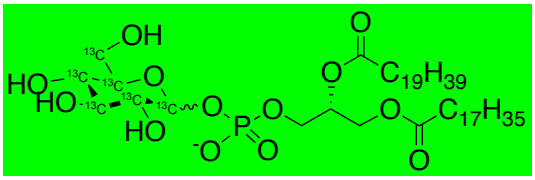
found 809.5203.

3-15-2. Using 1,2-di-*O*-palmitoyl-*sn*-glycerol-3-phosphate sodium salt.

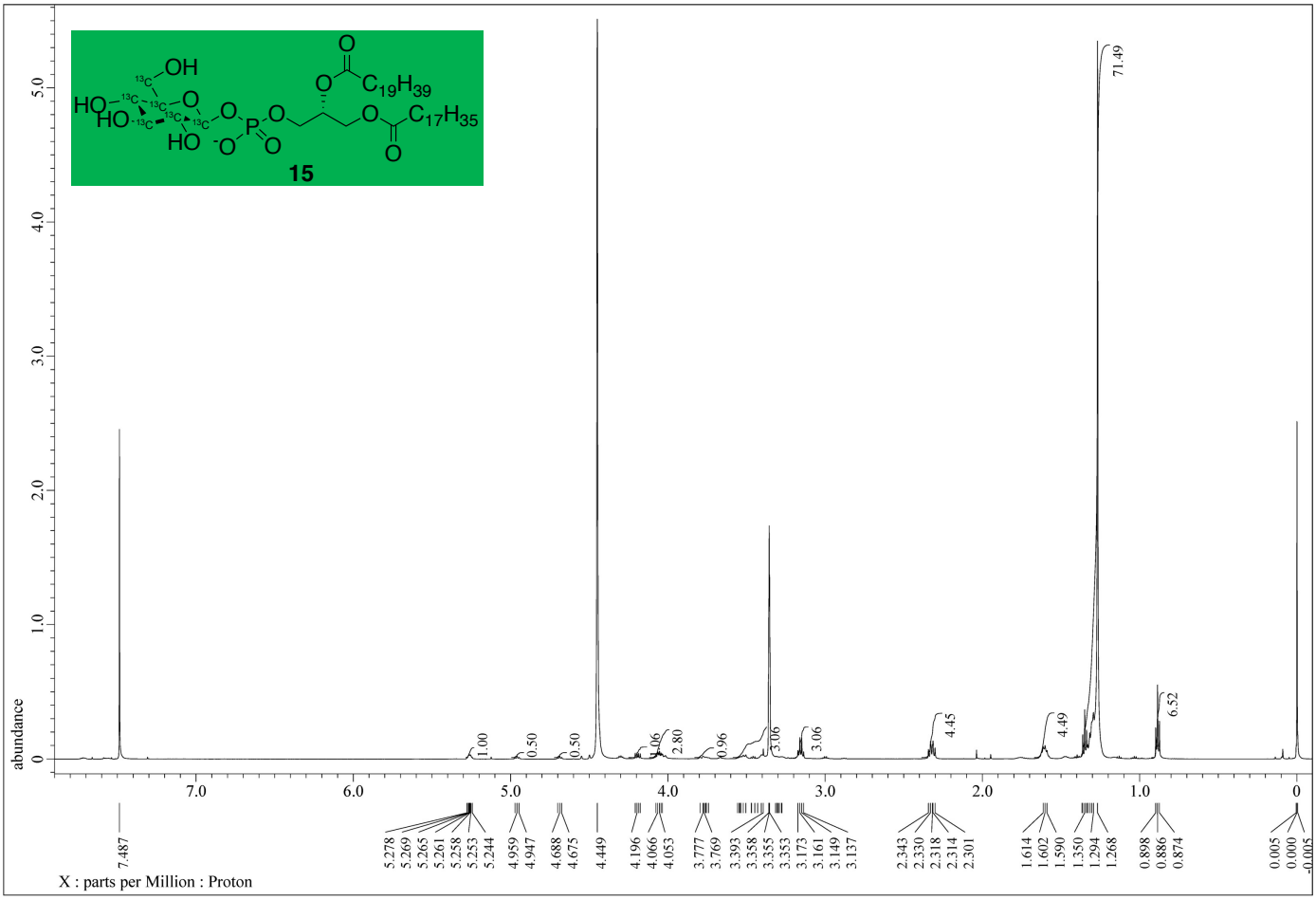
1,2-di-*O*-palmitoyl-*sn*-glycerol-3-phosphate sodium salt (**13**, 1 mg, 1.2 μmol), D-glucose (0.65 mg, 3.6 μmol) and TEA (6 μL, 43 mmol) were suspended in propionitrile/H_2O (1/5, 18 μL), treated with DMC (1.8 mg, 11 μmol) at 0 °C and stirred at 4 °C for 1 h. The mixture was applied to silica gel column chromatography (Iatrobeads 6RS-8060 No.1104) and eluted with $CHCl_3$/MeOH/TEA (100/0/1 to 89/11/0.2, 80/20/0.2, *v/v*). All fractions containing **14** were collected and concentrated *in vacuo*. The residue was purified by gel permeation column chromatography (Sephadex LH20) with $CHCl_3$/MeOH/TEA (50/50/1, *v/v*) to give **14** (0.28 mg, 20%).

