Supporting Information

Experimental Section

All the reagents and solvents were purchased commercially and used without purification unless otherwise noted. ^{1}H and ^{13}C nuclear magnetic resonance (NMR) spectra were recorded in $CDCl_3$ on a JEOL Alpha 500 or JEOL Lambda 500 spectrometers. Chemical shifts are reported in part per million (ppm) with tetramethylsilane (TMS) as an internal standard. Coupling constants (*J*) are given in hertz (Hz) and the abbreviations s, d, t, q, br and m refer to singlet, doublet, triplet, quartet, broad and multiplet respectively. All the assignments were made based on ^{1}H-^{1}H COSY, HMQC and HMBC methods. Mass spectra (MS) were obtained with a Micromass Platform LC™ or a Micromass Q-Tof™ 2. Infrared spectra (IR) were recorded on a PerkinElmer Paragon 1000 spectrometer as KBr pellets and are reported as reciprocal centimeters (cm^{-1}). Elemental analyses were performed by a PerkinElmer 2400 CHN analyzer. Melting Points were measured using a Mettler FP61 melting point instrument and are uncorrected.

5-*O*-Desosaminyl-6-*O*-methylerythronolide A (1). A mixture of clarithromycin (20 g, 26.74 mmol) and 2M aqueous hydrochloric acid (200 mL) was stirred at room temperature for 3h. The reaction mixture was washed with $CHCl_3$, and then was adjusted to pH10 with 2M NaOH solution, and was extracted with ethyl acetate. The organic layer was washed with brine, dried over $MgSO_4$ and concentrated in vacuo. The residue was crystallized from ethyl acetate to afford 8.31g (53%) of **1** as a colorless powder: mp 237 – 239 ^{o}C; IR (KBr) 1728, 1693 cm^{-1}; HRMS (ES) *m/z* 590.3894 [$(M+H)^+$; calcd for $C_{30}H_{56}NO_{10}$: 590.3904]. Anal. Calcd for $C_{30}H_{55}NO_{10}$: C, 61.10; H, 9.40; N, 2.37. Found: C, 60.83; H, 9.30; N, 2.36.

2, 3-Di-*O*-Acetyl-5-*O*-desosaminyl-6-*O*-methylerythronolide A (2). To a solution of **1** (10.0 g, 17.0 mmol) in THF (150 mL) was added 4´-dimethylaminopyridine (1.04 g, 8.51 mmol), pyridine (11.0 mL, 0.14 mol) and acetyl chloride (4.82 mL, 67.8 mmol). The reaction mixture was stirred at room temperature for 4days. After evaporation of the solvent, the residue was diluted with ethyl acetate and washed with brine. The organic layer was dried over $MgSO_4$ and concentrated under reduced pressure. The residue was purified by column chromatography eluting with MeOH/ $CHCl_3$ (2/ 98) to afford 7.82g (68%) of **2** as slight yellow amorphous. Crystals for X-ray analysis was obtained by recrystallization from

Et_2O/ *n*-hexane: mp 211– 213 ºC. IR (KBr) 1749, 1742, 1694 cm^{-1}
; HRMS (ES) *m/z* 674.4118 $[(M+H)^+$; calcd for $C_{34}H_{60}NO_{12}$:674.4116]. Anal. Calcd for $C_{34}H_{59}NO_{12}$: C, 60.60; H, 8.83; N, 2.08. Found: C, 60.55; H, 8.95; N, 2.08.

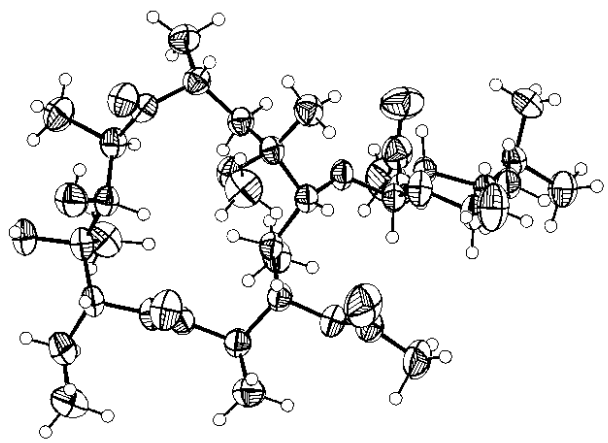

Chart 1. ORTEP drawing of the X-ray crystal structure of compound **2**

3-*O*-Acetyl-5-*O*-desosaminyl-6-*O*-methylerythronolide A (3a). A solution of **2** (3.47 g, 5.15 mmol) in MeOH (30 mL) was stirred at room temperature for 2days. After evaporation of the solvent, the residue was purified by column chromatography eluting with MeOH/ $CHCl_3$ (4/ 96) to afford 3.20g (98%) of **3a** as colorless amorphous: IR (KBr) 1739, 1688 cm^{-1}; HRMS (ES) *m/z* 632.4019$[(M+H)^+$; calcd for $C_{32}H_{58}NO_{11}$: 632.4010]. Anal. Calcd for $C_{32}H_{57}NO_{11}$: C, 60.83; H, 9.09; N, 2.22. Found: C, 60.52; H, 9.08; N, 2.25.

2´-*O*-Acetyl-5-*O*-desosaminyl-6-*O*-methylerythronolide A (4)[10]. To a solution of **1** (11.78 g, 0.02 mol) in acetone (100 mL) was added acetic anhydride (2.27 mL, 24 mmol) at 0 ºC. After stirring at room temperature for 6 h, the reaction mixture was evaporated in vacuo. The residue was partitioned between CH_2Cl_2 and the organic layer was saturated Na_2CO_3

solution, washed with brine, and dried over $MgSO_4$. After evaporation of the solvent, the residue was purified by crystallization from Et_2O/ *n*-hexane to give 12.17g (96%) of **4** as a colorless powder: LRMS (FAB) *m/z* 632$(M+H)^+$.

3-*O*-Cyanoacetyl-5-*O*-desosaminyl-6-*O*-methylerythronolide A (3b). To a solution of **4** (816 mg, 1.29 mmol) in CH_2Cl_2 (20 mL) was added cyanoacetic acid (0.68 g, 7.84 mmol), 1-[3-(dimethylamino)propyl]-3-ethylcarbodiimide hydrochloride (EDC-HCl) (1.48 g, 7.78 mmol), and 4´-dimethylaminopyridine (DMAP) (0.16 g, 1.31 mmol) at 0^{o}C. After stirring at room temperature for 2days, the reaction mixture was partitioned between ethyl acetate and water, and the pH of the aqueous layer was adjusted to 10 with 2M NaOH solution. The organic layer was washed with saturated NH_4Cl solution, and then dried over $MgSO_4$. After evaporation of the solvent under reduced pressure, the residue was dissolved in MeOH (20 mL) and the solution was stirred at room temperature for 2days. The reaction mixture was evaporated in vacuo, and the residue was purified by column chromatography eluting with MeOH/ $CHCl_3$/ 25% NH_4OH (15.5/ 1/ 0.1) to afford 0.62 g (73%) of **3b** as colorless amorphous, along with 91 mg (12%) of recovered starting material **1**. **3b**: IR (KBr) 1753, 1693 cm^{-1}; HRMS (ES) *m/z* 657.3958 [$(M+H)^+$; calcd for $C_{33}H_{57}N_2O_{11}$: 657.3962]. Anal. Calcd for $C_{33}H_{56}N_2O_{11}\cdot H_2O$: C, 58.73; H, 8.66; N, 4.15. Found: C, 58.97; H, 8.56; N, 4.12.

3-*O*-(*N-tert*-Butoxycarbonyl)glycyl-5-*O*-desosaminyl-6-*O*-methylerythronolide A (3d). 2´-Acetate of the title compound was prepared from compound **4** (1.0 g, 1.58 mmol) and *N*-(*tert*-butoxycarbonyl)glycine (553 mg, 3.16 mmol) by the same procedures as described for **3b**. Purification by column chromatography eluting with acetone/ *n*-hexane/ Et_3N (6/ 10/ 0.2) to afford 1.2 g (96%) of 2´-Ac **3d**. This product (0.8 g, 1.0mmol) was dissolved in MeOH (8 mL) and refluxed for 2h. After evaporation of the solvent, the residue was purified by column chromatography eluting with $CHCl_3$/ MeOH/ 25% NH_4OH (30/ 1/ 0.1) to afford 0.74 g (98%) of **3d** as colorless amorphous: IR (KBr) 1757, 1741, 1715 cm^{-1}; HRMS (ES) *m/z* 747.4635 [$(M+H)^+$; calcd for $C_{37}H_{67}N_2O_{13}$: 747.4643]. Anal. Calcd for $C_{37}H_{66}N_2O_{13}\cdot{}^1/_2H_2O$: C, 58.79; H, 8.93; N, 3.71. Found: C, 58.77; H, 8.92; N, 3.65.

3-*O*-(*N*-Benzyloxycarbonyl)glycyl-5-*O*-desosaminyl-6-*O*-methylerythronolide A (3e). The title compound was prepared from compound **4** (2.0 g, 3.17 mmol) and *N*-(*tert*-benzyloxycarbonyl)glycine (1.99 g, 9.52 mmol) by the same procedures as described for **3b**. Purification by column chromatography gave 2.40 g (97%) of **3d** as colorless amorphous: IR (KBr) 1761, 1748, 1742, 1738, 1732, 1716, 1698 cm^{-1}; HRMS (ES) *m/z* 781.4493 [(M+H) $^{+}$; calcd for $C_{40}H_{65}N_2O_{13}$: 781.4487]. Anal. Calcd for $C_{40}H_{64}N_2O_{13}$: C, 61.52; H, 8.26; N, 3.59. Found: C, 61.32; H, 8.07; N, 3.54.

5-*O*-Desosaminyl-3-*O*-glycyl-6-*O*-methylerythronolide A (3c). A mixture of **3e** (2.0 g, 2.56 mmol), 10% palladium carbon (0.4 g), and ammonium formate (1.6 g, 25.4 mmol) in MeOH (20 mL) was stirred at room temperature for 1.5h. The reaction mixture was passed through a celite pad, and the filtrate was concentrated in vacuo. The residue was purified by crystallization from ethyl acetate/ *n*-hexane to afford 0.95 g (50%) of **3c** as colorless powder: mp 187–190 °C; IR (KBr) 1745, 1738, 1725, 1698 cm^{-1}; HRMS (ES) *m/z* 647.4122 [(M+H) $^{+}$; calcd for $C_{32}H_{59}N_2O_{11}$: 647.4119]. Anal. Calcd for $C_{32}H_{58}N_2O_{11}$: C, 59.42; H, 9.04; N, 4.33. Found: C, 59.41; H, 9.11; N, 4.24.

(*E*)-5-*O*-Desosaminyl-6-*O*-methylerythronolide A 9-*O*-(Phenylmethyl)oxime (5). A mixture of clarithromycin 9-oxime[11] and 2M aqueous hydrochloric acid (70 mL) was stirred at room temperature for 15h. The reaction mixture was washed with $CHCl_3$, and then was adjusted to pH10 with 2M NaOH solution. The solution was extracted with ethyl acetate and washed with brine. The organic layer was dried over $MgSO_4$ and evaporated in vacuo. The residue was crystallized from 2-propanol to afford 2.55g (45%) of (*E*)-5-*O*-desosaminyl-6-*O*-methylerythronolide A 9-oxime. To a solution of the oxime (1.53 g, 2.52 mmol) in THF (30 mL) was added benzyl chloride (0.87 g, 6.87 mmol), powdered potassium hydroxide (0.34 g, 6.06 mmol), and tetra-*n*-butylammonium iodide (0.19 g, 0.51 mmol) at 0 °C. After stirring at room temperature for 22h, the reaction was quenched by addition of 50% dimethylamine solution and the reaction mixture was partitioned between ethyl acetate and water. The organic layer was washed with brine, dried over $MgSO_4$ and evaporated in vacuo. The residue was purified by column chromatography eluting with $CHCl_3$ / MeOH / 25% NH_4OH (21/ 1/ 0.1) to give 1.09 g (62%) of **5** as colorless amorphous, along with 0.53 g (27%) of 2′-*O*-phenylmethylated derivative of **5** as colorless amorphous: IR (KBr) 1735, 1630 cm^{-1}; HRMS (ES) *m/z* 695.4485 [(M+H) $^{+}$; calcd for $C_{37}H_{63}N_2O_{10}$: 695.4482]. Anal. Calcd for $C_{37}H_{62}N_2O_{10}$: C, 63.95; H, 8.99; N, 4.03. Found: C, 64.04; H, 9.06; N, 3.99.

(*E*)-5-*O*-Desosaminyl-3-*O*-tetrahydoropyranyl-6-*O*-methylerythronolide A 9-*O*-(phenylmethyl)oxime (7). To a solution of **5** (1.09 g, 1.57 mmol) in acetone (20 mL) was added acetic anhydride (0.24 g, 2.35 mmol) at room temperature. After stirring at room temperature for 19h, the reaction mixture was partitioned between ethyl acetate and saturated $NaHCO_3$ solution. The organic layer was washed with brine, dried over $MgSO_4$ and evaporated in vacuo to afford 1.1 g of crude 2′-acetate **6**, which was used without further purification. To a solution of **6** in CH_2Cl_2 (20 mL) was added 3,4-dihydro-2*H*-pyran (0.40 g, 4.76 mmol), *p*-toluenesulfonic acid monohydrate (0.45 g, 2.37 mmol), and molecular sieves 4A (2.0 g) at room temperature. After stirring at room temperature for 9h, the reaction mixture was filtered and the filtrate was partitioned between $CHCl_3$ and saturated $NaHCO_3$ solution. The organic layer was dried over $MgSO_4$ and evaporated in vacuo. The residue was dissolved in MeOH (20 mL) and the solution was stirred at room temperature for 20h. The reaction mixture was evaporated in vacuo, and the residue was purified by column chromatography eluting with MeOH/ $CHCl_3$/ 25% NH_4OH (15.5/ 1/ 0.1) to afford and 0.68 g (56%) of **7** as colorless amorphous, along with 179 mg (16%) of recovered starting material **5**.

7: IR (KBr) 1734, 1630 cm^{-1}. HRMS (ES) *m/z* 779.5060 $[(M+H)^+$; calcd for $C_{42}H_{71}N_2O_{11}$: 779.5058]. Anal. Calcd for $C_{42}H_{70}N_2O_{11}$: C, 64.76; H, 9.06; N, 3.60. Found: C, 64.68; H, 9.18; N, 3.54.

