Supporting Information

to accompany

Total Synthesis of Khafrefungin Using Highly Stereoselective Vinylogous Mukaiyama Aldol Reaction

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**Experimental Section**

**General.**

IR spectra were recorded on a JASCO FT/IR-410. ¹H and ¹³C NMR spectra were recorded on a JEOL JNM-LD400 spectrometer in CDCl₃, C₆D₆ or CD₃OD as a solvent. Tetramethylsilane (TMS) served as internal standard (δ 0) for ¹H NMR. CD₃OD (δ 3.30) were used as internal references for ¹H NMR. CDCl₃ (δ 77.0), C₆D₆ (δ 128.0) or CD₃OD (δ 49.0) were used as internal references for ¹³C NMR. Optical rotations were recorded on a JASCO P-1030. Flash column chromatography was performed on PSQ 100B (Fuji Silysia Co., Ltd., Japan). Analytical thin-layer chromatography was performed on Silica gel 60 F₂₅₄ plates (Merck). Preparative thin layer chromatography was performed on Wakogel B-5F. Electrospray ionization mass spectra were recorded on a Applied Biosystems mass spectrometer (API QSTAR pulsar i) under conditions as high resolution, using poly(ethylene glycol) as internal standard. Fast atom bombardment mass spectra were recorded on JEOL JMS-SX102A mass spectrometer. All air and water sensitive reactions were performed in flame-dried glassware.

**Alcohol 12:**

![Diagram of Alcohol 12](image)

To a solution of the aldehyde 7 (2.30 g, 11.6 mmol) in CH₂Cl₂ (110 ml) was added TiCl₄ (11.6 ml of a 1.0 M solution in CH₂Cl₂, 11.6 mmol) and a solution of 1b (5.91 g, 17.4 mmol) in CH₂Cl₂ (110 ml) at −78 °C. After stirring for 12 hr at −30 °C, the reaction was quenched with a saturated aq. Rochelle Salt and a saturated aq. NaHCO₃, the mixture was warmed to room temperature and stirred vigorously until the resulting white slurry was completely dissolved, and extracted with ethyl acetate. The combined organic extracts were washed with water and brine, dried over anhydrous sodium sulfate, and concentrated under reduced pressure. The residue was purified by silica gel column chromatography (hexane / ethyl acetate = 5 / 1) to give 12 (4.81 g, 98%) as a colorless oil.; IR (neat) 3531, 2961, 2925, 2854, 1775, 1690 cm⁻¹; ¹H NMR (400 MHz, CDCl₃) δ 0.88 (3H, t, J = 6.8 Hz), 0.91-0.94 (12H, m), 1.24-1.28 (18H, m), 1.64-1.65 (1H, m), 1.95 (3H, d, J = 1.2 Hz), 2.35 (1H, dsep, J = 4.6, 6.8 Hz), 2.73 (1H, ddq, J = 6.8, 7.8, 10.3 Hz) 3.05 (1H, s), 3.28 (1H, d, J = 8.8 Hz), 4.19 (1H, dd, J = 5.6, 9.0 Hz), 4.34 (1H, t, J = 9.0 Hz), 4.58 (1H, ddd, J = 4.6, 5.6, 9.0 Hz), 5.79 (1H, dd, J = 1.2, 10.3 Hz); ¹³C NMR (100 MHz, CDCl₃) 12.3, 13.9, 14.1, 14.2, 15.2, 15.7, 17.9, 22.7, 27.6, 28.4, 29.4, 29.67, 29.72, 30.0, 31.9, 34.0, 34.7, 37.4, 58.1, 60.4, 63.4, 131.1, 142.7, 154.5, 171.7; [α]D 25= +12.8 (c 0.98, CHCl₃); HRMS (ESI) calcd for C₂₃H₄₂NO₃Na [M + Na]: 446.3240. found 446.3254.

