 (m, 1H), 5.64-5.61 (m, 1H), 4.66-4.61 (m, 1H), 4.25-4.18 (m, 2H), 4.02-3.99 (m, 1H), 2.13-2.02 (m, 2H), 1.87-1.77 (m, 3H), 1.72-1.64 (m, 2H), 1.60-1.53 (m, 1H), 1.51-1.41 (m, 1H), 1.39-1.32 (m, 1H), 1.33-1.28 (m, 6H), 1.19 (d, $J = 7.1$ Hz, 3H), 0.91 (d, $J = 7.0$ Hz, 3H).

Physical data for **18**:

¹H NMR (300 MHz, CDCl₃) δ 4.75-4.72 (m, 1H *min*), 4.41-4.39 (m, 2H), 4.30-4.10 (m, 5H), 3.77 (dd, $J = 10.3, 2.1$ Hz, 1H *min*), 3.40 (dd, $J = 9.8, 2.4$ Hz, 1H *maj*), 3.35 (s, 3H *maj*), 3.24 (s, 3H *min*), 1.95-1.62 (m, 6H), 1.62-1.38 (m, 3H), 1.33-1.23 (m, 7H), 0.96-0.82 (m, 24H), 0.16 (s, 3H *maj*), 0.14 (s, 3H *min*), 0.06 (s, 3H *maj*), 0.04 (s, 3H *min*). ¹³C NMR (75 MHz, CDCl₃) δ 172.9, 172.6, 103.9, 98.4, 83.1, 76.5, 72.9, 72.7, 61.1, 60.8, 55.9, 54.4, 31.3, 31.3, 29.8, 29.7, 29.4, 26.6, 26.1, 18.6, 17.7, 16.8, 14.5, 14.4. **IR** (ATR) ν_{\max} : 2954, 2930, 2853, 2358, 1745, 1471, 1461, 1444, 1371, 1348, 1285. **HRMS** (ESI) Calcd. for C₁₇H₃₄O₅SiNa⁺ [M+Na]⁺: 369.2073, found: 369.2058.

Physical data for **22**:

¹H NMR (500 MHz, CDCl₃) δ 7.45-7.42 (m, 1H *min*), 7.38-7.33 (m, 3H), 7.25-7.18 (m, 4H), 7.15-7.10 (m, 2H), 5.77-5.74 (m, 1H *maj*), 4.67 (dd, $J = 11.5, 1.8$ Hz, 1H *min*), 4.43 (d, $J = 2.0$ Hz, 1H *maj*), 4.38 (d, $J = 2.1$ Hz, 1H *min*), 4.22 (dd, $J = 10.3, 2.0$ Hz, 1H *maj*), 4.14-4.01 (m, 2H *min*), 3.97 (dq, $J = 10.7, 7.1$ Hz, 1H *maj*), 3.73 (dq, $J = 10.7, 7.2$ Hz, 1H *maj*), 3.47 (dd, $J = 9.8, 2.2$ Hz, 1H *maj*), 2.21-2.11 (m, 1H *maj*), 2.01-1.78 (m, 4H), 1.78-1.62 (m, 3H), 1.59-1.48 (m, 1H *maj*), 1.37-1.20 (m, 1H *min*), 1.20-1.15 (t, $J = 7.4$ Hz, 3H *min*), 0.99 (t, $J = 7.1$ Hz, 3H *maj*), 0.97-0.93 (m, 21H), 0.88-0.84 (m, 3H *min*), 0.18 (s, 3H *maj*), 0.16 (s, 3H *min*), 0.06 (s, 3H *maj*), 0.05 (s, 3H *min*). ¹³C NMR (75 MHz, CDCl₃) δ 129.3, 128.6, 125.9, 84.9, 77.3, 72.5, 60.9, 31.2, 30.0, 28.2, 26.0, 13.8, -4.0, -5.6.