3-*O*-(2-Tetrahydoropyranyl-5-*O*-desosaminyl-6-*O*-methylerythronolide A (3f). A mixture of **7** (0.3 g, 0.39 mmol) and 10% palladium carbon (100 mg), ammonium formate (40 mg, 0.63 mmol), and 99% formic acid (0.12 mL, 3.13 mmol) in MeOH (3 mL) was stirred at 50 °C for 0.5h. After removal of the insoluble by filtration, evaporation of the solvent under reduced pressure afforded 244 mg of crude 3-*O*-(2-tetrahydropyranyl)-5-*O*-desosaminyl-6-*O*-methylerythronolide A 9-oxime. To a solution of the oxime (220 mg, 0.32 mmol) in EtOH (1 mL) and water (1.5 mL) was added sodium bisulfite (432 mg, 4.15 mmol), 99% formic acid (0.02 mL, 0.52 mmol). After refluxing for 30minutes, the mixture was adjusted to pH10 with 2M sodium hydroxide solution and extracted with ethyl acetate. The organic layer was dried over $MgSO_4$ and evaporated in vacuo. The residue was purified by column chromatography eluting with $CHCl_3$ / MeOH / 25% NH_4OH (21/ 1/ 0.1) to give 130 mg (51%) of **3f** as colorless amorphous: IR (KBr) 1735, 1694 cm^{-1}; HRMS (ES) *m/z* 674.4474 $[(M+H)^+$; calcd for

$C_{35}H_{64}NO_{11}$: 674.4479]. Anal. Calcd for $C_{35}H_{63}NO_{11}$: C, 62.38; H, 9.42; N, 2.08. Found: C, 62.31; H, 9.43; N, 1.96.

3-*O*-(2-Nitro)phenyl-5-*O*-desosaminyl-6-*O*-methylerythronolide A (3g). To a solution of 1.18g (2.0 mmol) of **1** in THF (15 mL) was added 1-fluoro-2-nitrobenzene (2.1 mL, 20.0 mmol) and 60% sodium hydride (0.28 g, 17.0 mmol) at 0 °C, and the reaction mixture was allowed to warm to room temperature. After stirring for 24h, the reaction mixture was partitioned between ethyl acetate and brine. The organic layer was dried over $MgSO_4$ and evaporated in vacuo. The residue was purified by column chromatography eluting with $CHCl_3$ / MeOH / 25% NH_4OH (95/ 5/ 0.5) to give 560mg (39%) of **3g** as slight yellow amorphous: IR (KBr) 1732, 1694 cm^{-1}; HRMS (ES) *m/z* 711.4058 [$(M+H)^+$; calcd for $C_{36}H_{59}N_2O_{12}$: 711.4068]. Anal. Calcd for $C_{36}H_{58}N_2O_{12}\cdot H_2O$: C, 59.32; H, 8.30; N, 3.84. Found: C, 59.02; H, 7.91; N, 3.70.

3-*O*-Phenylacetyl-5-*O*-desosaminyl-6-*O*-methylerythronolide A (3h). To a solution of **4** (1.26 g, 2.0 mmol) in pyridine (6.0 mL) was added 4-dimethylaminopyridine (122 mg, 1.0 mmol) and phenylacetyl chloride (0.66 mL, 5.0mmol) at 0 °C. After stirring at room temperature for 22 h, the reaction mixture was partitioned between ethyl acetate and brine. The organic layer was dried over $MgSO_4$ and evaporated in vacuo. The residue was purified by column chromatography eluting with acetone/ *n*-hexane/ Et_3N (4/ 10/ 0.05) to give 730 mg (49%) of 2′-Ac-**3h**. This acetate was dissolved in methanol (10 mL) and the solution was refluxed for 6h, and then evaporated in vacuo. The residue was diluted with ethyl acetate and washed with saturated $NaHCO_3$ solution, brine successively, dried over $MgSO_4$ and evaporated in vacuo. The residue was purified by column chromatography eluting with $CHCl_3$ / MeOH / 25% NH_4OH (20/ 1/ 0.1) to afford 490 mg (71%) of **3h** as slight yellow amorphous:IR (KBr) 1745, 1734, 1695cm^{-1}; HRMS (ES) *m/z* 708.4308 [$(M+H)^+$; calcd for $C_{38}H_{62}NO_{11}$: 708.4323]. Anal. Calcd for $C_{38}H_{61}NO_{11}$: C, 64.47; H, 8.69; N, 1.98. Found: C, 64.48; H, 8.76; N, 1.88.

3-*O*-Benzylsulfonyl-5-*O*-desosaminyl-6-*O*-methylerythronolide A (3i). To a solution of **4** (1.26 g, 2.0 mmol) in CH_2Cl_2 (10 mL) and pyridine (2 mL) was added benzylsulfonyl chloride (953 mg, 5.0 mmol) at 0 °C. After stirring at room temperature for 23h, the reaction mixture was partitioned between ethyl acetate and saturated $NaHCO_3$ solution. The organic layer was washed with saturated NH_4Cl solution and brine successively, dried over $MgSO_4$ and evaporated in vacuo. The residue was purified by column chromatography eluting with acetone/ *n*-hexane/ Et_3N (4/ 10/ 0.05) to give 1.37g (87%) of 2′-Ac-**3i** as colorless amorphous. The acetate (0.48 g, 0.61 mmol) was dissolved in MeOH (10 mL) and the solution was stirred at room temperature for 20.5h. After evaporation of the solvent, the residue was purified by column chromatography eluting with $CHCl_3$ / MeOH / 25% NH_4OH (21/ 1/ 0.1) to afford 210mg (46%) of **3i** as colorless amorphous: IR (KBr) 1738, 1693 cm^{-1}; HRMS (ES) *m/z* 744.3981 [$(M+H)^+$; calcd for $C_{50}H_{54}N_3OS$: 744.3988]. Anal. Calcd for $C_{37}H_{61}NO_{12}S \cdot {}^{3}/_{2}H_2O$: C, 57.64; H, 8.37; N, 1.82. Found: C, 57.69; H, 8.04; N, 1.79.

3-*O*-(4-Nitrophenyl)acetyl-5-*O*-desosaminyl-6-*O*-methylerythronolide A (3j). 2′-Acetate of the title compound was prepared from compound **4** (5.0 g, 7.91 mmol) and 4-nitrophenylacetic acid (4.30 g, 23.7 mmol) by the same procedures as described for **3b**. Purification by column chromatography eluting with acetone/ *n*-hexane/ Et_3N (6/ 10/ 0.2) afforded 5.03 g (80%) of 2′-*O*-acetyl-**3j** as light brown amorphous. A solution of this product in MeOH (50 mL) was stirred at room temperature for 15h, and evaporated in vacuo. The residue was crystallized from isopropylether to afford 3.86 g (81%) of **3j** as colorless powder: mp 157–159 °C; IR (KBr) 1742, 1732, 1694 cm^{-1}; HRMS (ES) *m/z* 753.4189 [$(M+H)^+$; calcd for $C_{38}H_{61}N_2O_{13}$: 753.4174]. Anal. Calcd for $C_{38}H_{60}N_2O_{13} \cdot {}^{1}/_{2}H_2O$: C, 59.90; H, 8.07; N, 3.68. Found: C, 59.79; H, 7.97; N, 3.70.

3-*O*-(4-Nitro)benzoyl-5-*O*-desosaminyl-6-*O*-methylerythronolide A (3k). 2′-Acetate of the title compound was prepared from compound **4** (5.0 g, 7.91 mmol) and 4-nitrobenzoic acid (3.97 g, 23.7 mmol) by the same procedures as described for **3b**. Purification of the crude product by column chromatography eluting with acetone/ *n*-hexane/ Et_3N (6/ 10/ 0.2) afforded to 6.03 g (98%) of 2′-Ac-**3k** as slight yellow amorphous. This product in MeOH (50 mL) was stirred at room temperature for 15h, and evaporated in vacuo. The residue was purified by column chromatography eluting with acetone/ *n*-hexane/ Et_3N (6/ 10/ 0.2) to afford 5.25 g (92%) of **3i** as slight yellow amorphous: IR (KBr) 1740, 1694, 1610 cm^{-1}; HRMS (ES) *m/z* 739.4006 [$(M+H)^+$; calcd for $C_{37}H_{59}N_2O_{13}$: 739.4017]. Anal. Calcd for $C_{37}H_{58}N_2O_{13}$: C, 60.15; H, 7.91; N, 3.79. Found: C, 60.05; H, 8.03; N, 3.63.

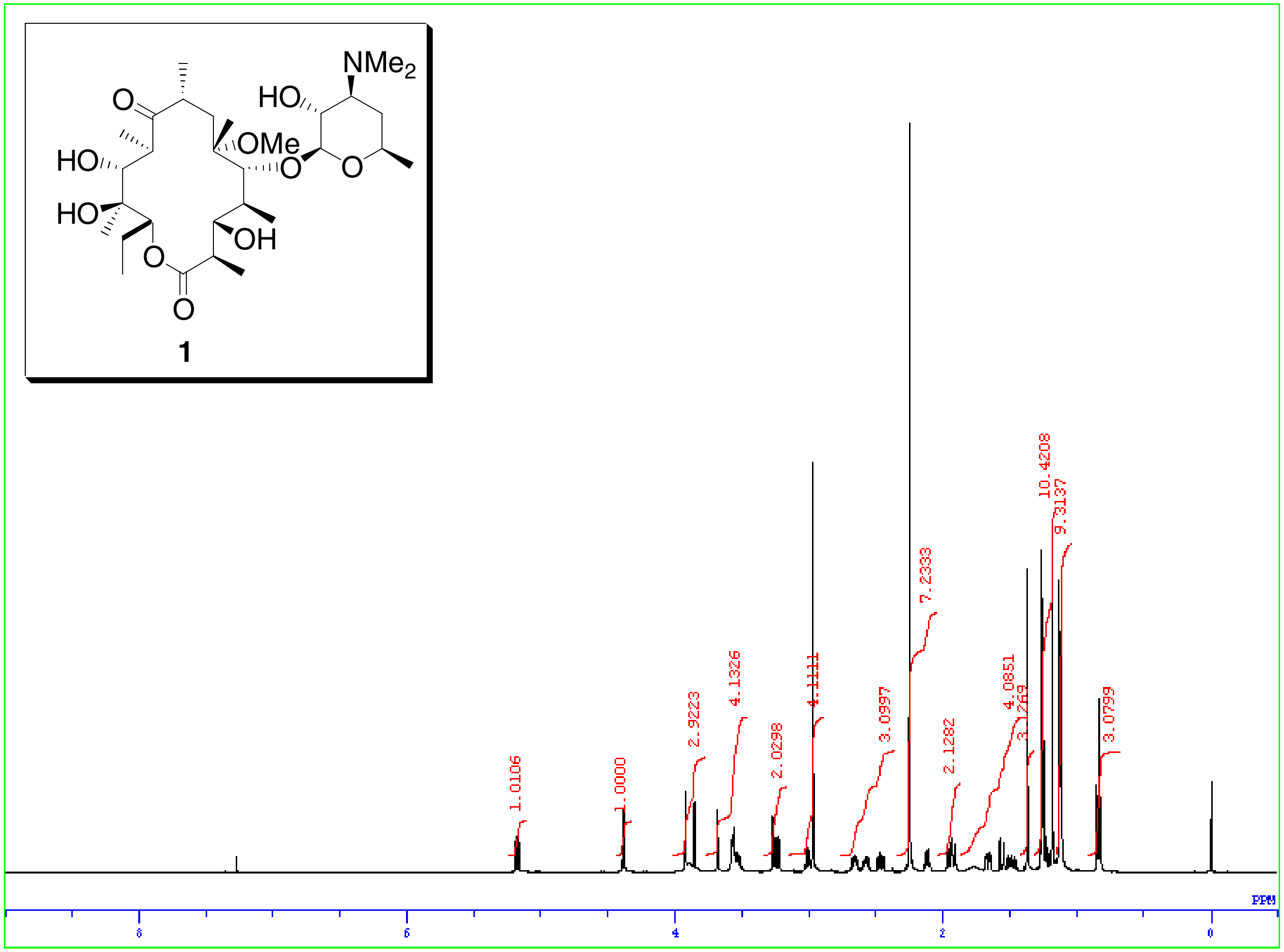

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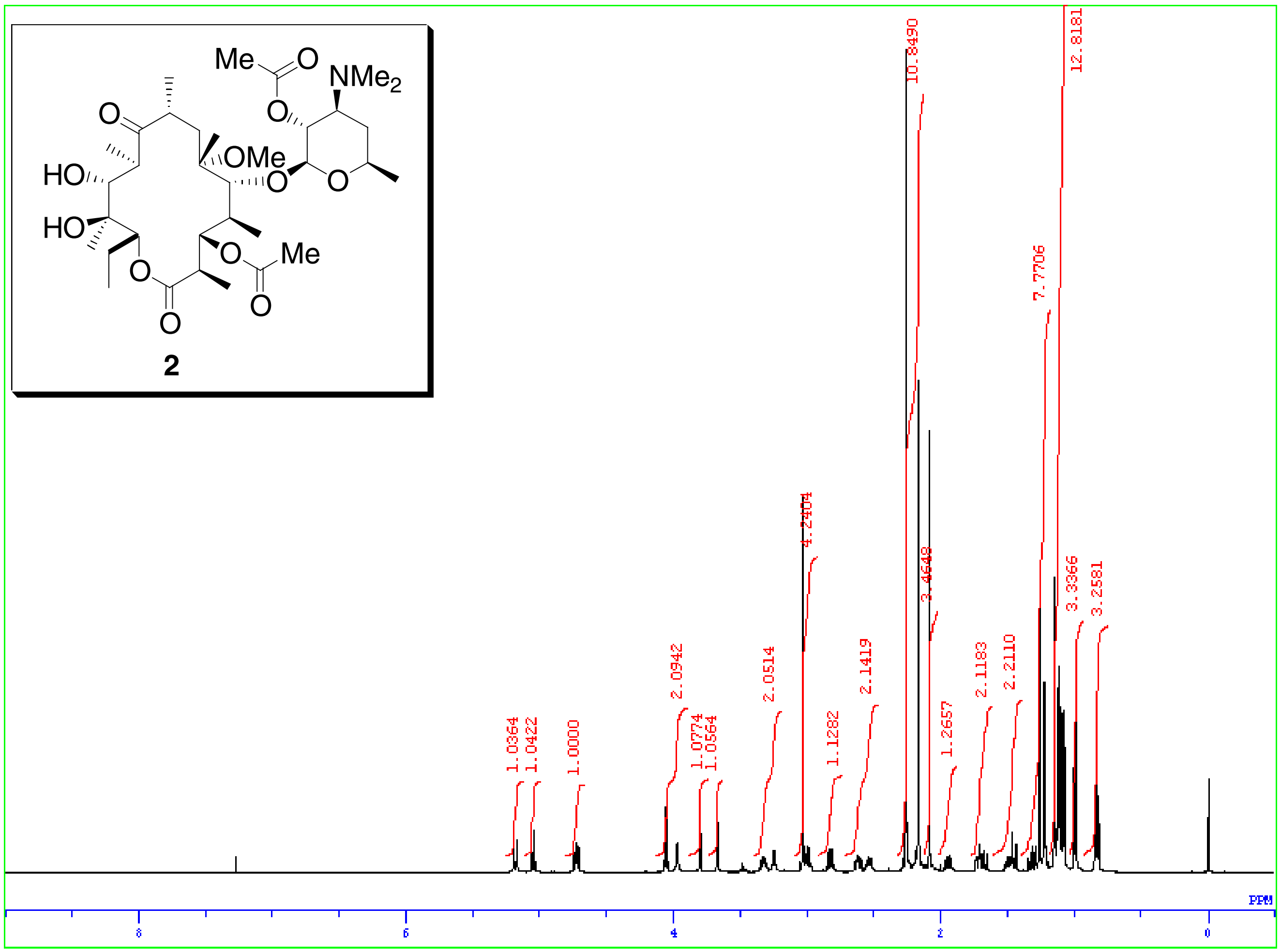
Table 1. Proton and carbon assignments of compound **1**.