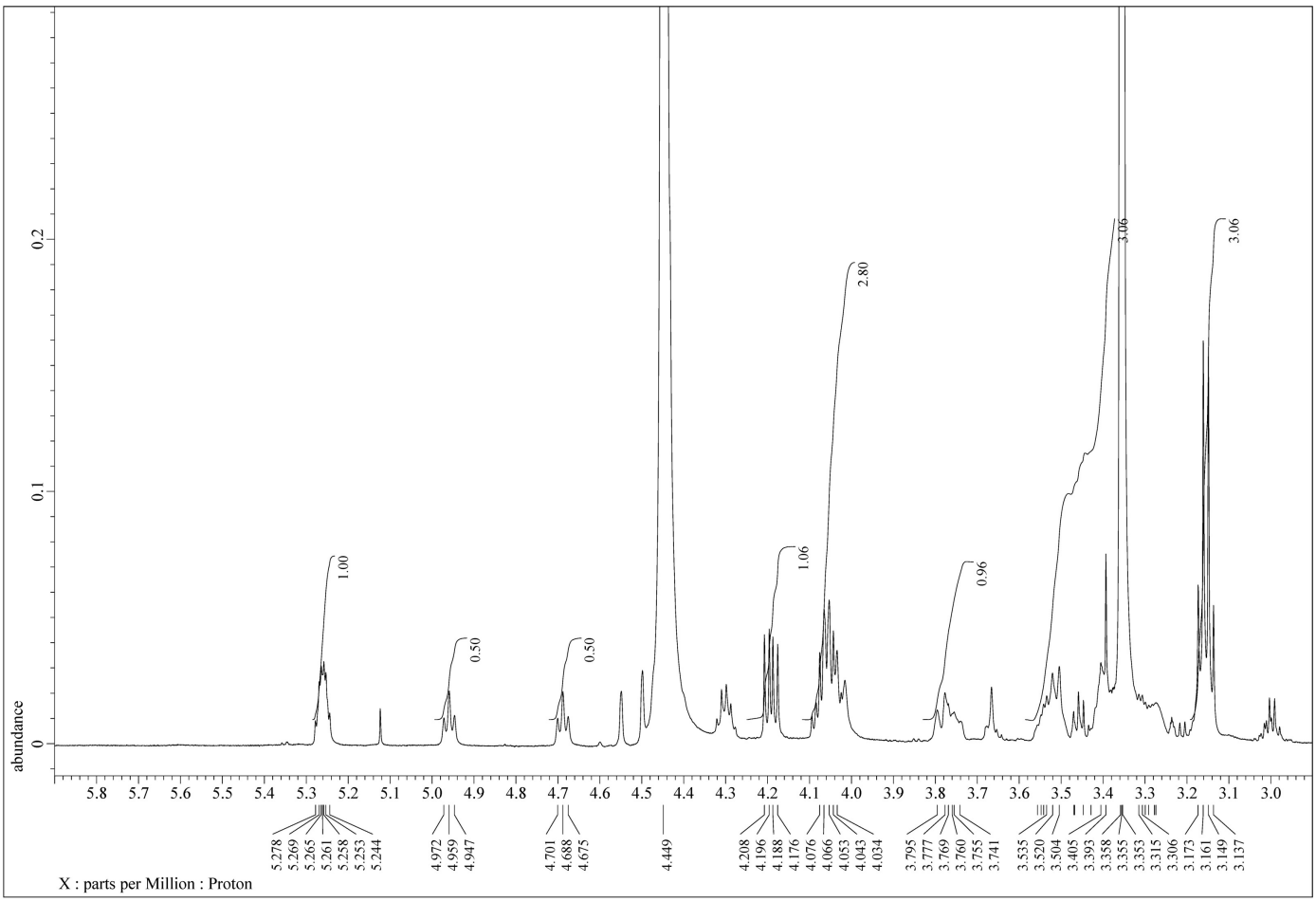
3-16. Synthesis of ^{13}C-labeled phosphatidyl glucoside (U-$^{13}C_6$): **15**



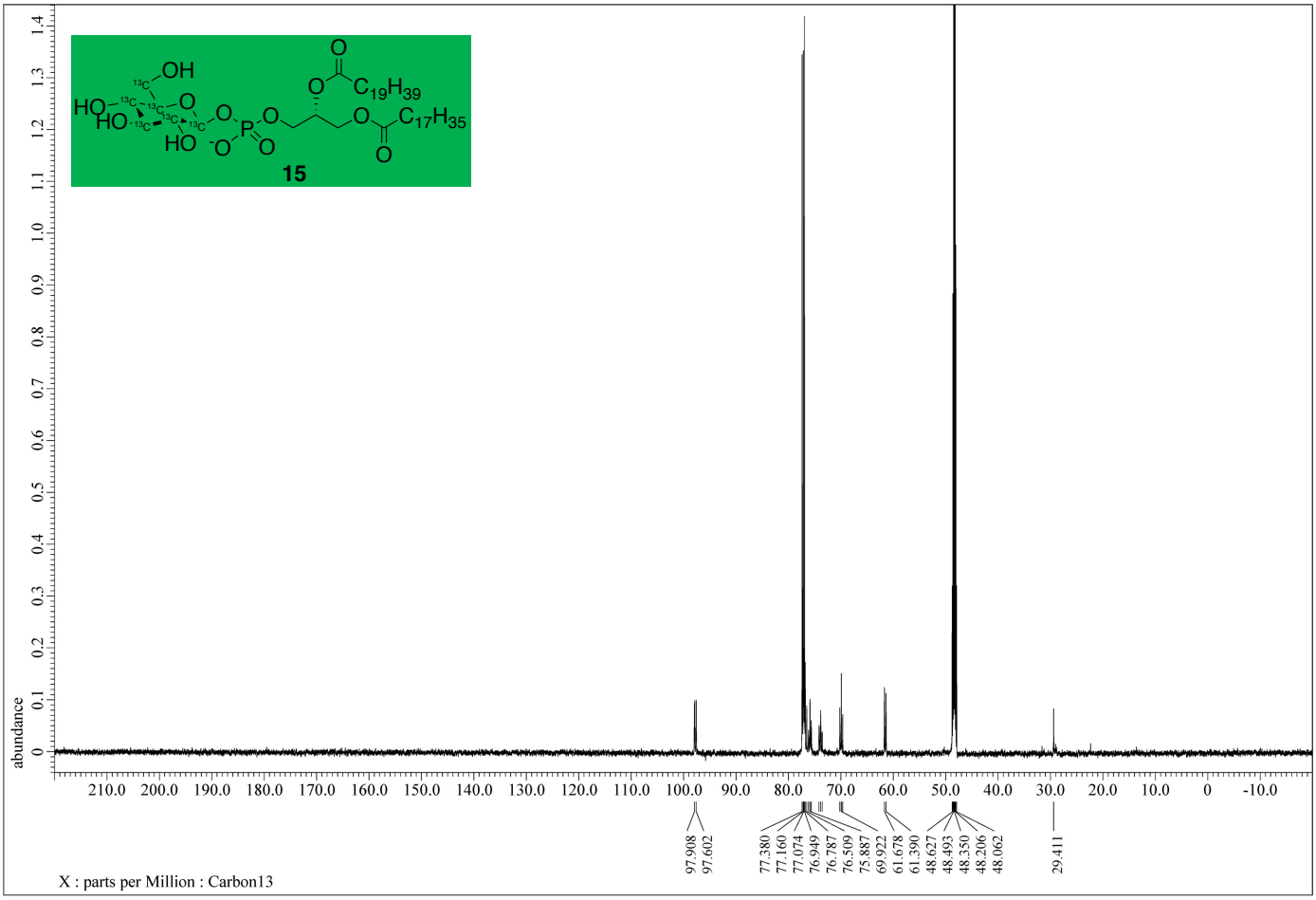
A mixture of PA(18:0/20:0) **3** (5.0 mg, 6 μmol), $^{13}C_6$-D-glucose (3.3 mg, 18 μmol) and TEA (30 μL, 215 mmol) in 90 μL of propionitrile/H_2O (1/5) was treated with DMC (9.1 mg, 55 μmol) at 0 °C. The reaction mixture was stirred at 4 °C for 1 h. The mixture was applied to silica gel column chromatography (Iatrobeads 6RS-8060 No.1104) and eluted with $CHCl_3$/MeOH/TEA (100/0/1 to 89/11/0.2, 80/20/0.2, *v/v*). The eluent was evaporated *in vacuo*. The residue was purified by