**Ea1 5a:**

![Diagram of Ea1 5a](image)

To a solution of the TBS ether 13a (2.20 g, 4.07 mmol) in CH₂Cl₂ (40.0 ml) was added diisobutylaluminum hydride (8.40 ml of a 0.94 M solution in hexane, 8.15 mmol) at −78 °C. After stirring for 10 min at −78 °C, the reaction was quenched with methanol. After a saturated aq. Rochelle Salt and diethyl ether were added, the mixture was warmed to room
temperature and stirred vigorously until the resulting white slurry was completely dissolved. After the phases were separated, the aqueous layer was extracted with diethyl ether. The combined organic extracts were washed with water and brine, dried over anhydrous sodium sulfate, and concentrated under reduced pressure. The residue was purified by silica gel column chromatography (hexane / ethyl acetate = 50 / 1) to give 5a (1.47 g, 88%) as a colorless oil.; IR (neat) 2956, 2927, 2855, 1691, 1643 cm⁻¹; ¹H NMR (400 MHz, CDCl₃) 0.05 (3H, s), 0.06 (3H, s), 0.85-0.93 (15H, m), 1.04 (3H, d, J = 7.1 Hz), 1.19-1.32 (18H, m), 1.50-1.57 (1H, m), 1.75 (3H, d, J = 1.2 Hz), 2.88 (1H, d, q, J = 3.9, 7.1, 10.0 Hz), 3.54 (1H, t, J = 3.9 Hz), 6.64 (1H, dd, J = 1.2, 10.0 Hz), 9.40 (1H, s); ¹³C NMR (100 MHz, CDCl₃) −3.9, −3.7, 9.3, 14.1, 15.4, 18.27, 18.35, 22.7, 25.7, 26.1 (3 carbons), 27.8, 29.3, 29.6 (2 carbons), 29.9, 31.9, 33.0, 36.9, 38.5, 79.7, 137.5, 158.1, 195.6; [α]_D²² = −3.6 (c 1.21, CHCl₃); HRMS (ESI) calcd for C₃₂H₃₅O₃NaSi ( [M + Na]⁺): 433.3472. found 433.3459.

Alcohol 14:

To a solution of propionaldehyde 8 (1.70 ml, 23.6 mmol) in CH₂Cl₂ (60.0 ml) was added TiCl₄ (11.8 ml of a 1.0 M solution in CH₂Cl₂, 11.8 mmol) and a solution of ent-1b (4.00 g, 11.8 mmol) in CH₂Cl₂ (60.0 ml) at −78 °C. After stirring for 12 hr at −40 °C, the reaction mixture was quenched with a saturated aq. Rochelle Salt and a saturated aq. NaHCO₃, the mixture was warmed to room temperature and stirred vigorously until the resulting white slurry was completely dissolved, and extracted with ethyl acetate. The extract was washed with water and brine, dried with anhydrous sodium sulfate, and concentrated under reduced pressure. The residue was purified by silica gel column chromatography (hexane / ethyl acetate = 8 / 1) to give 14 (3.03 g, 91%) as a colorless oil.; IR (neat) 3522, 2965, 2932, 2876, 1769, 1683 cm⁻¹; ¹H NMR (400 MHz, CDCl₃) 0.92 (3H, d, J = 6.8 Hz), 0.94 (3H, d, J = 6.8 Hz), 0.98 (3H, d, J = 6.8 Hz), 1.02 (3H, t, J = 7.5 Hz), 1.39-1.51 (1H, m), 1.63-1.77 (1H, m), 1.95 (3H, d, J = 1.5 Hz), 2.34 (1H, dsept, J = 4.4, 6.8 Hz), 2.53-2.63 (1H, dqq, J = 6.8, 7.5, 10.2 Hz), 3.11 (1H, dd, J = 1.0, 3.2 Hz), 3.30 (1H, m), 4.19 (1H, dd, J = 5.8, 9.0 Hz), 4.35 (1H, t, J = 9.0 Hz), 4.59 (1H, ddd, J = 4.4, 5.8, 9.0 Hz), 5.83 (1H, dd, J = 1.5, 10.2 Hz); ¹³C NMR (100 MHz, CDCl₃) 10.0, 13.9, 15.2, 16.2, 17.9, 26.7, 28.4, 39.8, 58.1, 63.5, 76.5, 131.1, 142.4, 154.6, 171.6; [α]_D²² = −25.9 (c 1.06, CHCl₃); HRMS (ESI) calcd for C₁₂H₁₃NO₂Na ( [M + Na]⁺): 306.1681. found 306.1686.