500MHz ^{1}H NMR data

	δ (ppm)	peak	J (Hz)
C_2-H	2.66	m	-
2-Me	1.26	m	-
C_3-H	3.50 - 3.58	m	-
C_4-H	2.12	dq	7.3
4-Me	1.13	m	-
C_5-H	3.69	d	1.8
6-Me	1.37	s	-
6-OMe	2.97	s	-
C_7-H	1.56 1.90 - 1.96	dd m	4.6, 1.8 -
C_8-H	2.58	m	-
8-Me	1.13	m	-
C_{10}-H	3.01	m	-
10-Me	1.13	m	-
C_{11}-H	3.86	d	1.2
12-Me	1.18	s	-
C_{13}-H	5.18	dd	11.0, 2.4
C_{14}-H	1.49 1.90 - 1.96	m m	- -
C_{15}-H	0.84	t	7.6
$C_{1'}$-H	4.38	d	7.3
$C_{2'}$-H	3.24	dd	10.4, 7.3
$C_{3'}$-H	2.47	ddd	12.2, 10.4, 4.3
$C_{3'}$-NMe_2	2.25	s	-
$C_{4'}$-H	1.20 - 1.28 1.67	m dq	- 12.2, 1.8, 1.8, 1.8
$C_{5'}$	3.50 - 3.58	m	-
$C_{5'}$-Me	1.26	m	-
OH	3.27 3.50 - 3.58 3.89 3.92	s m br s	- - - -

75MHz ^{13}C NMR data

	δ (ppm)
C_1	175.0
C_2	44.6
C_2-Me	15.2
C_3	79.0
C_4	35.9
C_4-Me	8.2
C_5	88.5
C_6	78.0
C_6-Me	18.8
C_6-OMe	49.5
C_7	38.7
C_8	45.5
C_8-Me	17.7
C_9	220.7
C_{10}	37.5
C_{10}-Me	12.6
C_{11}	69.8
C_{12}	74.2
C_{12}-Me	16.2
C_{13}	76.6
C_{14}	21.4
C_{15}	10.4
$C_{1'}$	106.8
$C_{2'}$	70.7
$C_{3'}$	65.7
$C_{3'}$-NMe_2	40.2
$C_{4'}$	28.0
$C_{5'}$	70.3
$C_{5'}$-Me	21.2



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IRNUC	1H
CTEMP	25.6 c
SLVNT	CDCL3
EXREF	0.00 ppm
BF	1.00 Hz
RGAIN	16

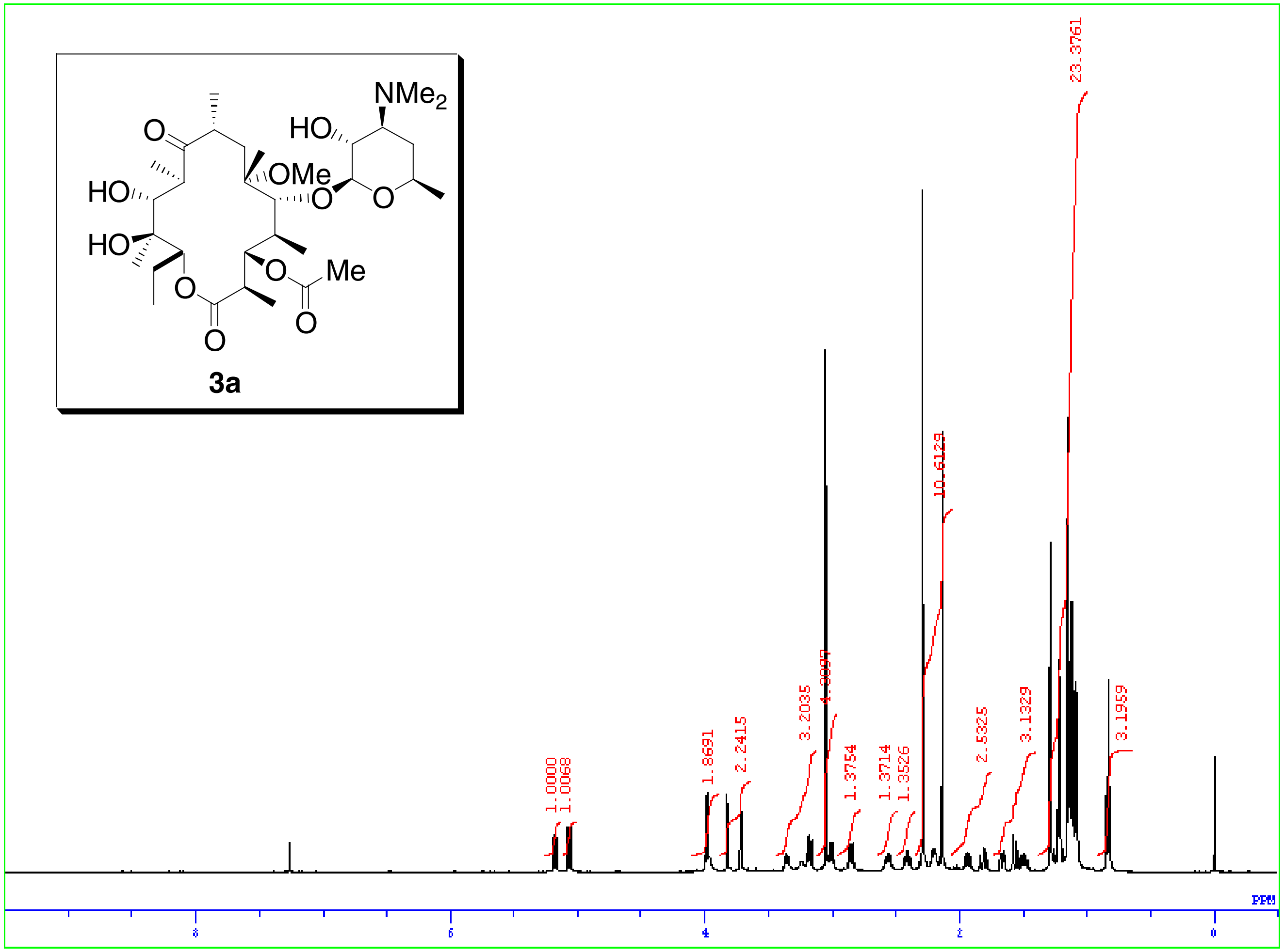
Table 2. Proton and carbon assignments of compound **2**.

500MHz ^{1}H NMR data

	δ (ppm)	peak	J (Hz)
C_2-H	2.83	m	-
2-Me	1.08	d	6.7
C_3-H	5.05	d	11.0
C_4-H	2.21 - 2.14	m	-
4-Me	0.99	d	7.3
C_5-H	3.67	d	3.1
6-Me	1.26	s	-
6-OMe	3.03	s	-
C_7-H	1.66 - 1.74 1.45	m dd	- 14.7, 1.2
C_8-H	2.54	m	-
8-Me	1.11	d	7.3
C_{10}-H	2.99	m	-
10-Me	1.12	d	6.7
C_{11}-H	3.80	d	1.2
12-Me	1.15	s	-
C_{13}-H	5.18	dd	11.0, 2.4
C_{14}-H	1.94 1.46 - 1.52	m m	- -
C_{15}-H	0.83	t	7.3
$C_{1'}$-H	4.06	d	7.3
$C_{2'}$-H	4.73	dd	10.4, 7.3
$C_{3'}$-H	2.62	m	-
$C_{3'}$-NMe_2	2.26	m	-
$C_{4'}$-H	1.66 - 1.74 1.27 – 1.34	m m	- -
$C_{5'}$	3.33	m	-
$C_{5'}$-Me	1.23	d	6.1
OH	3.25 3.97	br br	- -
$C_{2'}$-$COCH_3$	2.08	s	-
C_3-$COCH_3$	2.17	s	-

75MHz ^{13}C NMR data

	δ (ppm)
C_1	173.6
C_2	42.7
C_2-Me	15.2
C_3	77.8
C_4	35.8
C_4-Me	8.7
C_5	79.8
C_6	77.9
C_6-Me	19.3
C_6-OMe	50.1
C_7	38.3
C_8	45.3
C_8-Me	17.9
C_9	220.7
C_{10}	37.3
C_{10}-Me	12.5
C_{11}	69.5
C_{12}	74.2
C_{12}-Me	16.1
C_{13}	77.0
C_{14}	21.2
C_{15}	10.4
$C_{1'}$	100.6
$C_{2'}$	71.3
$C_{3'}$	63.5
$C_{3'}$-NMe_2	40.6
$C_{4'}$	30.7
$C_{5'}$	69.3
$C_{5'}$-Me	20.9
$C_{3'}$-$COCH_3$	21.2
$C_{2'}$-$COCH_3$	21.4
$C_{2'}$-$COCH_3$	169.8
$C_{3'}$-$COCH_3$	170.2

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PW1             5.9 us
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CTEMP          24.3 c
SLVNT   CDCL3
EXREF          0.00 ppm
BF             1.00 Hz
RGAIN            19
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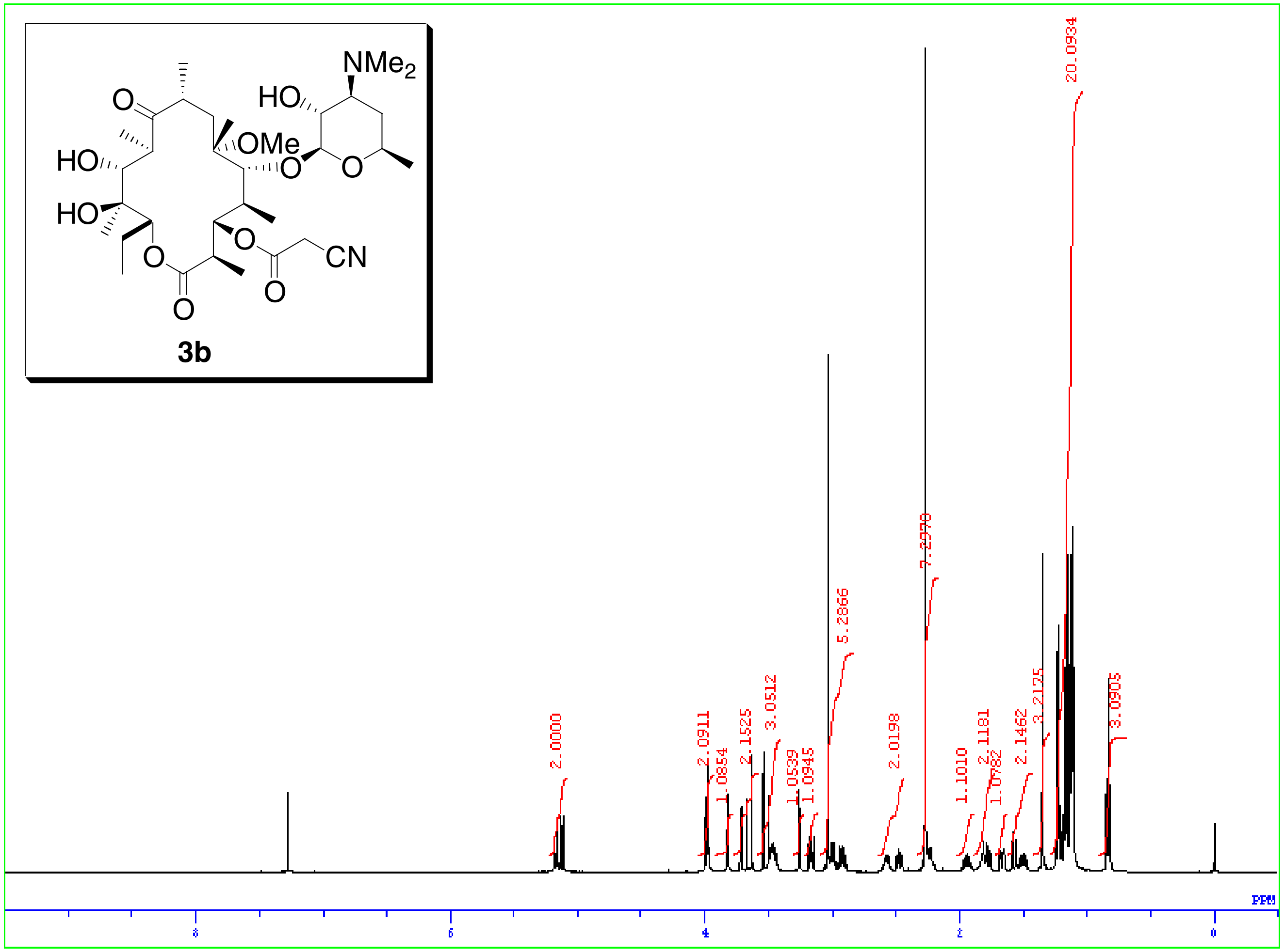
Table 3. Proton and carbon assignments of compound **3a**.