Physical data for **23**:

¹H NMR (500 MHz, CDCl₃) δ 5.34-5.31 (m, 1H *maj*), 4.65-4.60 (m, 1H *min*), 4.41 (d, $J = 2.0$ Hz, 1H *maj*), 4.37 (d, $J = 2.4$ Hz, 1H *min*), 4.33-4.23 (m, 2H), 4.22-4.13 (m, 2H), 4.00

(dd, $J = 10.3, 1.9$ Hz, 1H *maj*), 3.49 (dd, $J = 9.8, 2.2$ Hz, 1H *min*), 2.74 (d, $J = 5.9$ Hz, 1H *min*), 2.19 (s, 1H *maj*), 1.90-1.82 (m, 2H *maj*), 1.82-1.74 (m, 2H *min*), 1.74-1.66 (m, 3H), 1.66-1.55 (m, 2H), 1.45-1.12 (m, 7H), 1.00-0.75 (m, 24H), 0.16 (s, 3H *maj*), 0.16 (s, 3H *min*), 0.06 (s, 6H).

Physical data for **25**:

$^1\text{H NMR}$ (300 MHz, CDCl_3) δ 7.50-7.40 (m, 4H), 7.34-7.24 (m, 6H), 4.38 (t, $J = 6.5$ Hz, 1H), 4.28 (d, $J = 2.3$ Hz, 1H), 4.20 (q, $J = 7.1$ Hz, 2H), 3.52-3.42 (m, 1H), 2.18 (d, $J = 9.8$ Hz, 1H), 2.15-1.75 (m, 3H), 1.65-1.41 (m, 2H), 1.28 (t, $J = 7.1$ Hz, 3H), 0.93-0.88 (m, 9H), 0.84 (d, $J = 6.5$ Hz, 3H), 0.13 (s, 3H), 0.05 (s, 3H).

Physical data for **26**:

$^1\text{H NMR}$ (500 MHz, CDCl_3) δ 4.75-4.72 (m, 1H *min*), 4.26 (dd, $J = 9.6, 1.9$ Hz, 1H *maj*), 3.90 (td, $J = 5.1, 2.4$ Hz, 1H *maj*), 3.86 (td, $J = 4.9, 2.0$ Hz, 1H *min*), 3.82-3.70 (m, 4H), 3.48 (dd, $J = 10.3, 1.9$ Hz, 1H *min*), 3.45 (s, 3H *maj*), 3.34 (s, 3H *min*), 3.16 (dd, $J = 9.8, 2.3$ Hz, 1H *min*), 2.44-2.40 (m, 1H *min*), 2.38 (t, $J = 5.8$ Hz, 1H *maj*), 1.86-1.65 (m, 5H), 1.56-1.39 (m, 3H), 1.27-1.16 (m, 2H), 0.94-0.88 (m, 18H), 0.88 (s, $J = 6.5$ Hz, 3H *min*), 0.87 (s, $J = 6.5$ Hz, 3H *maj*), 0.12 (s, 3H *min*), 0.11 (s, 3H *maj*), 0.10 (s, 3H *maj*), 0.09 (s, 3H *min*). $^{13}\text{C NMR}$ (75 MHz, CDCl_3) δ 104.0, 98.4, 83.9, 77.0, 72.4, 72.2, 65.3, 64.9, 56.2, 54.7, 31.7, 31.4, 30.6, 30.3, 29.9, 27.0, 26.1, 26.0, 17.9, 17.2, -3.9, -4.0, -4.7, -4.8. **IR** (ATR) ν_{max} : 3468, 2952, 2929, 2856, 2359, 1462, 1387, 1251, 1127. **HRMS** (ESI) calcd. for $\text{C}_{15}\text{H}_{32}\text{O}_4\text{SiNa}^+$ $[\text{M}+\text{Na}]^+$: 327.1968, found: 327.1935.