Ethyl ketone 6:

To a solution of the alcohol 15 (2.00 g, 7.34 mmol) in CH₂Cl₂ (80.0 ml) was added Dess-Martin periodinane (4.67 g, 11.0 mmol) at 0 °C. After stirring for 3 h at room temperature, the reaction mixture was quenched with a saturated aq. NaHCO₃ and ethyl acetate. After the phases were separated, the aqueous layer was extracted with diethyl ether. The combined organic extracts were washed with a saturated aq. NaHCO₃ and brine, dried over anhydrous sodium sulfate, and concentrated under reduced pressure. The residue was purified by silica gel column chromatography (hexane / ethyl acetate = 20 / 1) to give 6 (1.91 g, 96%) as a colorless oil.; IR (neat) 2956, 2931, 2895, 2857, 1718 cm⁻¹; ¹H NMR (400 MHz, CDCl₃) 0.03-0.12 (6H, m), 0.87-1.00 (9H, m), 1.03 (3H, t, J = 7.3 Hz), 1.13 (3H, d, J = 6.8 Hz), 1.68 (3H, d, J = 1.1 Hz), 2.40 (1H, dqq, J = 7.3, 17.8 Hz), 2.49 (1H, dq, J = 7.3, 17.8 Hz), 3.42 (1H, dq, J = 6.8, 9.8 Hz), 4.03 (2H, s), 5.31 (1H,
dq, J = 1.1, 9.8 Hz); $^{13}$C NMR (100 MHz, CDCl$_3$) –5.30, –5.29, 7.8, 13.8, 16.5, 18.8, 25.9 (3 carbons), 33.7, 45.7, 68.0, 123.7, 137.0, 212.6; $[\alpha]_D^{25} = –206.9$ (c 1.00, CHCl$_3$); HRMS (ESI) calc'd for C$_{13}$H$_{20}$O$_2$NaSi ($[M + Na]^+$). 293.1907. found 239.1908.

Dienone 17:

To a solution of the alcohol 16 (400 mg, 0.587 mmol) in THF (5.80 ml) was added PBU$_3$ (220 µl, 0.881 mmol) and disopropylazodicarboxylate (463 µl of a 1.9 M solution in toluene, 0.881 mmol) at –78 °C. After stirring for 6 h at –30 °C, the solvent was removed under reduced pressure. The residue was taken up in diethyl ether and the precipitate was filtered. The filtrate was concentrated under reduced pressure. The residue was purified by silica gel column chromatography (hexane / ethyl acetate = 200 / 1) to give 17 (374 mg, 96%) as a colorless oil.; IR (neat) 2956, 2927, 2855, 1716, 1661, 1616 cm$^{-1}$; $^1$H NMR (400 MHz, CDCl$_3$) 0.02-0.04 (12H, m), 0.85-0.91 (24H, m), 0.99 (3H, d, J = 7.1 Hz), 1.15 (3H, d, J = 6.6 Hz), 1.20-1.44 (18H, m), 1.49-1.52 (1H, m), 1.70 (3H, d, J = 1.5 Hz), 1.85 (3H, d, J = 1.2 Hz), 1.93 (3H, d, J = 1.2 Hz), 2.63-2.72 (1H, m), 3.44 (1H, t, J = 4.0 Hz), 4.00 (2H, s), 4.08-4.16 (1H, m), 5.38 (1H, dd, J = 1.2, 9.8 Hz), 5.74 (1H, d, J = 9.8 Hz), 6.94 (1H, s); $^{13}$C NMR (100 MHz, CD$_2$Cl$_2$) –5.12, –5.09, –3.57, –3.53, 13.7, 13.9, 14.3, 15.6, 16.8, 18.1, 18.5, 18.6, 19.0, 23.1, 26.1 (3 carbons), 26.3 (3 carbons), 28.2, 29.8, 30.12, 30.15 (2 carbons), 30.4, 32.3, 34.2, 37.1, 38.4, 39.7, 68.8, 80.3, 127.0, 131.3, 134.6, 135.1, 140.3, 142.6, 202.8; $[\alpha]_D^{24} = –41.0$ (c 1.13, CHCl$_3$); HRMS (ESI) calc'd for C$_{30}$H$_{42}$O$_2$NaSi ($[M + Na]^+$). 685.5381 found 685.5410.