500MHz ^{1}H NMR data

	δ (ppm)	peak	J (Hz)
C_2-H	2.86	m	-
2-Me	1.08	d	6.7
C_3-H	5.07	d	11.0
C_4-H	2.21	m	-
4-Me	1.15	d	7.9
C_5-H	3.72	d	3.1
6-Me	1.29	s	-
6-OMe	3.05	s	-
C_7-H	1.57 1.81	dd dd	14.7, 11.6 14.7, 1.2
C_8-H	2.56	m	-
8-Me	1.11	d	7.3
C_{10}-H	3.01	m	-
10-Me	1.13	d	7.3
C_{11}-H	3.83	d	1.2
12-Me	1.16	s	-
C_{13}-H	5.18	dd	11.0, 1.8
C_{14}-H	1.50 1.94	m m	- -
C_{15}-H	0.84	t	7.3
$C_{1'}$-H	3.99	d	7.3
$C_{2'}$-H	3.18	dd	7.3
$C_{3'}$-H	2.41	m	-
$C_{3'}$-NMe_2	2.29	s	-
$C_{4'}$-H	1.16 – 1.23 1.67	m dq	- 12.2, 1.8, 1.8, 1.8
$C_{5'}$	3.36	m	-
$C_{5'}$-Me	1.22	d	6.1
OH	3.24 3.97	br br	- -
C_3-COCH_3	2.14	s	-

75MHz ^{13}C NMR data

	δ (ppm)
C_1	173.7
C_2	42.8
C_2-Me	15.2
C_3	77.9
C_4	36.0
C_4-Me	8.9
C_5	80.9
C_6	77.9
C_6-Me	19.3
C_6-OMe	50.2
C_7	38.7
C_8	45.4
C_8-Me	18.0
C_9	220.7
C_{10}	37.3
C_{10}-Me	12.5
C_{11}	69.5
C_{12}	74.2
C_{12}-Me	16.1
C_{13}	77.0
C_{14}	21.2
C_{15}	10.4
$C_{1'}$	103.1
$C_{2'}$	70.4
$C_{3'}$	66.1
$C_{3'}$-NMe_2	40.3
$C_{4'}$	28.5
$C_{5'}$	69.7
$C_{5'}$-Me	21.1
C_3-COCH	21.3
C_3-COCH	170.5



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IRNUC 1H
CTEMP 26.0 c
SLVNT CDCL3
EXREF 0.00 ppm
BF 1.00 Hz
RGAIN 16

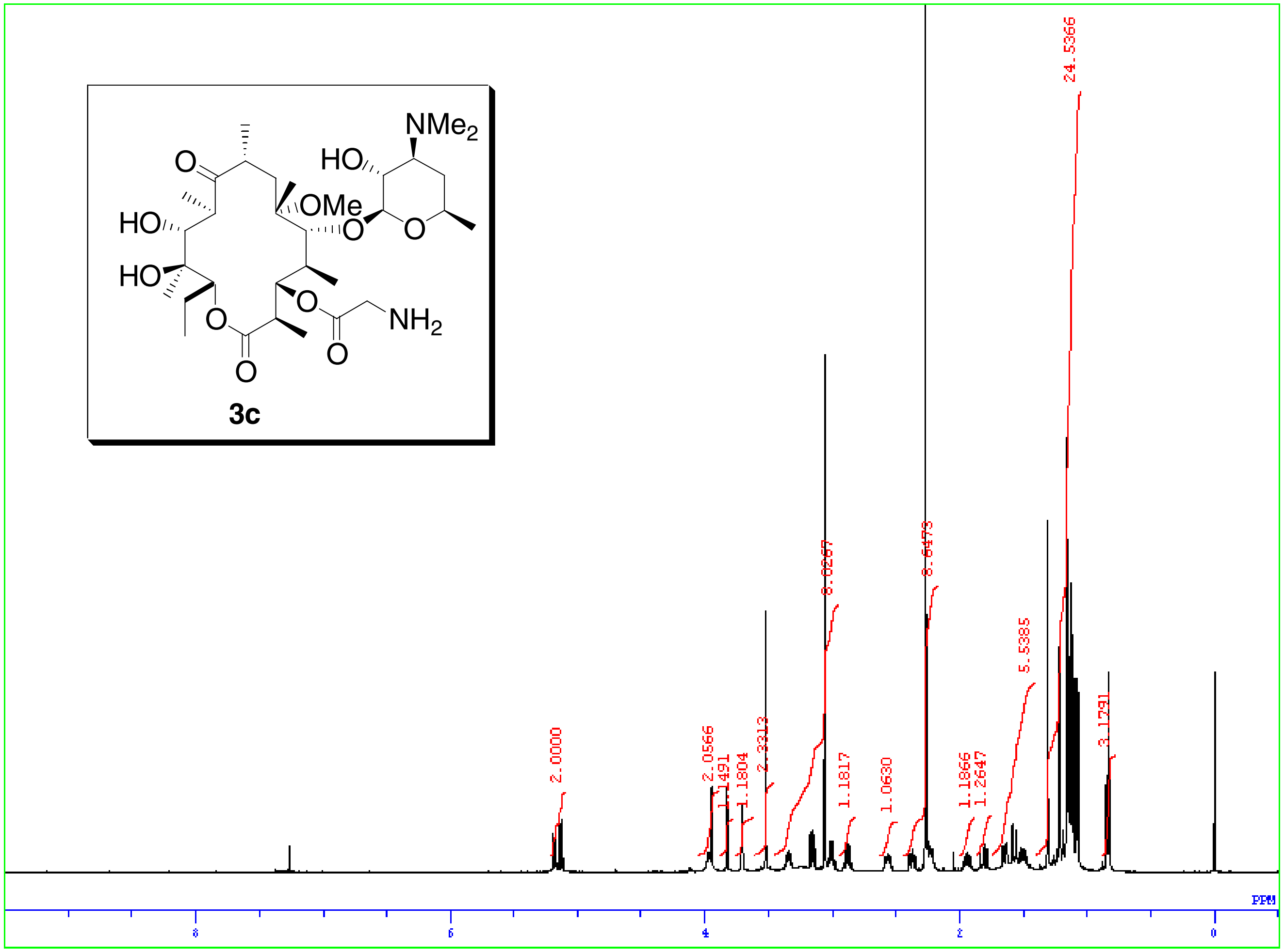
Table 4. Proton and carbon assignments of compound **3b**.

500MHz ^{1}H NMR data

	δ (ppm)	peak	J (Hz)
C_2-H	2.93	m	-
2-Me	1.11	d	7.3
C_3-H	5.13	d	11.0
C_4-H	2.23	m	-
4-Me	1.17	d	7.3
C_5-H	3.72	d	3.1
6-Me	1.35	s	-
6-OMe	3.04	s	-
C_7-H	1.79 1.57	dd dd	14.7, 11.6 14.7, 1.8
C_8-H	2.57	m	-
8-Me	1.12	d	7.3
C_{10}-H	3.00	m	-
10-Me	1.13	d	7.3
C_{11}-H	3.82	d	1.2
12-Me	1.16	s	-
C_{13}-H	5.18	dd	11.0, 2.4
C_{14}-H	1.95 1.50	m m	- -
C_{15}-H	0.84	t	7.3
$C_{1'}$-H	3.99	d	7.3
$C_{2'}$-H	3.17	dd	10.4, 7.3
$C_{3'}$-H	2.48	m	-
$C_{3'}$-NMe_2	2.27	s	-
$C_{4'}$-H	1.20 – 1.25 1.67	m dq	- 12.8,1.8,1.8,1.8
$C_{5'}$	3.48	m	-
$C_{5'}$-Me	1.23	d	6.1
OH	3.26 3.98	s s	- -
C_3-CO*CH_2*CN	3.52 3.65	d d	18.9 18.9

75MHz ^{13}C NMR data

	δ (ppm)
C_1	173.1
C_2	42.7
C_2-Me	15.2
C_3	81.7
C_4	36.4
C_4-Me	8.8
C_5	84.3
C_6	78.0
C_6-Me	19.4
C_6-OMe	49.9
C_7	38.7
C_8	45.2
C_8-Me	17.8
C_9	220.6
C_{10}	37.3
C_{10}-Me	12.4
C_{11}	69.5
C_{12}	74.1
C_{12}-Me	16.1
C_{13}	77.4
C_{14}	21.1
C_{15}	10.4
$C_{1'}$	105.1
$C_{2'}$	70.4
$C_{3'}$	65.9
$C_{3'}$-NMe_2	40.3
$C_{4'}$	28.1
$C_{5'}$	69.9
$C_{5'}$-Me	21.1
C_3-CO*CH_2*CN	25.0
C_3-$COCH_2$*CN*	113.1
C_3-*CO*CH_2CN	163.4



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POINT	32768
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SCANS	8
ACQTM	3.283 sec
PD	3.000 sec
PW1	6.4 us
IRNUC	1H
CTEMP	24.7 c
SLVNT	CDCL3
EXREF	0.00 ppm
BF	1.00 Hz
RGAIN	15

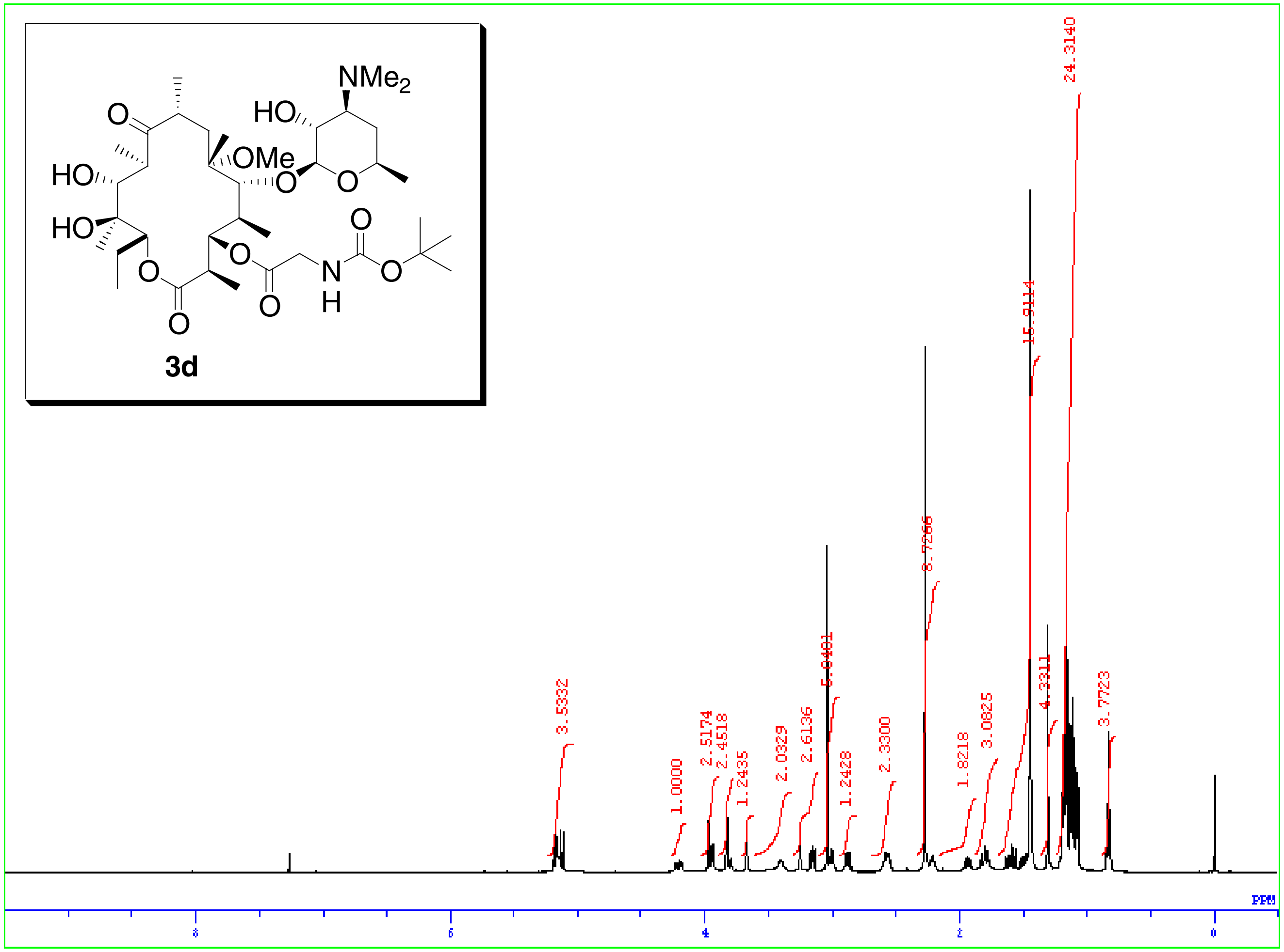
Table 5. Proton and carbon assignments of compound **3c**.

500MHz ^{1}H NMR data

	δ (ppm)	peak	J (Hz)
C_2-H	2.88	m	-
2-Me	1.08	d	6.7
C_3-H	5.13	d	11.0
C_4-H	2.20 – 2.27	m	-
4-Me	1.15	d	6.1
C_5-H	3.71	d	3.4
6-Me	1.31	s	-
6-OMe	3.06	s	-
C_7-H	1.81 1.57	dd dd	14.6, 11.9 14.6, 1.5
C_8-H	2.57	m	-
8-Me	1.12	d	7.9
C_{10}-H	3.01	m	-
10-Me	1.13	d	7.0
C_{11}-H	3.83	d	1.5
12-Me	1.16	s	-
C_{13}-H	5.19	dd	11.3, 2.1
C_{14}-H	1.95 1.50	m m	- -
C_{15}-H	0.84	t	7.3
C_{1}'-H	3.95	d	7.3
C_{2}'-H	3.16	dd	10.4, 7.3
C_{3}'-H	2.37	m	-
C_{3}'-NMe_2	2.27	s	-
C_{4}'-H	1.16 – 1.19 1.65	m dq	- 12.8,1.8,1.8, 1.8
C_{5}'	3.35	m	-
C_{5}'-Me	1.22	d	6.1
C_3-CO$CH_2$$NH_2$	3.53	s	-
OH	3.98	br	-

75MHz ^{13}C NMR data

	δ (ppm)
C_1	173.6
C_2	42.8
C_2-Me	15.2
C_3	78.7
C_4	36.2
C_4-Me	8.9
C_5	81.8
C_6	78.0
C_6-Me	19.3
C_6-OMe	50.1
C_7	38.7
C_8	45.4
C_8-Me	17.9
C_9	220.6
C_{10}	37.3
C_{10}-Me	12.5
C_{11}	69.5
C_{12}	74.2
C_{12}-Me	16.1
C_{13}	77.1
C_{14}	21.2
C_{15}	10.4
C_{1}'	103.7
C_{2}'	70.4
C_{3}'	66.1
C_{3}'-NMe_2	40.3
C_{4}'	28.4
C_{5}'	69.8
C_{5}'-Me	21.2
C_3-COCH_2NH	44.3
C_3-$CO$$CH_2$NH	174.0



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ACQTM 1.638 sec
PD 4.362 sec
PW1 5.9 us
IRNUC 1H
CTEMP 24.3 c
SLVNT CDCL3
EXREF 0.00 ppm
BF 1.00 Hz
RGAIN 18

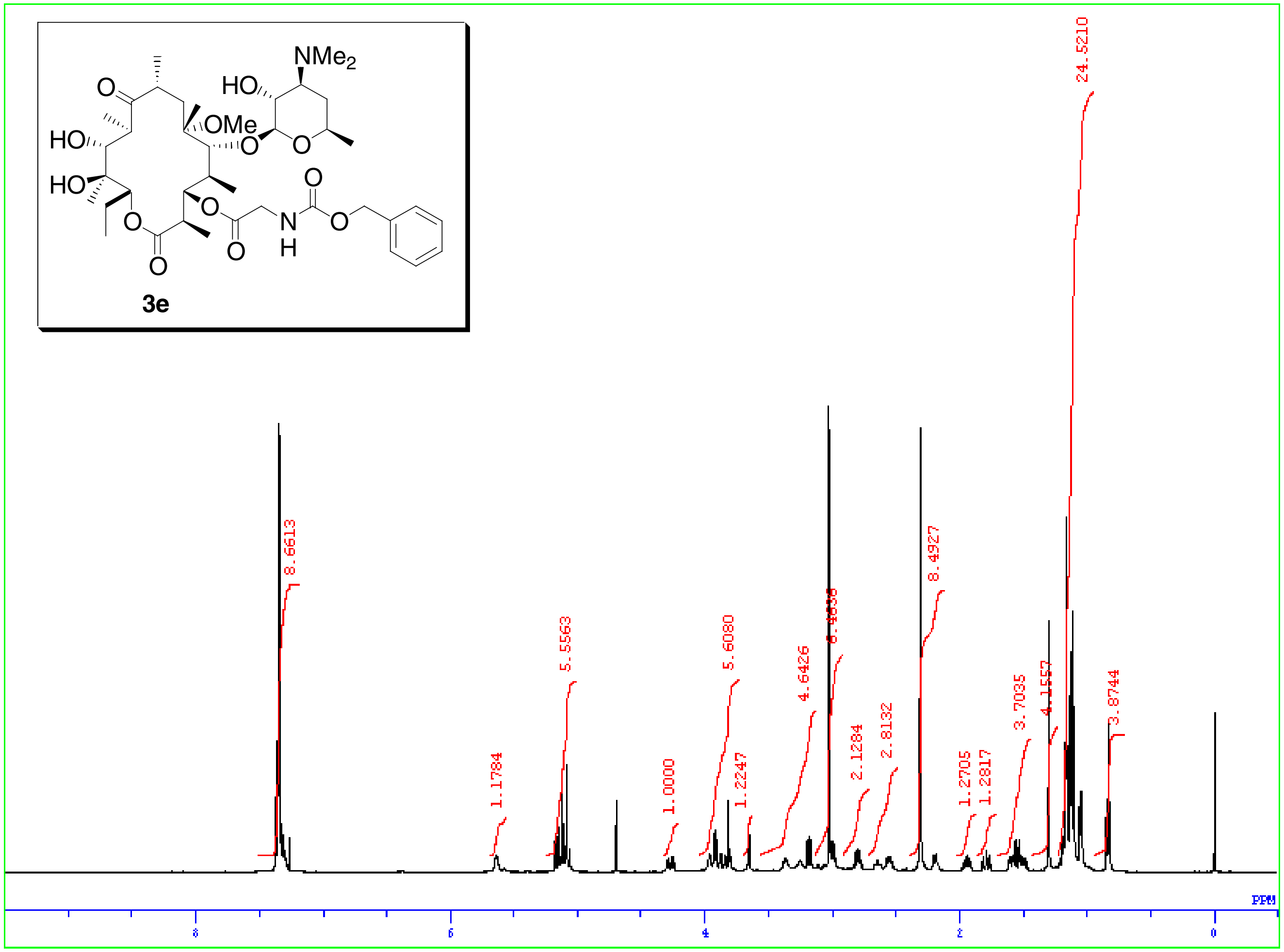
Table 6. Proton and carbon assignments of compound **3d**.