Physical data for **27**:

$^1\text{H NMR}$ (300 MHz, CDCl_3) δ 9.75 (d, $J = 2.3$ Hz, 1H), 9.75 (d, $J = 2.1$ Hz, 1H), 4.70 4.66 (m, 1H), 4.20 (dd, $J = 9.5, 2.1$ Hz, 1H), 4.16-4.14 (m, 1H), 4.13 (dd, $J = 2.6, 1.2$ Hz, 1H), 3.78 (dd, $J = 10.2, 2.1$ Hz, 1H), 3.46-3.39 (m, 1H), 3.38 (s, 3H), 3.23 (s, 3H), 1.94-1.63 (m, 8H), 1.62-1.40 (m, 2H), 0.97-0.91 (m, 18H), 0.89-0.82 (m, 6H), 0.14 (s, 3H), 0.12 (s, 3H), 0.09 (s, 3H), 0.08 (s, 3H).

Physical data for **28**:

$^1\text{H NMR}$ (300 MHz, CDCl_3) δ 7.16 (dd, $J = 15.7, 4.3$ Hz, 1H *maj*), 7.12 (dd, $J = 15.6, 4.4$ Hz, 1H *min*), 6.06 (dt, $J = 15.7, 1.9$ Hz, 2H), 4.74-4.70 (m, 1H *min*), 4.49-4.44 (m, 1H *maj*), 4.43-4.38 (m, 1H *min*), 4.30-4.14 (m, 5H), 3.47 (s, 3H *maj*), 3.42-3.36 (m, 1H *min*), 3.31 (s, 3H *min*), 3.09 (dd, $J = 9.9, 3.0$ Hz, 1H *maj*), 1.85-1.63 (m, 5H), 1.62-1.35 (m, 4H), 1.30 (t, $J = 7.1$ Hz, 6H), 1.34-1.14 (m, 1H *maj*), 0.96-0.82 (m, 24H), 0.09 (s, 3H *min*), 0.09 (s, 3H *maj*), 0.08 (s, 6H). $^{13}\text{C NMR}$ (75 MHz, CDCl_3) δ 166.6, 153.0, 148.7, 148.2, 121.0, 120.8, 117.7, 103.6, 98.4, 84.9, 83.6, 77.0, 74.2, 74.0, 68.4, 60.4, 56.0, 54.5, 31.9, 31.7, 31.6, 31.4, 31.4, 31.2, 29.9, 27.3, 26.1, 26.0, 26.0, 18.3, 18.3, 17.7, 16.9, 16.6, 14.4. **IR** (ATR) ν_{max} : 2953, 2928, 2855, 1724, 1707, 1643, 1472, 1462, 1387, 1259. **HRMS** (ESI) calcd. for $\text{C}_{19}\text{H}_{36}\text{O}_5\text{SiNa}^+$ $[\text{M}+\text{Na}]^+$: 395.2230, found: 395.2212.

Physical data for **29-E** (a mixture of isomers in 2.4: 1 ratio):

$^1\text{H NMR}$ (300 MHz, CDCl_3) δ 5.98-5.76 (m, 4H), 4.73-4.69 (m, 1H *maj*), 4.32-4.20 (m, 3H), 4.19-4.10 (m, 4H), 3.44 (s, 3H *min*), 3.32-3.24 (m, 1H *maj*), 3.27 (s, 3H *maj*), 2.98 (dd, $J = 9.8, 2.7$ Hz, 1H *min*), 1.93 (s, 1H *min*), 1.80-1.53 (m, 6H), 1.52-1.30 (m, 4H), 1.27-1.08 (m, 1H *min*), 0.94-0.80 (m, 24H), 0.06 (m, 3H *maj*), 0.05 (s, 3H *min*), 0.03 (s, 3H *maj*), 0.02 (s, 3H *min*). $^{13}\text{C NMR}$ (75 MHz, CDCl_3) δ 132.2, 131.6, 129.6, 129.4, 103.6, 98.2, 84.1, 77.5, 74.1, 73.7, 63.2, 55.8, 54.3, 31.7, 31.2, 30.8, 30.8, 29.8, 27.1, 25.9, 25.9, 18.2, 17.6, 16.8, -4.1, -4.2, -5.0, -5.1. **IR** (ATR) ν_{max} : 3412, 2950, 2928, 2855, 1462, 1386, 1251. **HRMS** (ESI) calcd. for $\text{C}_{17}\text{H}_{34}\text{O}_4\text{SiNa}^+$ $[\text{M}+\text{Na}]^+$: 353.2124, found: 353.2119.