Carboxylic acid 3:

To a solution of the alcohol (1.28 g, 2.33 mmol) in CH$_2$Cl$_2$ (24.0 ml) was added Manganese (IV) oxide (2.03 g, 23.3 mmol). After stirring for 2 h at room temperature, the mixture was filtered through a Celite pad. The filtrate was concentrated under reduced pressure. The residue was purified by silica gel column chromatography (hexane / ethyl acetate = 100 / 1) to give the Carboxylic acid 3 (1.25 g, 98%) as a colorless oil.; IR (neat) 2956, 2926, 2855, 1693, 1667 cm$^{-1}$; $^1$H NMR (400 MHz, CDCl$_3$) 0.00-0.04 (6H, s), 0.85-0.92 (15H, m), 1.00 (3H, d, J = 6.8 Hz), 1.20-1.33 (21H, m), 1.48-1.57 (1H, m), 1.84 (3H, d, J = 1.0 Hz), 1.88 (3H, s), 1.96 (3H, s), 2.64-2.73 (1H, m), 3.45 (1H, t, J = 4.2 Hz), 4.41 (1H, dq, J = 6.8, 9.5 Hz), 5.80 (1H, d, J = 9.8 Hz), 6.57 (1H, dd, J = 1.2, 9.5 Hz), 6.94 (1H, s), 9.41 (1H, s); $^{13}$C NMR (100 MHz, CDCl$_3$) –3.7, –3.8, 9.4, 13.4, 14.1, 15.3, 16.7, 17.9, 18.4, 18.8, 22.7, 26.1 (3 carbons), 27.7, 29.3, 29.7 (3 carbons), 29.9, 31.9, 33.6, 36.7, 38.1, 40.2, 80.0, 130.4, 133.3, 138.4, 142.6, 144.6, 153.7, 195.0, 202.0; $[\alpha]_D^{24} = +7.3$ (c 1.05, CHCl$_3$); HRMS (ESI) calc'd for C$_{30}$H$_{42}$O$_2$NaSi ($[M + Na]^+$). 569.4360. found 569.4371.

To a solution of the resulting enal (1.25 g, 2.29 mmol) in tert-butyl alcohol (30.0 ml) were added 2-methyl-2-butene (17.3 ml) and a mixture of sodium chlorite (4.67 g) and sodium dihydrogenphosphate dehydrate (4.67 g) in water (30.0 ml). After stirring for 16 h at room temperature, the reaction mixture was diluted with 0.5 M HHSO$_4$ and ethyl acetate. The organic layer was separated, and the aqueous layer was extracted with ethyl acetate. The combined organic layer was washed with 10% NaHSO$_3$ and brine, dried over
anhydrous sodium sulfate, and concentrated under reduced pressure. The residue was purified by silica gel column chromatography (hexane / ethyl acetate = 2 / 1) to give 3 (1.24 g, 96%) as a colorless oil.; IR (neat) 3417, 2957, 2927, 2855, 1690, 1669, 1615 cm⁻¹; ¹H NMR (400 MHz, CDCl₃) 0.03-0.16 (6H, m), 0.79-0.92 (15H, m), 0.98 (3H, d, J = 6.8 Hz), 1.17-1.31 (21H, m), 1.48-1.57 (1H, m) 1.86 (3H, d, J = 1.2 Hz), 1.93 (3H, d, J = 1.5 Hz), 1.95 (3H, d, J = 1.0 Hz), 2.63-2.72 (1H, m), 3.44 (1H, t, J = 4.0 Hz), 4.21 (1H, dq, J = 6.8, 10.0 Hz), 5.77 (1H, d, J = 9.8 Hz), 6.89 (1H, dd, J = 1.5, 9.8 Hz); ¹³C NMR (100 MHz, CDCl₃) −3.7, −3.8, 12.2, 13.4, 14.1, 15.2, 16.7, 17.4, 18.4, 18.8, 22.7, 26.1 (3 carbons), 27.7, 29.3, 29.6 (3 carbons), 29.9, 31.9, 33.6, 36.7, 38.0, 40.4, 79.9, 126.8, 130.5, 133.5, 142.1, 144.3, 144.7, 172.9, 202.2; [α]_D²¹ = +12.8 (c 0.99 , CHCl₃); HRMS (FAB) calcld for C₁₄H₃₃O₃Si ( [M + H]+). 563.4496. found 563.4495.