gel permeation column chromatography (Sephadex LH20) with $CHCl_3$/MeOH/TEA (50/50/1, *v/v*) to give **15** (1.5 mg, 25%); ^{1}H NMR (600 MHz, $CDCl_3$ / CD_3OD = 2 / 1): δ 5.28-5.24 (m, 1H, *sn*-2), 4.82 (dt, 1H, $^1J_{CH}$ = 162.6 Hz, $^3J_{HP}$ = 7.8 Hz, *J* = 7.8 Hz, H-1), 4.42-4.40 (m, 1H, *sn*-1$_a$), 4.21-4.18 (m, 1H, *sn*-1$_b$), 4.09-4.02 (m, 3H, *sn*-3, H-6), 3.80-3.74 (m, 1H, H-6'), 3.56-3.39 (m, 2H, H-3, H-5), 3.32-3.25 (m, 2H, H-4, H-2), 3.17-3.14 (m, 6H, N-(CH_2-CH_3)$_3$), 2.34-2.30 (m, 4H, FA), 1.64-1.58 (m, 4H, FA), 1.35 (t, 9H, *J* = 7.2 Hz, *J* = 7.2 Hz, N-(CH_2-CH_3)$_3$), 1.33-1.27 (m, 60H, FA), 0.89 (m, 6H, *J* = 7.2 