Physical data for **29-Z** (a mixture of isomers in 3.9: 1 ratio):

$^1\text{H NMR}$ (300 MHz, CDCl_3) δ 5.97-5.79 (m, 2H), 5.77-5.61 (m, 2H), 4.77-4.67 (m, 2H), 4.66-4.59 (m, 1H *min*), 4.34 (dd, $J = 9.4, 1.8$ Hz, 1H *maj*), 4.22-4.10 (m, 2H), 4.00-3.87 (m, 2H), 3.50 (s, 3H *maj*), 3.40 (dd, $J = 10.2, 2.7$ Hz, 1H *min*), 3.33 (s, 3H *min*), 3.15 (dd, $J = 9.9, 3.0$ Hz, 1H *maj*), 2.92 (dd, $J = 9.5, 3.5$ Hz, 1H *maj*), 2.65 (dd, $J = 7.6, 4.4$ Hz, 1H *min*), 1.87 1.46 (m, 6H), 1.47-1.13 (m, 4H), 1.03-0.80 (m, 24H), 0.85-0.55 (m, 6H), 0.05 (s, 3H *min*), 0.04 (s, 3H *maj*). $^{13}\text{C NMR}$ (75 MHz, CDCl_3) δ 134.5, 134.2, 130.2, 129.4, 103.8, 98.5, 83.9, 77.6, 70.9, 70.3, 58.1, 57.8, 56.6, 54.6, 32.0, 31.4, 31.2, 29.9, 27.4, 25.8, 18.1, 18.0, 17.4, -4.3, -5.0.

Physical data for **30**:

$^1\text{H NMR}$ (300 MHz, CDCl_3) δ 6.22-6.08 (m, 2H), 5.94-5.81 (m, 2H), 4.79-4.75 (m, 4H), 4.74-4.71 (m, 1H *min*), 4.39-4.34 (m, 1H *maj*), 4.34-4.29 (m, 1H *min*), 4.29-4.23 (m, 1H *maj*), 3.40 (s, 3H *maj*), 3.38-3.31 (m, 1H *min*), 3.32 (s, 3H *min*), 3.08-3.02 (m, 1H *maj*), 3.03 (s, 3H *maj*), 3.03 (s, 3H *min*), 1.83-1.60 (m, 4H), 1.60-1.33 (m, 5H), 1.30-1.13 (m, 1H *maj*), 0.95-0.90 (m, 18H), 0.89 (d, $J = 6.4$ Hz, 3H *min*), 0.89 (d, $J = 6.4$ Hz, 3H *maj*), 0.10 (m, 3H *min*), 0.09 (s, 3H *maj*), 0.07 (s, 3H *min*), 0.06 (s, 3H *maj*). **IR** (ATR) ν_{max} : 2930, 2856, 1462, 1355, 1253. **HRMS** (ESI) calcd. for $\text{C}_{18}\text{H}_{36}\text{O}_6\text{SiNaS}$ $[\text{M}+\text{Na}]^+$: 431.1900, found: 431.1898.

Physical data for **31**:

$^1\text{H NMR}$ (500 MHz, CDCl_3) δ 7.47-7.40 (m, 4), 7.30-7.24 (m, 5), 7.24-7.18 (m, 1H *min*), 6.10 (dd, $J = 15.3, 5.0$ Hz, 1H *min*), 5.93 (dd, $J = 15.5, 5.5$ Hz, 1H *maj*), 5.89-5.80 (m, 1H *min*), 5.80-5.72 (m, 1H *maj*), 5.69 (d, $J = 5.2$ Hz, 1H *maj*), 4.73 (d, $J = 6.6$ Hz, 2H *min*), 4.70 (d, $J = 9.7$ Hz, 1H *min*), 4.64-4.56 (m, 2H *maj*), 4.37-4.33 (m, 1H *min*), 4.26 (d, $J = 5.3$ Hz, 1H *maj*), 3.81 (dd, $J = 10.0, 2.3$ Hz, 1H *maj*), 3.08 (dd, $J = 9.9, 2.7$ Hz, 1H *maj*), 3.01 (s, 3H *min*), 2.95 (s, 3H *maj*), 2.14-2.04 (m, 1H *maj*), 1.98-1.91 (m, 1H *maj*), 1.89-1.79 (m, 2H *min*), 1.78-1.69 (m, 1H *maj*), 1.69-1.62 (m, 2H), 1.57-1.49 (m, 2H), 1.32-1.24 (m, 1H *min*), 0.96-0.82 (m, 24H), 0.07 (s, 3H *min*), 0.04 (s, 6H), 0.01 (s, 3H *maj*). $^{13}\text{C NMR}$ (75 MHz, CDCl_3) δ 138.6, 131.1, 128.8, 126.7, 122.4, 85.3, 78.0, 73.3, 70.0, 38.2, 31.2, 31.1, 28.7, 26.0, 26.0, 18.4, 17.7, -4.0, -4.9. **IR** (ATR) ν_{max} : 2930, 2856, 1584, 1462, 1439, 1358, 1252. **HRMS** (ESI) calcd. for $\text{C}_{23}\text{H}_{38}\text{O}_5\text{SiNaS}_2$ $[\text{M}+\text{Na}]^+$: 509.1828, found: 509.1820.

Physical data for **32**:

$[\alpha]_D^{23}$ -5.44 (c 1.7, CHCl_3). $^1\text{H NMR}$ (300 MHz, CDCl_3) δ 6.10 (ddt, $J = 15.5, 5.9, 1.1$ Hz, 1H), 5.90 (dtd, $J = 15.6, 6.3, 1.2$ Hz, 1H), 4.79-4.73 (m, 2H), 4.41-4.35 (m, 1H), 3.94 (dd, $J = 9.6, 2.5$ Hz, 1H), 3.05 (s, 3H), 2.61 (ddd, $J = 17.9, 5.9, 3.7$ Hz, 1H), 2.43 (ddd, $J = 17.8, 11.2, 6.4$ Hz, 1H), 2.05-1.81 (m, 2H), 1.66-1.48 (m, 1H), 1.08 (d, $J = 6.6$ Hz, 3H), 0.92 (s, 9H), 0.09 (s, 3H), 0.06 (s, 3H). $^{13}\text{C NMR}$ (75 MHz, CDCl_3) δ 171.2, 136.4, 124.6, 88.0, 72.7, 69.5, 38.3, 29.9, 29.1, 27.9, 25.9, 17.8, -4.1, -4.8. **IR** (ATR) ν_{max} : 2930, 2857, 2360, 1736, 1584, 1462, 1354, 1251. **HRMS** (ESI) calcd. for $\text{C}_{17}\text{H}_{32}\text{O}_6\text{SiNaS}$ $[\text{M}+\text{Na}]^+$: 415.1587, found: 415.1589.

Physical data for **3**:

$^1\text{H NMR}$ (200 MHz, CDCl_3) δ 6.05-5.82 (m, 2H), 4.73 (d, $J = 6.7$ Hz, 2H), 4.23 (dd, $J = 7.9, 5.5$ Hz, 1H), 3.67 (s, 3H), 3.58 (dd, $J = 7.9, 6.6$ Hz, 1H), 3.03 (s, 3H), 2.50-2.35 (m, 2H), 2.01-1.85 (m, 1H), 1.08-1.63 (m, 1H), 1.62-1.44 (m, 1H), 1.44 (s, 3H), 1.39 (s, 3H), 0.92 (d, $J = 6.8$ Hz, 3H). $^{13}\text{C NMR}$ (50 MHz, CDCl_3) δ 174.1, 135.1, 125.9, 108.9, 84.6, 78.9, 69.0, 51.5, 38.1, 35.1, 31.6, 29.6, 28.1, 27.0, 26.8, 15.7. **IR** (ATR) ν_{max} : 2950, 2925, 2880, 1736, 2840, 2355, 2334, 1738, 1460, 1439, 1360, 1256.