Alcohol 4:

To a solution of the diol 19 (790 mg, 1.54 mmol) in CH₂Cl₂ (5.00 ml) was added triethylamine (537 µl, 3.86 mmol) at 0 °C. After stirring for 5 min at the same temperature, a solution of tert-butyl dimethylsilyl chloride (256 mg, 1.70 mmol) in CH₂Cl₂ (10.0 ml) was added to the mixture at the same temperature. After stirring for 20 h at room temperature, the reaction mixture was quenched with a saturated aq. NaHCO₃. After the phases were separated, the aqueous layer was extracted with diethyl ether. The combined organic extracts were washed with water and brine, dried over anhydrous sodium sulfate, and concentrated under reduced pressure. The residue was purified by silica gel column chromatography (hexane / ethyl acetate = 8 / 1) to give 4 (917 mg, 95%) as a colorless oil.; IR (neat) 3486, 3001, 2953, 2931, 2856, 2837, 1613, 1586, 1514 cm⁻¹; ¹H NMR (400 MHz, CDCl₃) 0.05 (3H, s), 0.05 (3H, s), 0.89 (9H, s), 2.86 (1H, d, J = 5.4 Hz), 3.38 (1H, dd, J = 2.9, 9.3 Hz), 3.42 (1H, dd, J = 2.9, 9.3 Hz), 3.62 (1H, q, J = 5.0 Hz), 3.66 (1H, dd, J = 2.9, 5.0 Hz ) 3.756 (1H, d, J = 5.0 Hz), 3.761 (1H, d, J = 5.0 Hz), 3.79 (9H, s), 3.95 (1H, dq, J = 2.9, 5.4 Hz), 4.36 (1H, d, J = 11.6 Hz), 4.42 (1H, d, J = 11.6 Hz), 4.45 (1H, d, J = 11.2 Hz), 4.50 (1H, d, J = 11.2 Hz), 4.61 (1H, d, J = 11.2 Hz), 4.61 (1H, d, J = 11.2 Hz), 6.82 (2H, d, J = 8.8 Hz), 6.83 (2H, d, J = 8.8 Hz), 6.86 (2H, d, J = 8.8 Hz), 7.16 (2H, d, J = 8.8 Hz), 7.217 (2H, d, J = 8.8 Hz), 7.221 (2H, d, J = 8.8 Hz); ¹³C NMR (100 MHz, CDCl₃) −5.47, −5.45, 18.2, 25.8 (3 carbons), 55.1 (3 carbons), 62.5, 69.6, 70.8, 72.4, 72.7, 74.0, 77.4, 79.8, 113.6 (6 carbons), 129.3 (2 carbons), 129.5 (2 carbons), 129.8 (2 carbons), 130.2, 130.5, 130.6, 159.1 (3 carbons); [α]_D²¹ = +3.8 (c 0.80, CHCl₃); HRMS (ESI) calcld for C₁₃H₂₇O₃NaSi ( [M + Na]+). 649.3167. found 649.3160.

Ester 20:

To a solution of the Carboxylic acid 3 (300 mg, 0.53 mmol) and the alcohol 4 (434 mg, 0.69 mmol) in toluene (4.40 ml) was added a solution of PPh₃ (210 mg, 0.80 mmol) in toluene (6.00 ml) and diisopropylazodicarboxylate (420 µl of a 1.9 M solution in toluene, 0.80 mmol) at −20 °C. After stirring for 12 h at room temperature,
the reaction mixture was quenched with a saturated aq. NaHCO₃. After the phases were separated, the aqueous layer was extracted with ethyl acetate. The combined organic extracts were washed with water and brine, dried over anhydrous sodium sulfate, and concentrated under reduced pressure. The residue was purified by silica gel column chromatography (hexane / ethyl acetate = 10 / 1) to give 20 (537 mg, 86%) as a colorless oil.; IR (neat) 2954, 2928, 2855, 1713, 1667, 1613, 1513 cm⁻¹; ¹H NMR (400 MHz, CDCl₃) δ 0.01-0.04 (12H, m), 0.84-0.91 (24H, m), 0.97 (3H, d, J = 6.8 Hz), 1.20-1.31 (21H, m), 1.48-1.57 (1H, m), 1.82 (3H, d, J = 1.2 Hz), 1.92 (3H, d, J = 1.2 Hz), 1.94 (3H, s), 2.60-2.70 (1H, m), 3.44 (1H, t, J = 4.0 Hz), 3.51-3.70 (3H, m), 3.71-3.83 (11H, m), 3.91 (1H, dd, J = 2.9 Hz), 4.21-4.26 (1H, m), 4.36-4.55 (6H, m), 5.23-5.27 (1H, m), 5.76 (1H, d, J = 9.8 Hz), 6.79-6.91 (8H, m), 7.14-7.23 (6H, m); ¹³C NMR (100 MHz, CDCl₃) δ -5.5, -5.4, -3.8, -3.7, 12.7, 13.4, 14.1, 15.2, 16.8, 17.9, 18.1, 18.3, 18.8, 22.6, 25.9 (3 carbons), 26.1 (3 carbons), 27.6, 29.3, 29.6 (3 carbons), 29.9, 31.9, 33.7, 36.8, 37.9, 40.0, 55.2 (3 carbons), 62.9, 68.1, 72.6, 73.3, 73.4, 74.0, 77.1, 79.4, 79.9, 113.6 (3 carbons), 113.7 (3 carbons), 127.6, 129.1 (2 carbons), 129.8 (2 carbons), 129.9 (2 carbons), 130.2, 130.4 (2 carbons), 130.7, 133.6, 141.2, 142.5, 143.7, 159.0, 159.1 (2 carbons), 166.8, 202.3; [α]D²⁵ = +5.4 (c 0.78, CHCl₃); HRMS (ESI) caled for C₉₂H₁₄₀O₁₃Na₂SII ( [M + Na]⁺). 1193.7478. found 1193.7484.