Hz, *J* = 7.2 Hz, FA); ^{13}C NMR (150 MHz, $CDCl_3$ / CD_3OD = 2 / 1): δ 97.77 (dd, *J* = 46.7 Hz, $^2J_{CP}$ = 4.4 Hz, 2.9 Hz, C-1), 76.79 (t, *J* = 43.1 Hz, *J* = 41.7 Hz, C-5), 75.89 (t, *J* = 38.7 Hz, *J* = 38.9 Hz, C-3), 73.87 (m, *J* = 42.5 Hz, *J* = 42.3 Hz, $^3J_{CP}$ = 7.2 Hz, 7.2 Hz, 5.7 Hz, 7.2 Hz, C-2), 69.92 (t, *J* = 38.7 Hz, *J* = 40.4 Hz, C-4), 61.53 (d, *J* = 43.2 Hz, C-6), 29.41 (FA); ^{31}P NMR (243 MHz, $CDCl_3$ / CD_3OD = 2 / 1) δ -2.33 ppm: ESI MS calcd for [$^{13}C_6C_{41}H_{90}O_{13}P$]$^-$ requires *m/z* 899.61; found 899.65, HRMS calcd for [$^{13}C_6C_{41}H_{90}O_{13}P$]$^-$ requires *m/z* 899.6325; found 899.6333.