500MHz ^{1}H NMR data

	δ (ppm)	Peak	J (Hz)
C_2-H	2.88	m	-
2-Me	1.08	d	7.3
C_3-H	5.13	d	11.6
C_4-H	2.22	m	-
4-Me	1.17	d	5.5
C_5-H	3.68	d	3.1
6-Me	1.31	s	-
6-OMe	3.04	s	-
C_7-H	1.58 1.80	d dd	14.6 14.6, 12.2
C_8-H	2.53 – 2.62	m	-
8-Me	1.11	d	8.5
C_{10}-H	3.00	m	-
10-Me	1.13	d	6.7
C_{11}-H	3.83	s	-
12-Me	1.16	s	-
C_{13}-H	5.18	dd	11.6, 2.4
C_{14}-H	1.45 – 1.53 1.94	m m	- -
C_{15}-H	0.83	t	7.3
C_1'-H	3.94	d	7.3
C_2'-H	3.16	dd	10.4, 7.3
C_3'-H	2.53 – 2.62	m	-
C_3'-NMe_2	2.28	s	-
C_4'-H	1.16 – 1.22 1.63	m m	- -
C_5'	3.41	m	-
C_5'-Me	1.19	d	6.1
OH	3.26 3.98	br s s	- -
C_3-COCH_2NH-	4.21 3.79 – 3.83	dd m	18.3, 7.3 -
-$CO_2C(CH_3)_3$	1.45	s	-

75MHz ^{13}C NMR data

	δ (ppm)
C_1	173.5
C_2	42.9
C_2-Me	15.2
C_3	79.5
C_4	36.2
C_4-Me	8.9
C_5	82.3
C_6	78.0
C_6-Me	19.3
C_6-OMe	50.0
C_7	38.7
C_8	45.3
C_8-Me	17.9
C_9	220.7
C_{10}	37.3
C_{10}-Me	12.5
C_{11}	69.5
C_{12}	74.2
C_{12}-Me	16.1
C_{13}	77.2
C_{14}	21.2
C_{15}	10.4
C_1'	103.9
C_2'	70.5
C_3'	65.4
C_3'-NMe_2	40.2
C_4'	28.4
C_5'	69.5
C_5'-Me	21.1
-$CO_2C(CH_3)_3$	28.3
-$CO_2C(CH_3)_3$	79.9
C_3-COCH_2NH-	42.6
C_3-COCH$_2$NH-	170.4



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FREQU	9980.0 Hz
SCANS	8
ACQTM	3.283 sec
PD	3.000 sec
PW1	6.4 us
IRNUC	1H
CTEMP	24.0 c
SLVNT	CDCL3
EXREF	0.00 ppm
BF	1.00 Hz
RGAIN	15

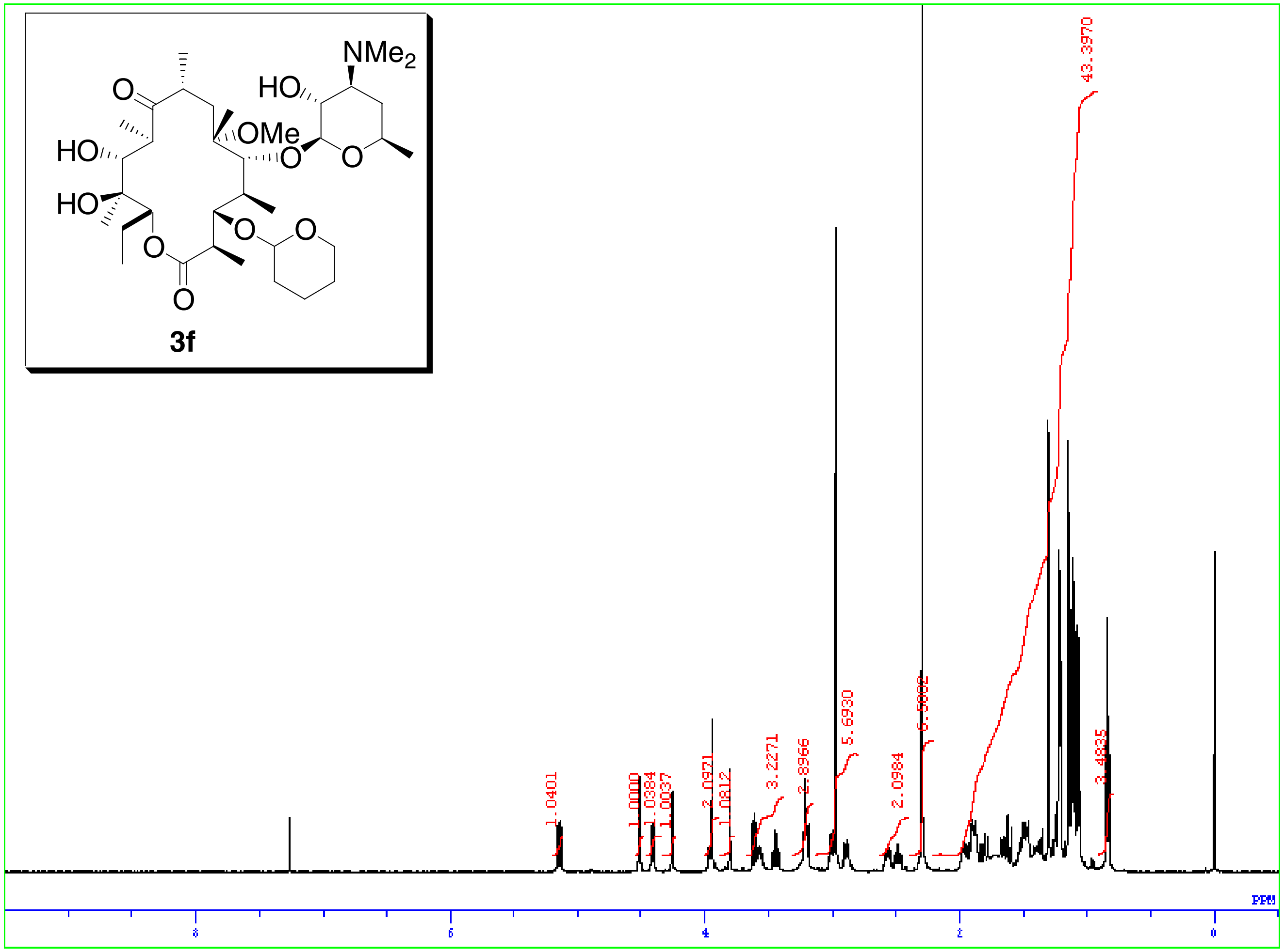
Table 7. Proton and carbon assignments of compound **3e**.

500MHz ^{1}H NMR data

	δ (ppm)	peak	J (Hz)
C_2-H	2.80	m	-
2-Me	1.05	d	6.7
C_3-H	5.10	d	10.7
C_4-H	2.19	m	-
4-Me	1.13	d	8.5
C_5-H	3.66	d	2.7
6-Me	1.30	s	-
6-OMe	3.03	s	-
C_7-H	1.55 1.79	dd dd	14.6, 1.2 14.6, 11.9
C_8-H	2.56	m	-
8-Me	1.11	d	7.3
C_{10}-H	3.00	m	-
10-Me	1.16	s	-
C_{11}-H	3.82	d	1.5
12-Me	0.84	t	7.3
C_{13}-H	5.17	dd	11.3, 2.4
C_{14} -H	1.51 1.95	m m	- -
C_{15}-H	0.84	t	7.3
$C_{1'}$-H	3.92	d	7.0
$C_{2'}$-H	3.18	dd	10.4, 7.3
$C_{3'}$-H	2.64	m	-
$C_{3'}$-NMe_2	2.31	s	-
$C_{4'}$-H	1.13 – 1.19 1.60	m m	- -
$C_{5'}$	3.37	m	-
$C_{5'}$-Me	1.17	d	4.9
OH	3.26 3.97	br br	- -
-CO_2*CH_2*Ph	5.08 5.14	d d	12.2
-CO_2CH_2*Ph*	7.31 – 7.37	m	-
-CH_2*NH*CO-	5.64	br t	-
-*CH_2*NHCO-	3.86 4.27	dd dd	18.6, 4.0 18.6, 7.3

75MHz ^{13}C NMR data

	δ (ppm)
C_1	173.5
C_2	42.9
C_2-Me	15.2
C_3	79.8
C_4	36.2
C_4-Me	8.9
C_5	83.2
C_6	78.0
C_6-Me	19.4
C_6-OMe	50.0
C_7	38.7
C_8	45.3
C_8-Me	17.9
C_9	220.7
C_{10}	37.3
C_{10}-Me	12.5
C_{11}	69.5
C_{12}	74.2
C_{12}-Me	16.1
C_{13}	77.1
C_{14}	21.2
C_{15}	10.4
$C_{1'}$	104.1
$C_{2'}$	70.3
$C_{3'}$	65.7
$C_{3'}$-NMe_2	40.0
$C_{4'}$	28.6
$C_{5'}$	69.2
$C_{5'}$-Me	21.1
C_3-CO*CH_2*NH-	43.1
C_3-*CO*CH_2NH-	170.0
-CO_2*CH_2*Ph	67.0
-*CO_2*CH_2Ph	156.3
-CO_2CH_2*Ph*	128.1 128.2 128.5 136.3



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PD	3.000 sec
PW1	6.4 us
IRNUC	1H
CTEMP	24.1 c
SLVNT	CDCL3
EXREF	0.00 ppm
BF	1.00 Hz
RGAIN	17

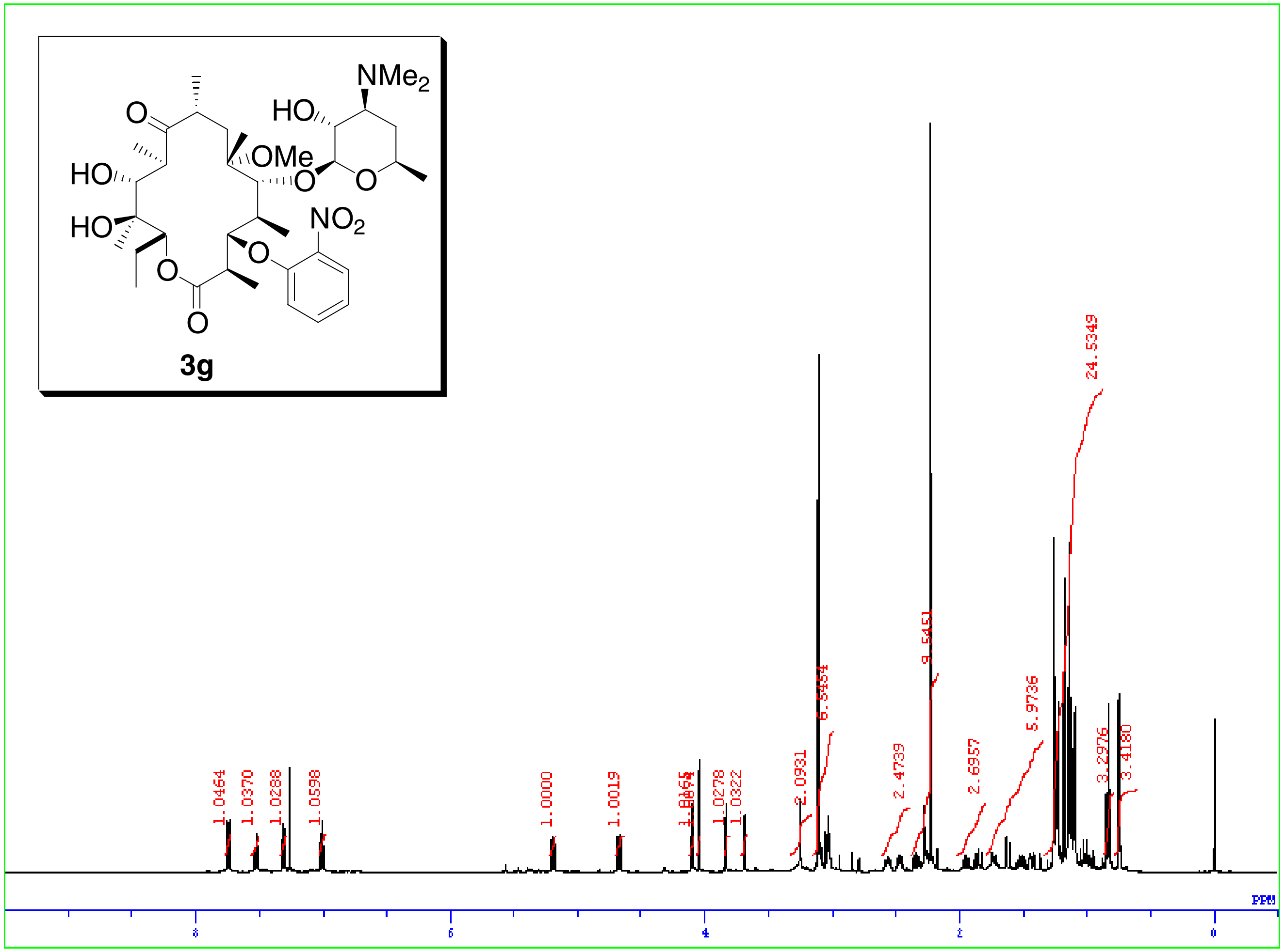
Table 8. Proton and carbon assignments of compound **3f**.