**Kharefsungin (2):**

![Kharefsungin (2)](image)

To a solution of the ketoacid 21 (165 mg, 0.154 mmol) in CH₂Cl₂ (2.31 ml) was added trifluoroacetic acid (770 µl) at 0 °C. After stirring for 60 min at the room temperature, the reaction mixture was quenched with a saturated aq. NaHCO₃ and poured into aqueous citric acid and ethyl acetate. The organic layer was separated, and the aqueous layer was extracted with ethyl acetate. The combined organic extracts were washed with water and brine, dried over anhydrous sodium sulfate, and concentrated under reduced pressure. The residue was purified by silica gel column chromatography (CHCl₃ / MeOH / H₂O = 4 / 1 / 0.1) to give kharefsungin (2) (39.4 mg, 47%) as a colorless amorphous powder.; IR (neat) 3393, 2925, 1711, 1658, 1612, 1455, 1246 cm⁻¹; ¹H NMR (400 MHz, CD₂OD) δ 0.89 (3H, t, J = 7.1 Hz), 0.91 ( 3H, d, J = 6.8 Hz), 1.00 (3H, d, J = 6.8 Hz), 1.21 (3H, d, J = 6.8 Hz), 1.28-1.44 (18H, m), 1.49-1.56 (1H, m), 1.90 (3H, s), 1.93 (3H, s), 1.95 (3H, d, J = 1.4 Hz), 2.69-2.81 (1H, m), 3.25 (1H, t, J = 5.6 Hz), 3.82 (1H, dd, J = 4.2, 12.2 Hz), 3.92 (1H, dd, J = 2.7, 12.2 Hz), 4.16 (1H, d, J = 1.7 Hz), 4.25 (1H, dd, J = 1.7, 9.0 Hz), 4.38 (1H, dq, J = 6.8, 9.8 Hz), 4.97 (1H, ddd, J = 2.7, 4.2, 9.0 Hz), 5.73 (1H, d, J = 9.8 Hz), 6.78 (1H, dd, J = 1.4, 9.8 Hz), 7.10 (1H, s); ¹³C NMR (100 MHz, CD₂OD) δ 12.9, 13.7, 14.4, 14.6, 16.8, 18.0, 18.1, 23.7, 28.0, 30.4, 30.6, 30.71, 30.73, 30.9, 33.0, 34.6, 37.2, 37.4, 41.3, 61.4, 71.2, 71.7, 75.4, 79.7, 129.2, 133.0, 134.7, 141.5, 143.7, 145.8, 168.4, 176.1, 204.9; [α]D²⁵ = -24.2 (c 0.90, MeOH) (lit. value¹ = -27, c 0.29, MeOH); HRMS (FAB) caled for C₁₃₂H₁₄₃O₁₅ ([M − H]⁻). 595.3846. found. 595.3848.

**Literature Cited in the Supporting Information**