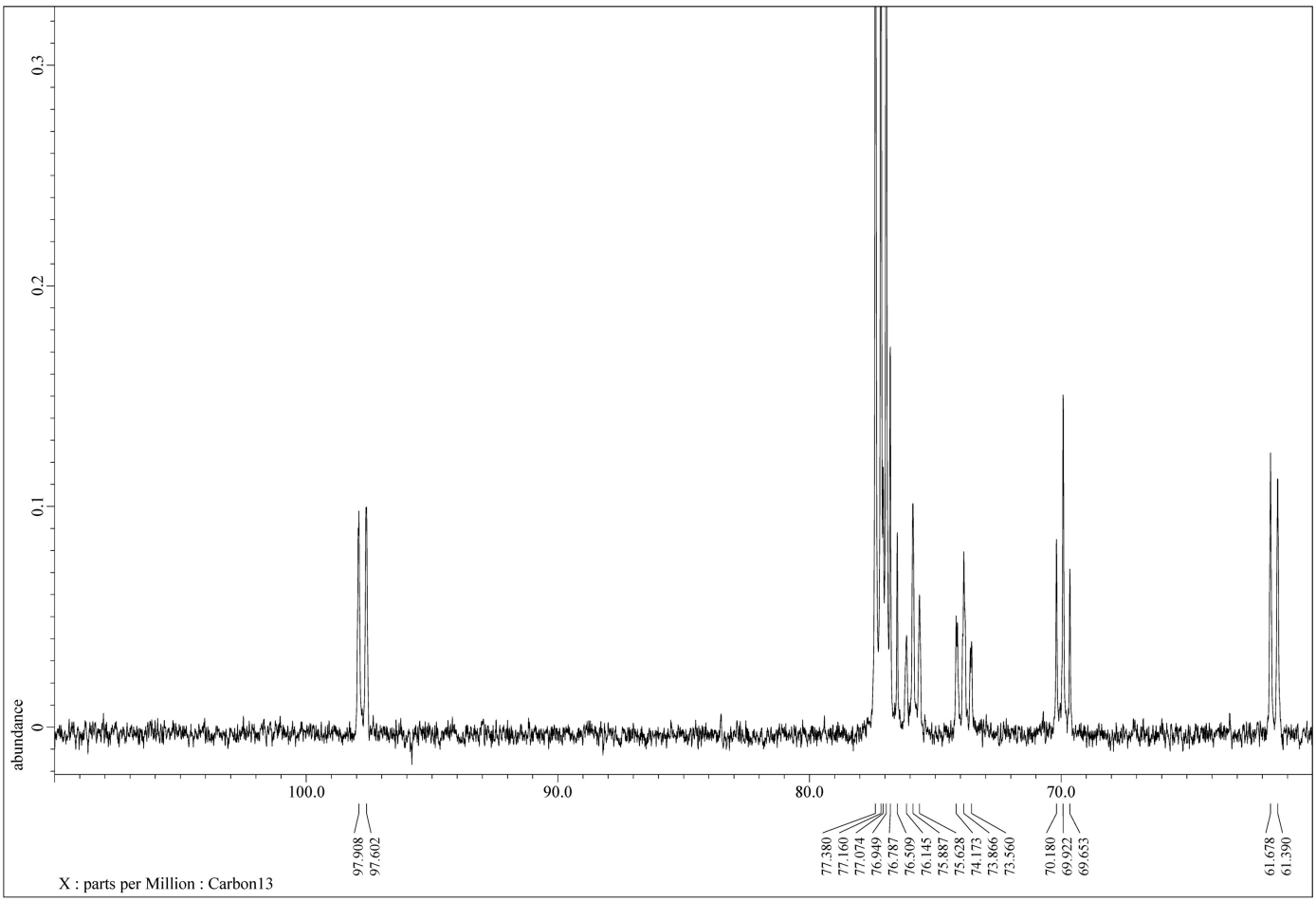
^{1}H-NMR data of (2-*O*-Arachidyl-1-*O*-stearyl-*sn*-glycer-3-yl) β-D-$^{13}C_6$-glucopyranosyl phosphate triethylammonium salt: $^{13}C_6$_PtdGlc (**15**), 600 MHz, $CDCl_3/CD_3OD$ = 2/1





^{13}C-NMR data of (2-*O*-Arachidyl-1-*O*-stearyl-*sn*-glycer-3-yl) β-D-$^{13}C_6$-glucopyranosyl phosphate triethylammonium salt: $^{13}C_6$_PtdGlc (**15**), 600 MHz, $CDCl_3/CD_3OD$ = 2/1





^{31}P-NMR data of (2-*O*-Arachidyl-1-*O*-stearyl-*sn*-glycer-3-yl) β-D-$^{13}C_6$-glucopyranosyl phosphate triethylammonium salt: $^{13}C_6$_PtdGlc (**15**), 243 MHz, $CDCl_3/CD_3OD$ = 2/1