500MHz ^{1}H NMR data

	δ (ppm)	peak	J (Hz)
C_2-H	2.89	m	-
2-Me	1.22	d	7.0
C_3-H	3.62	d	11.3
C_4-H	1.88 – 1.99	m	-
4-Me	1.07	d	7.6
C_5-H	4.23	d	4.0
6-Me	1.31	s	-
6-OMe	2.98	s	-
C_7-H	1.61 1.81	dd dd	14.6, 1.5 14.6, 12.2
C_8-H	2.57	m	-
8-Me	1.10	d	7.3
C_{10}-H	3.01	m	-
10-Me	1.12	d	7.0
C_{11}-H	3.81	d	1.2
12-Me	1.15	s	-
C_{13}-H	5.14	dd	11.3, 2.4
C_{14}-H	1.35 – 1.56 1.88 – 1.99	m m	- -
C_{15}-H	0.84	t	7.3
C_1´-H	4.52	d	7.6
C_2´-H	3.20	dd	10.6, 7.6
C_3´-H	2.49	ddd	12.2, 10.4, 4.3
C_3´-NMe_2	2.30	s	-
C_4´-H	1.17-1.27 1.66	m m	- -
C_5´	3.58	m	-
C_5´-Me	1.22	d	6.4
THP(C_1-H)	4.41	dd	9.4, 1.2
THP(C_2-H)	1.88 – 1.99	m	-
THP(C_3-H)	1.35 - 1.56 1.88 – 1.99	m m	- -
THP(C_4-H)	1.35 – 1.56	m	-
THP(C_5-H)	3.45 3.95 – 3.97	ddd m	11.6, 11.6, 2.4 -
OH	3.22 3.95	br s s	- -

75MHz ^{13}C NMR data

	δ (ppm)
C_1	175.3
C_2	44.4
C_2-Me	15.5
C_3	80.9
C_4	36.7
C_4-Me	9.1
C_5	79.2
C_6	78.0
C_6-Me	19.5
C_6-OMe	50.0
C_7	38.8
C_8	45.5
C_8-Me	18.0
C_9	221.1
C_{10}	37.3
C_{10}-Me	12.5
C_{11}	69.4
C_{12}	74.3
C_{12}-Me	16.1
C_{13}	76.6
C_{14}	22.8
C_{15}	10.5
C_1´	101.9
C_2´	70.8
C_3´	66.0
C_3´-NMe_2	40.4
C_4´	29.0
C_5´	68.7
C_5´-Me	21.2
THP(C_1)	102.6
THP(C_2)	31.4
THP(C_3)	21.2
THP(C_4)	25.4
THP(C_5)	66.3



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ACQTM	1.638 sec
PD	4.362 sec
PW1	5.9 us
IRNUC	1H
CTEMP	28.8 c
SLVNT	CDCL3
EXREF	0.00 ppm
BF	1.00 Hz
RGAIN	18

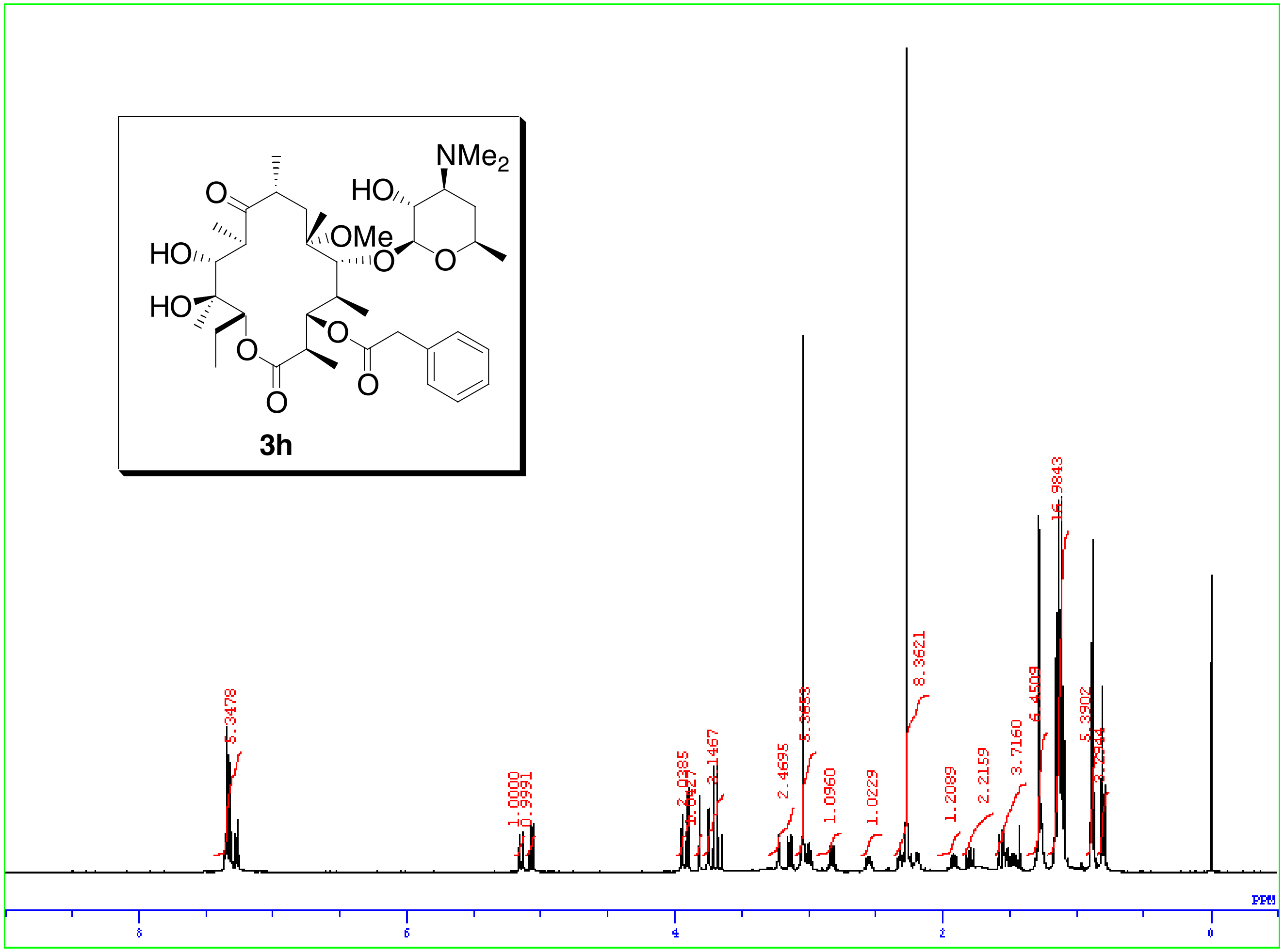
Table 9. Proton and carbon assignments of compound **3g**.

500MHz ^{1}H NMR data

	δ (ppm)	peak	J (Hz)
C_2-H	3.08 – 3.11	m	-
2-Me	1.10	d	7.3
C_3-H	4.68	d	10.4
C_4-H	2.25 – 2.28	m	-
4-Me	1.24	d	7.3
C_5-H	3.69	d	3.7
6-Me	1.26	s	-
6-OMe	3.11	s	-
C_7-H	1.62 1.85	dd dd	14.7, 1.2 14.7, 12.2
C_8-H	2.57	m	-
8-Me	1.13	d	7.3
C_{10}-H	3.02 – 3.05	m	-
10-Me	1.15	d	6.7
C_{11}-H	3.84	d	1.8
12-Me	1.18	s	-
C_{13}-H	5.19	dd	11.0, 2.4
C_{14}-H	1.52 1.96	m m	- -
C_{15}-H	0.84	t	7.3
C_1´-H	4.10	d	7.3
C_2´-H	3.02 – 3.05	m	-
C_3´-H	2.34	m	-
C_3´-NMe_2	2.23	s	-
C_4´-H	1.02 1.43	m dq	12.8, 1.8, 1.8, 1.8
C_5´	2.47	m	-
C_5´-Me	0.75	d	6.1
OH	3.26 4.05	s s	- -
-Ph(C_3-H)	7.75	dd	7.9, 1.8
-Ph(C_4-H)	7.01	t	7.9
-Ph(C_5-H)	7.53	m	-
-Ph(C_6-H)	7.31	d	8.6

75MHz ^{13}C NMR data

	δ (ppm)
C_1	174.4
C_2	44.0
C_2-Me	15.4
C_3	82.5
C_4	37.0
C_4-Me	8.3
C_5	78.6
C_6	78.2
C_6-Me	19.3
C_6-OMe	50.2
C_7	38.6
C_8	45.5
C_8-Me	17.8
C_9	220.9
C_{10}	37.3
C_{10}-Me	12.5
C_{11}	69.6
C_{12}	74.2
C_{12}-Me	16.1
C_{13}	77.3
C_{14}	21.1
C_{15}	10.4
C_1´	101.3
C_2´	70.4
C_3´	65.2
C_3´-NMe_2	40.2
C_4´	28.4
C_5´	69.0
C_5´-Me	20.8
-Ph(C_1)	152.2
-Ph(C_2)	140.2
-Ph(C_3)	125.4
-Ph(C_4)	120.1
-Ph(C_5)	133.6
-Ph(C_3)	113.4



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FREQU	9980.0 Hz
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ACQTM	3.283 sec
PD	3.000 sec
PW1	6.4 us
IRNUC	1H
CTEMP	25.0 c
SLVNT	CDCL3
EXREF	0.00 ppm
BF	1.00 Hz
RGAIN	17

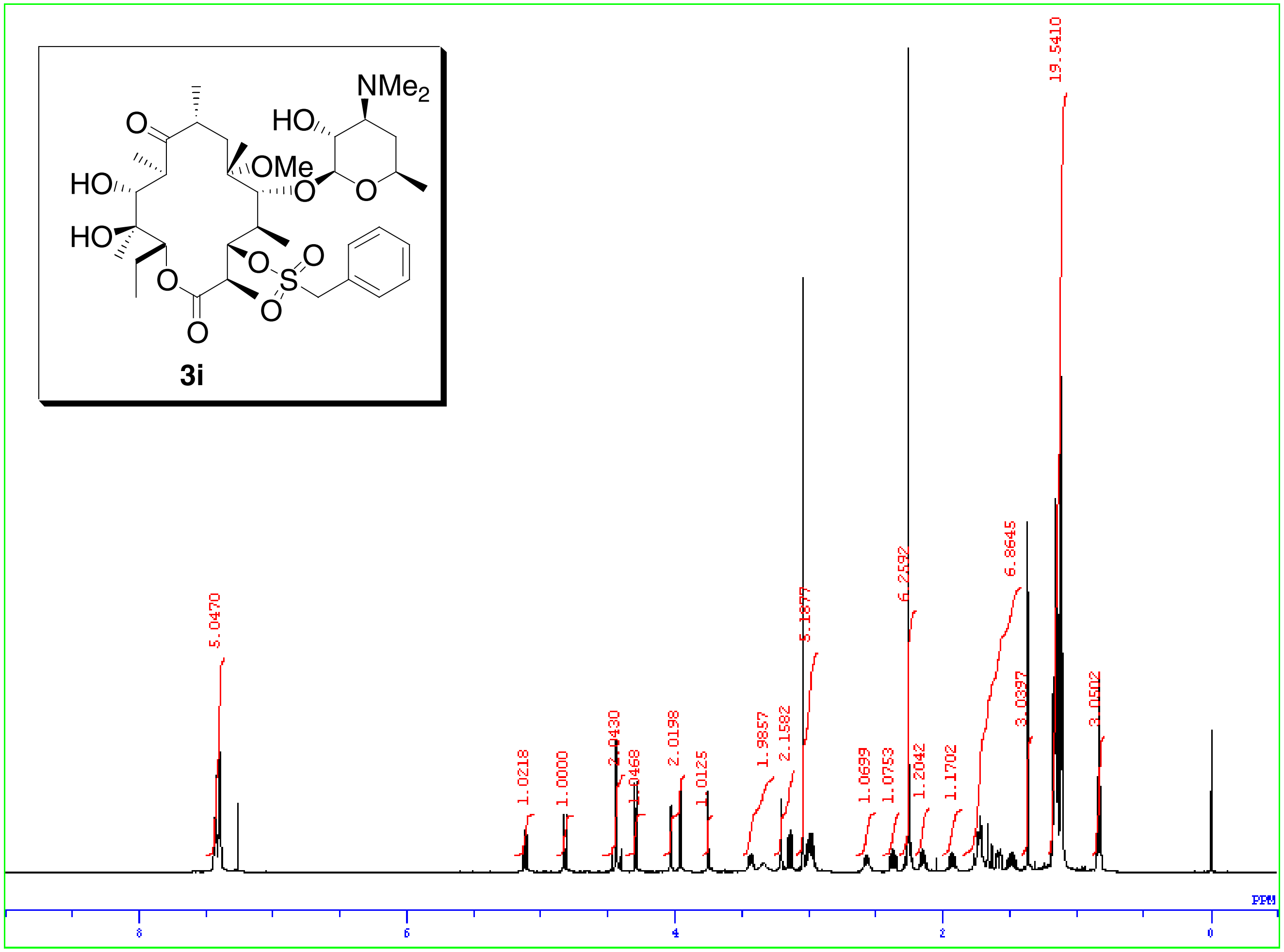
Table 10. Proton and carbon assignments of compound **3h**.

500MHz ^{1}H NMR data

	δ (ppm)	peak	J (Hz)
C_2-H	2.83	m	-
2-Me	0.89	d	6.4
C_3-H	5.07	d	11.3
C_4-H	2.20	m	-
4-Me	1.16	d	7.6
C_5-H	3.75	d	3.7
6-Me	1.29	s	-
6-OMe	3.05	s	-
C_7-H	1.80 1.57	dd dd	14.9, 11.6 14.9, 1.5
C_8-H	2.56	m	-
8-Me	1.11	d	7.3
C_{10}-H	2.98 – 3.08	m	-
10-Me	1.12	d	7.0
C_{11}-H	3.82	d	1.5
12-Me	1.15	s	-
C_{13}-H	5.15	dd	11.3, 2.4
C_{14} -H	1.41 – 1.55 1.92	m m	- -
C_{15}-H	0.81	t	7.3
$C_{1'}$-H	3.91	d	7.3
$C_{2'}$-H	3.14	dd	10.4, 7.3
$C_{3'}$-H	2.32	m	-
$C_{3'}$-NMe_2	2.27	s	-
$C_{4'}$-H	1.07 – 1.19 1.41 – 1.55	m m	- -
$C_{5'}$	2.98 – 3.08	m	-
$C_{5'}$-Me	1.13	d	6.1
OH	3.23 3.95	br s br s	- -
-CO*CH*$_2$Ph	3.67 3.73	d d	15.2 15.2
-$COCH_2$*Ph*	7.26 – 7.36	m	-

75MHz ^{13}C NMR data

	δ (ppm)
C_1	173.6
C_2	43.0
C_2-Me	15.0
C_3	78.5
C_4	36.2
C_4-Me	9.0
C_5	81.1
C_6	78.0
C_6-Me	19.4
C_6-OMe	50.1
C_7	38.7
C_8	45.3
C_8-Me	18.0
C_9	220.6
C_{10}	37.3
C_{10}-Me	12.5
C_{11}	69.4
C_{12}	74.2
C_{12}-Me	16.1
C_{13}	77.0
C_{14}	21.1
C_{15}	10.4
$C_{1'}$	103.3
$C_{2'}$	70.5
$C_{3'}$	65.8
$C_{3'}$-NMe_2	40.3
$C_{4'}$	28.3
$C_{5'}$	69.4
$C_{5'}$-Me	21.0
C_3-CO*CH*$_2$Ph	41.5
C_3-*CO*CH_2Ph	171.1
C_3-$COCH_2$*Ph*	127.3 128.6 129.5 133.6



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FREQU	10000.0 Hz
SCANS	8
ACQTM	1.638 sec
PD	4.362 sec
PW1	5.9 us
IRNUC	1H
CTEMP	26.3 c
SLVNT	CDCL3
EXREF	0.00 ppm
BF	1.00 Hz
RGAIN	19

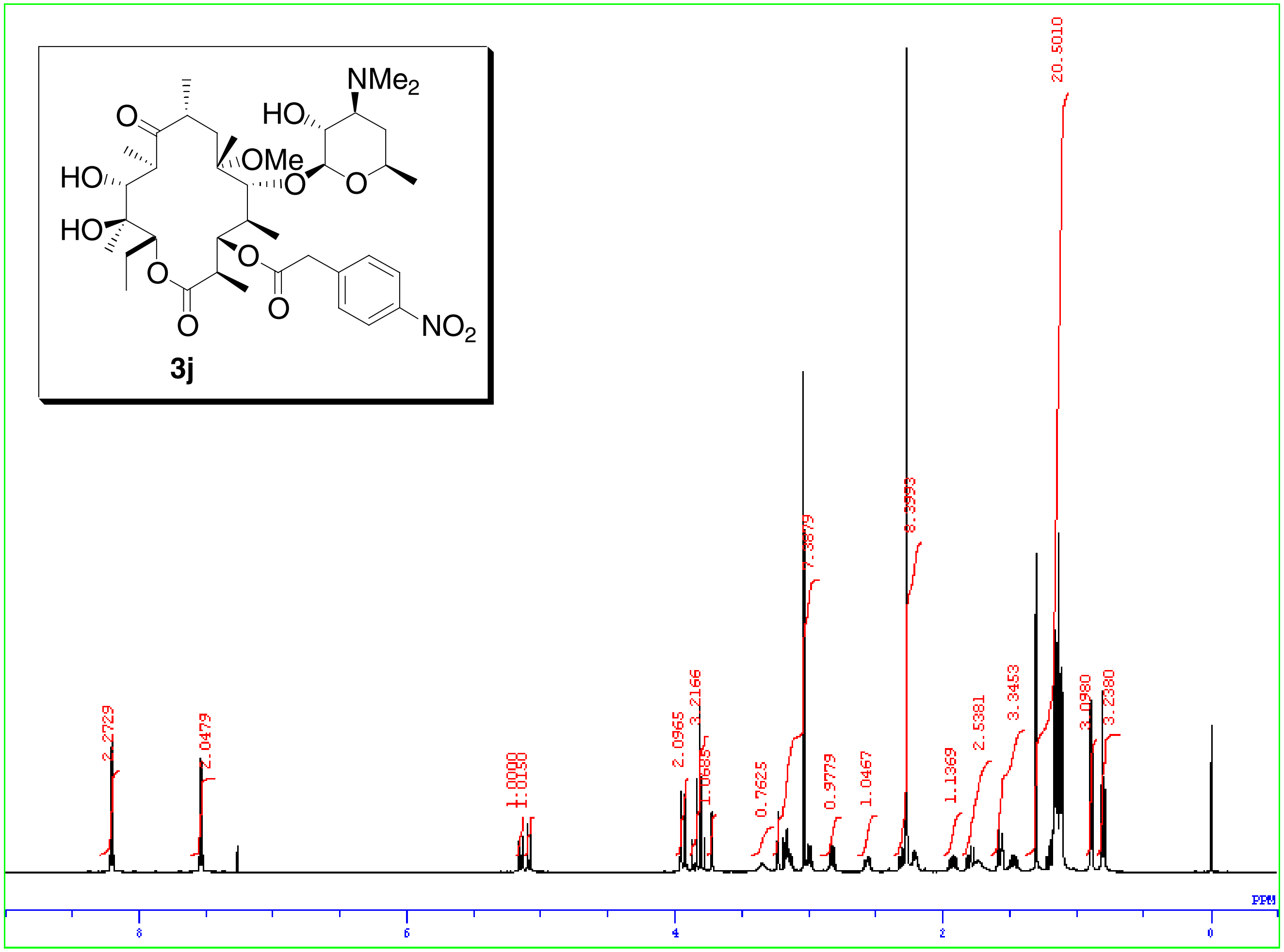
Table 11. Proton and carbon assignments of compound **3i**.

500MHz ^{1}H NMR data

	δ (ppm)	peak	J (Hz)
C_2-H	2.95 – 3.02	m	-
2-Me	1.17	d	6.7
C_3-H	4.82	d	11.0
C_4-H	2.15	m	-
4-Me	1.15	d	7.9
C_5-H	4.03	d	4.9
6-Me	1.37	s	-
6-OMe	3.05	s	-
C_7-H	1.65 1.72 – 1.77	dd m	14.7, 1.8 -
C_8-H	2.57	m	-
8-Me	1.12	d	7.3
C_{10}-H	2.95 – 3.02	m	-
10-Me	1.12	d	6.7
C_{11}-H	3.76	d	1.2
12-Me	1.12	s	-
C_{13}-H	5.12	dd	11.6, 2.4
C_{14}-H	1.49 1.93	m m	- -
C_{15}-H	0.84	t	7.3
C_1'-H	4.30	d	7.3
C_2'-H	3.14	dd	9.8, 7.3
C_3'-H	2.37	m	-
C_3'-NMe_2	2.26	s	-
C_4'-H	1.14 – 1.20 1.58	m dq	 12.8,1.8,1.8,1.8
C_5'	3.44	m	-
C_5'-Me	1.16	d	5.5
OH	3.21 3.34 3.96	s br s	- - -
-SO_2*CH_2*Ph	4.42 4.46	d d	14.0
-SO_2CH_2*Ph*	7.38 – 7.44	m	-

75MHz ^{13}C NMR data

	δ (ppm)
C_1	173.3
C_2	43.6
C_2-Me	16.5
C_3	85.9
C_4	37.9
C_4-Me	8.8
C_5	80.0
C_6	78.3
C_6-Me	19.5
C_6-OMe	50.5
C_7	39.0
C_8	45.1
C_8-Me	18.0
C_9	220.7
C_{10}	37.2
C_{10}-Me	12.3
C_{11}	69.2
C_{12}	74.2
C_{12}-Me	16.0
C_{13}	77.4
C_{14}	21.0
C_{15}	10.4
C_1'	102.7
C_2'	70.7
C_3'	65.8
C_3'-NMe_2	40.2
C_4'	28.3
C_5'	68.8
C_5'-Me	21.1
C_3-SO_2*CH_2*Ph	57.5
C_3-SO_2CH_2*Ph*	128.0 128.8 129.0 130.8



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FREQU	9980.0 Hz
SCANS	8
ACQTM	3.283 sec
PD	3.000 sec
PW1	6.4 us
IRNUC	1H
CTEMP	25.9 c
SLVNT	CDCL3
EXREF	0.00 ppm
BF	1.00 Hz
RGAIN	15

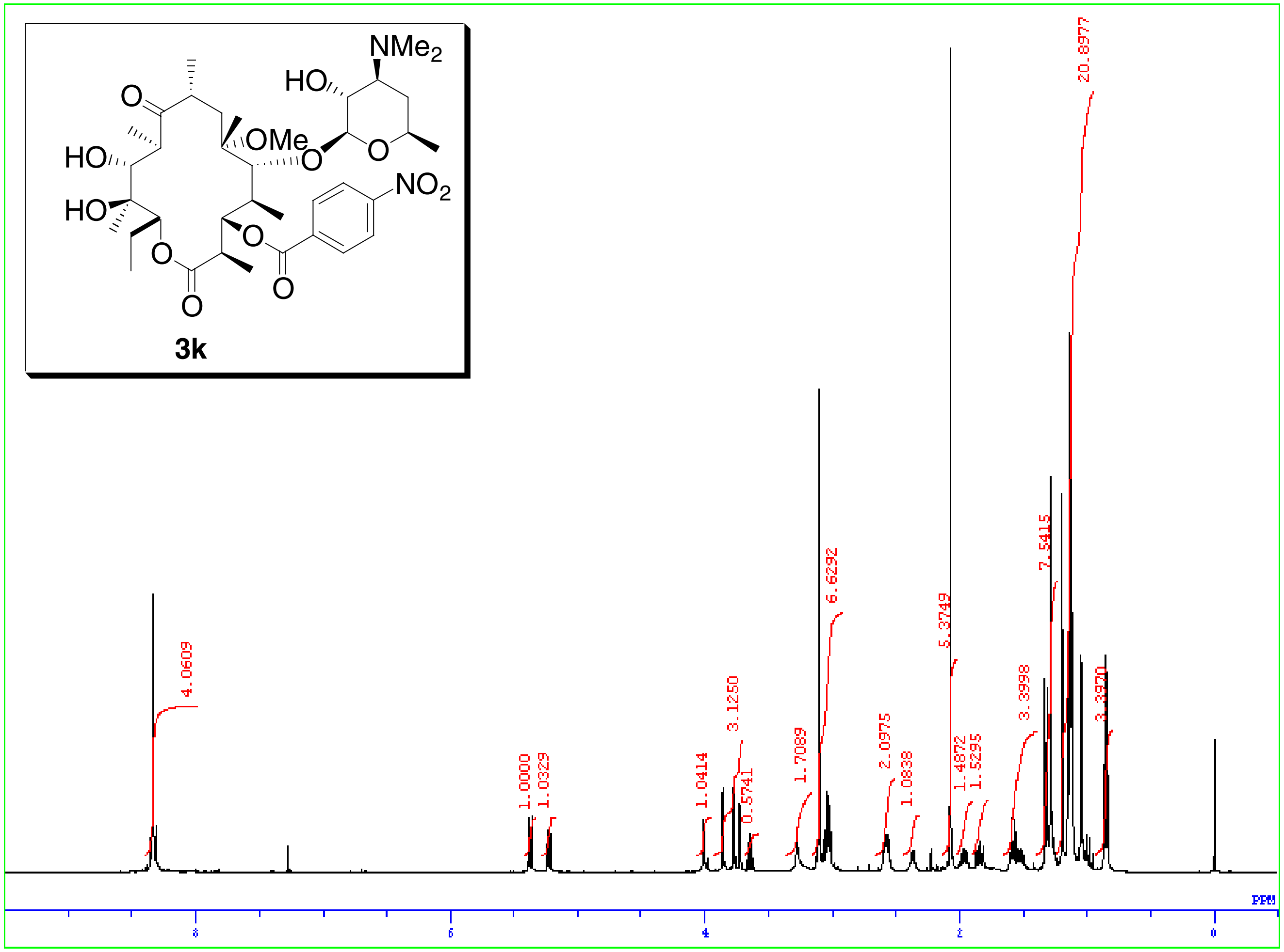
Table 12. Proton and carbon assignments of compound **3j**.

500MHz ^{1}H NMR data

	δ (ppm)	peak	J (Hz)
C_2-H	2.83	m	-
2-Me	0.90	d	6.7
C_3-H	5.09	d	11.0
C_4-H	2.21	m	-
4-Me	1.16	d	7.6
C_5-H	3.72	d	3.7
6-Me	1.31	s	-
6-OMe	3.04	s	-
C_7-H	1.79 1.56 – 1.59	dd m	14.6, 11.9 -
C_8-H	2.56	m	-
8-Me	1.12	d	7.0
C_{10}-H	3.00	m	-
10-Me	1.12	d	7.0
C_{11}-H	3.81	s	-
12-Me	1.15	s	-
C_{13}-H	5.15	dd	11.3, 2.1
C_{14}-H	1.47 1.93	m m	- -
C_{15}-H	0.81	t	7.3
C_{1}´-H	3.92	d	7.3
C_{2}´-H	3.17	dd	10.4, 7.3
C_{3}´-H	2.30	m	-
C_{3}´-NMe_2	2.27	s	-
C_{4}´-H	1.16 – 1.23 1.56 – 1.59	m m	- -
C_{5}´	3.15	m	-
C_{5}´-Me	1.17	d	6.1
OH	3.23 3.35 3.96	br s br s	- - -
-CO*CH*$_2$Ph	3.72 3.86	d d	15.5 15.5
-COCH$_2$*Ph*	7.54 8.21	m m	- -

75MHz ^{13}C NMR data

	δ (ppm)
C_1	173.4
C_2	42.9
C_2-Me	15.1
C_3	79.4
C_4	36.3
C_4-Me	9.0
C_5	82.2
C_6	78.0
C_6-Me	19.4
C_6-OMe	50.1
C_7	38.8
C_8	45.3
C_8-Me	17.9
C_9	220.6
C_{10}	37.3
C_{10}-Me	12.4
C_{11}	69.5
C_{12}	74.2
C_{12}-Me	16.1
C_{13}	77.2
C_{14}	21.1
C_{15}	10.4
C_{1}´	104.0
C_{2}´	70.4
C_{3}´	66.2
C_{3}´-NMe_2	40.3
C_{4}´	28.2
C_{5}´	69.7
C_{5}´-Me	21.1
C_3-CO*CH*$_2$Ph	41.1
C_3-*CO*CH$_2$Ph	169.9
C_3-COCH$_2$*Ph*	123.7 130.5 140.9 147.3



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POINT	16384
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ACQTM	1.638 sec
PD	4.362 sec
PW1	5.9 us
IRNUC	1H
CTEMP	24.4 c
SLVNT	CDCL3
EXREF	0.00 ppm
BF	1.00 Hz
RGAIN	17

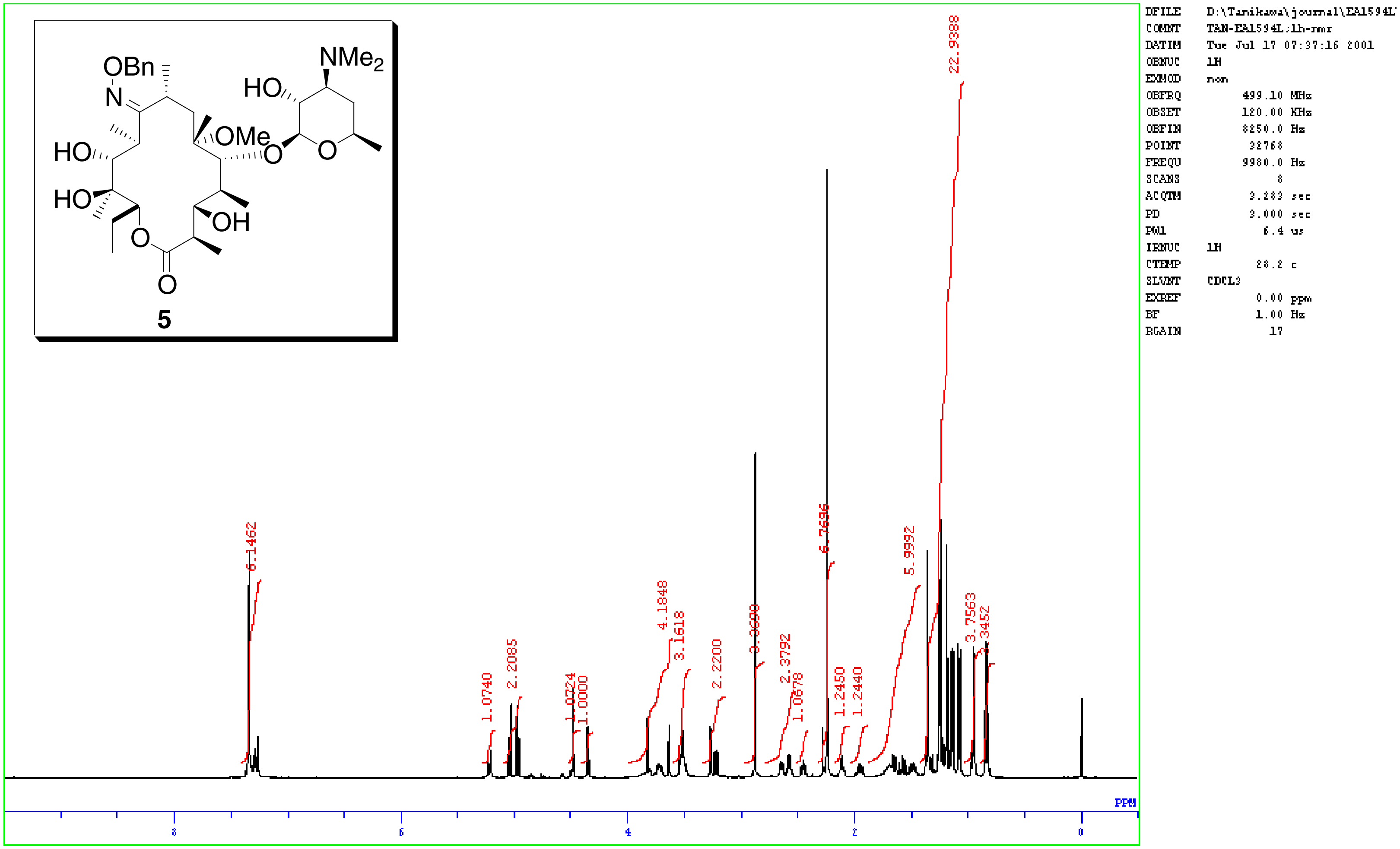
Table 13. Proton and carbon assignments of compound **3k**.

500MHz ^{1}H NMR data

	δ (ppm)	peak	J (Hz)
C_2-H	3.01 – 3.13	m	-
2-Me	1.12 – 1.17	m	-
C_3-H	5.38	d	11.0
C_4-H	2.37	m	-
4-Me	1.32	d	7.9
C_5-H	3.73	d	3.1
6-Me	1.29	s	-
6-OMe	3.10	s	-
C_7-H	1.84 1.49 – 1.61	m m	- -
C_8-H	2.54 – 2.59	m	-
8-Me	1.12 – 1.17	m	-
C_{10}-H	3.01 – 3.13	m	-
10-Me	1.12 – 1.17	m	-
C_{11}-H	3.87	d	1.2
12-Me	1.20	s	-
C_{13}-H	5.23	dd	11.0, 1.8
C_{14}-H	1.97 1.49 – 1.61	m m	- -
C_{15}-H	0.85	t	7.3
$C_{1'}$-H	3.78	d	7.3
$C_{2'}$-H	3.01 – 3.13	m	-
$C_{3'}$-H	1.49 – 1.61	m	-
$C_{3'}$-NMe_2	2.08	s	-
$C_{4'}$-H	1.26 – 1.33 0.96 – 1.05	m m	- -
$C_{5'}$	2.54 – 2.59	m	-
$C_{5'}$-Me	1.05	d	6.1
OH	3.28 4.01	br br	- -
-CO*Ph*	8.30 – 8.36	m	-

75MHz ^{13}C NMR data

	δ (ppm)
C_1	173.4
C_2	42.9
C_2-Me	15.3
C_3	80.1
C_4	36.4
C_4-Me	9.1
C_5	81.3
C_6	77.9
C_6-Me	19.3
C_6-OMe	50.1
C_7	38.7
C_8	45.4
C_8-Me	17.9
C_9	220.6
C_{10}	37.3
C_{10}-Me	12.5
C_{11}	69.5
C_{12}	74.2
C_{12}-Me	16.1
C_{13}	77.3
C_{14}	21.2
C_{15}	10.4
$C_{1'}$	103.0
$C_{2'}$	70.1
$C_{3'}$	65.8
$C_{3'}$-NMe_2	40.1
$C_{4'}$	28.0
$C_{5'}$	69.5
$C_{5'}$-Me	20.9
C_3-CO*Ph*	123.6 131.2 135.8 150.8
C_3-*CO*Ph	164.2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PW1 6.4 us
IRNUC 1H
CTEMP 28.2 c
SLVNT CDCL3
EXREF 0.00 ppm
BF 1.00 Hz
RGAIN 17

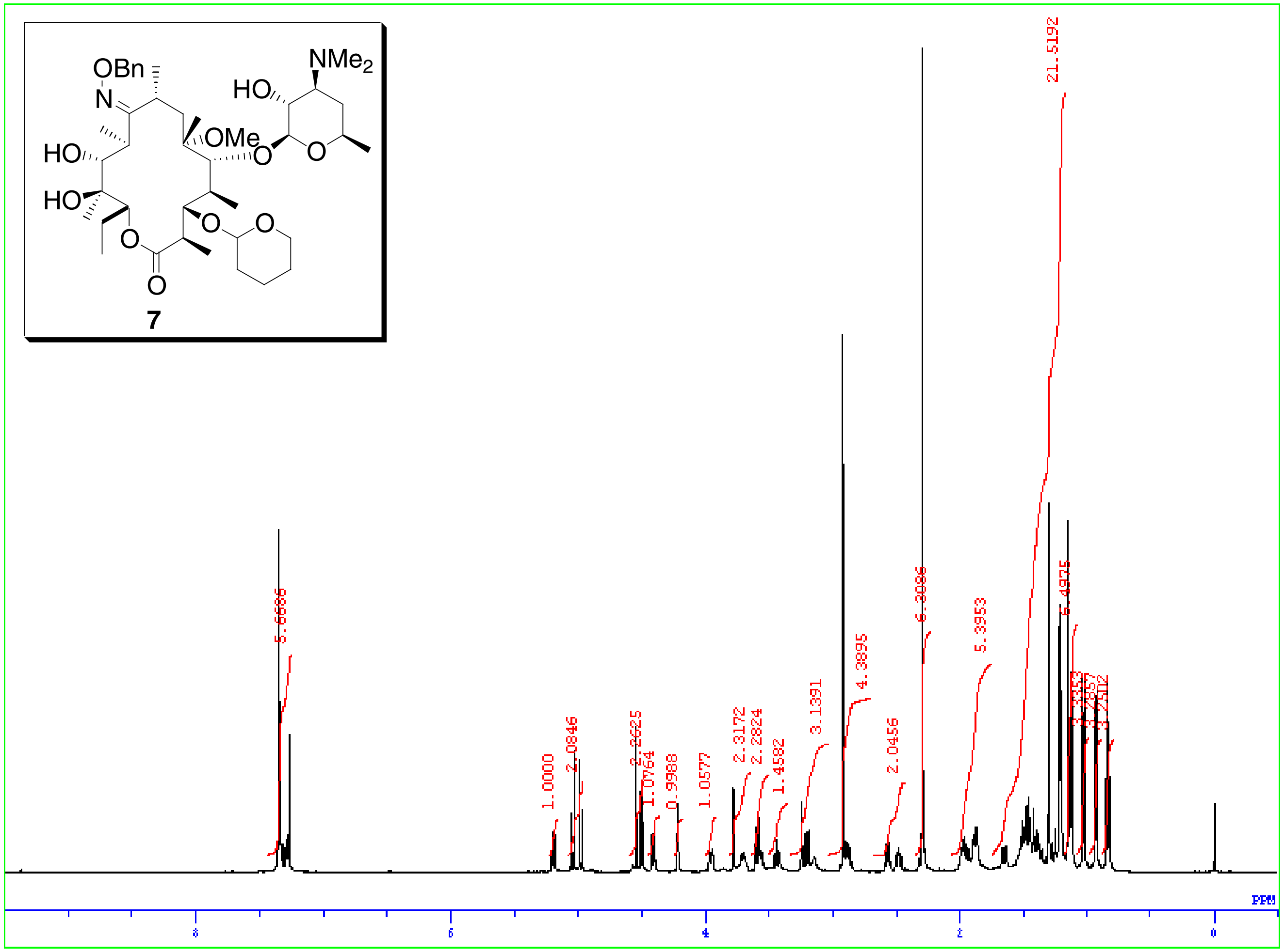
Table 14. Proton and carbon assignments of compound **5**.

500MHz ^{1}H NMR data

	δ (ppm)	peak	J (Hz)
C_2-H	2.65	m	-
2-Me	1.25	d	5.8
C_3-H	3.50 – 3.55	m	-
C_4-H	2.12	m	-
4-Me	1.08	d	7.3
C_5-H	3.64	d	1.2
6-Me	1.36	s	-
6-OMe	2.88	s	-
C_7-H	1.65 1.19 – 1.24	m m	- -
C_8-H	3.73	m	-
8-Me	0.95	d	7.0
C_{10}-H	2.58	m	-
10-Me	1.14	d	7.0
C_{11}-H	3.83	d	1.5
12-Me	1.19	s	-
C_{13}-H	5.22	dd	11.0, 2.4
C_{14}-H	1.49 1.96	m m	- -
C_{15}-H	0.84	t	7.3
$C_{1'}$-H	4.35	d	7.3
$C_{2'}$-H	3.22	dd	10.4, 7.3
$C_{3'}$-H	2.45	m	-
$C_{3'}$-NMe_2	2.24	s	-
$C_{4'}$-H	1.58 1.32 – 1.37	m m	- -
$C_{5'}$	3.50 – 3.55	m	-
$C_{5'}$-Me	1.25	d	5.8
OH	3.28 4.48	br s s	- -
-CH_2Ph	4.97 5.05	d d	11.6
-CH_2Ph	7.26 – 7.37	m	-

75MHz ^{13}C NMR data

	δ (ppm)
C_1	175.0
C_2	44.6
C_2-Me	15.2
C_3	79.0
C_4	36.0
C_4-Me	8.2
C_5	88.2
C_6	78.4
C_6-Me	18.8
C_6-OMe	49.5
C_7	28.1
C_8	26.4
C_8-Me	18.3
C_9	170.2
C_{10}	33.1
C_{10}-Me	15.4
C_{11}	70.6
C_{12}	74.0
C_{12}-Me	16.2
C_{13}	76.9
C_{14}	21.7
C_{15}	10.5
$C_{1'}$	106.8
$C_{2'}$	70.7
$C_{3'}$	65.7
$C_{3'}$-NMe_2	40.3
$C_{4'}$	37.4
$C_{5'}$	70.3
$C_{5'}$-Me	21.3
-CH_2Ph	75.8
-CH_2Ph	127.7 128.3 137.9



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FREQU 10000.0 Hz
SCANS 8
ACQTM 1.638 sec
PD 4.362 sec
PW1 5.9 us
IRNUC 1H
CTEMP 28.7 c
SLVNT CDCL3
EXREF 0.00 ppm
BF 1.00 Hz
RGAIN 17

Table 15. Proton and carbon assignments of compound **7**.

500MHz ^{1}H NMR data

	δ (ppm)	peak	J (Hz)
C_2-H	2.84 – 2.95	m	-
2-Me	1.21	d	6.7
C_3-H	3.54 – 3.60	m	-
C_4-H	1.87 – 1.99	m	-
4-Me	1.03	d	7.3
C_5-H	4.22	d	3.7
6-Me	1.30	s	-
6-OMe	2.92	s	-
C_7-H	1.30 – 1.53	m	-
C_8-H	3.70	m	-
8-Me	0.93	d	6.7
C_{10}-H	2.57	m	-
10-Me	1.13	d	6.7
C_{11}-H	3.78	d	1.8
12-Me	1.15	s	-
C_{13}-H	5.19	dd	11.0, 1.8
C_{14}-H	1.87 – 1.99	m	-
C_{15}-H	0.84	t	7.3
$C_{1'}$-H	4.50	d	7.3
$C_{2'}$-H	3.20	dd	9.8, 7.3
$C_{3'}$-H	2.48	m	-
$C_{3'}$-NMe_2	2.30	s	-
$C_{4'}$ -H	1.65	m	-
$C_{5'}$	3.54 – 3.60	m	-
$C_{5'}$-Me	1.22	d	6.1
OH	3.15	br	-
	3.24	s	-
	4.54	s	-
-*CH₂*Ph	4.98	d	11.6
	5.04	d	
-CH_2*Ph*	7.28 – 7.35	m	-
THP(C_1-H)	4.41	dd	9.2, 1.2
THP(C_2-H)	3.44	m	-
THP(C_3-H)	1.30 – 1.53	m	-
THP(C_4-H)	1.30 – 1.53	m	-
THP(C_5-H)	1.30 – 1.53	m	-

75MHz ^{13}C NMR data

	δ (ppm)
C_1	175.1
C_2	44.5
C_2-Me	15.4
C_3	80.9
C_4	36.7
C_4-Me	9.1
C_5	78.9
C_6	783
C_6-Me	196
C_6-OMe	50.0
C_7	37.2
C_8	26.4
C_8-Me	18.6
C_9	170.4
C_{10}	33.0
C_{10}-Me	15.3
C_{11}	70.4
C_{12}	74.0
C_{12}-Me	16.1
C_{13}	76.9
C_{14}	214
C_{15}	10.5
$C_1´$	101.9
$C_2´$	70.9
$C_3´$	65.9
$C_3´$-NMe_2	40.4
$C_4´$	29.2
$C_5´$	68.6
$C_5´$-Me	21.2
-CH_2Ph	75.7
-CH_2Ph	127.6, 128.1, 128.3, 137.9
THP(C_1)	102.6
THP(C_2)	66.3
THP(C_3)	22.7
THP(C_4)	25.4
THP(C_5)	31.4