Electronic Supplementary Information

Synthesis and properties of ionic liquids based on mecoprop

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1-Ethyl-1-methylpiperidinium 2-(4-chloro-2-methylphenoxy)propionate (**1**) 98% yield. ^{1}H NMR (300 MHz, $CDCl_3$) δ [ppm] = 1.20 (t, *J* = 7.1 Hz, 3H); 1.57 (m, 3H); 1.62 (m, 2H); 1.71 (m, 4H); 2.22 (s, 3H); 2.96 (s, 3H); 3.31 (m, 4H); 3.40 (m, 2H); 4.48 (m, 1H); 6.78 (d, *J* = 8.5 Hz, 1H); 6.95 (m, 1H); 7.04 (d, *J* = 2.1 Hz, 1H). ^{13}C NMR (75 MHz, $CDCl_3$) δ [ppm] = 155.7; 129.6; 128.5; 125.7; 123.7; 113.2; 75.6; 59.9; 57.9; 46.9; 20.5; 19.7; 19.1; 16.1; 7.2. Elemental analysis calcd for $C_{18}H_{28}ClNO_3$ (M_{mol} = 341.9 g mol^{-1}) (%): C = 63,24; H = 8.26; N = 4.10; found: C = 63.01; H = 8.43; N = 4.27.

1-Methyl-1-propylpiperidinium 2-(4-chloro-2-methylphenoxy)propionate (**2**) 96% yield. ^{1}H NMR (300 MHz, $CDCl_3$) δ [ppm] = 0.92 (t, *J* = 7.2 Hz, 3H); 1.55 (m, 5H); 1.61 (m, 2H); 1.67 (m, 4H); 2.21 (s, 3H); 2.93 (s, 3H); 3.17 (m, 4H); 3.26 (m, 2H); 4.47 (m, 1H); 6.76 (d, *J* = 7.6 Hz, 1H); 6.96 (d, *J* = 6.4 Hz, 1H); 7.03 (d, *J* = 2.2 Hz, 1H) ^{13}C NMR (75 MHz, $CDCl_3$) δ [ppm] = 155.6; 129.6; 128.5; 125.8; 123.8; 113.2; 75.3; 63.8; 60.4; 47.9; 20.5; 19.7; 19.1; 16.1; 14.9; 10.5. Elemental analysis calcd for $C_{19}H_{30}ClNO_3$ (M_{mol} = 355.9 g mol^{-1}) (%): C = 64.12; H = 8.50; N = 3.94; found: C = 63.85; H = 8.17; N = 4.23.

1-Butyl-1-methylpiperidinium 2-(4-chloro-2-methylphenoxy)propionate (**3**) 94% yield. ^{1}H NMR (300 MHz, $CDCl_3$) δ [ppm] = 0.90 (t, *J* = 7.0 Hz, 3H); 1.30 (m, 2H); 1.57 (m, 4H); 1.62 (m, 3H); 1.67 (m, 4H); 2.20 (s, 3H); 3.09 (s, 3H); 3.38 (m, 4H); 3.49 (m, 2H); 4.47 (m, 1H); 6.77 (d, *J*

= 7.2 Hz, 1H); 6.96 (d, *J* = 6.2 Hz, 1H); 7.03 (d, *J* = 2.1 Hz, 1H) ^{13}C NMR (75 MHz, $CDCl_3$) δ [ppm] = 155.7; 129.6; 128.2; 125.7; 123.7; 113.2; 62.2; 60.3; 47.9; 31.4; 29.0; 28.8; 22.3; 19.8; 14.2; 13.8. Elemental analysis calcd for $C_{20}H_{32}ClNO_3$ (M_{mol} = 369.2 g mol^{-1}) (%): C = 64.94; H = 8.72; N = 3.79; found: C = 65.18; H = 8.55; N = 3.98.

1-Methyl-1-pentylpiperidinium 2-(4-chloro-2-methylphenoxy)propionate (**4**) 97% yield. ^{1}H NMR (300 MHz, $CDCl_3$) δ [ppm] = 0.91 (t, *J* = 7.1 Hz, 3H); 1.33 (m, 4H); 1.56 (m, 4H); 1.63 (m, 3H); 1.74 (m, 4H); 2.22 (s, 3H); 3.09 (s, 3H); 3.38 (m, 4H); 3.48 (m, 2H); 4.46 (m, 1H); 6.79 (d, *J* = 8.5 Hz, 1H); 6.94 (dd, *J* = 2.4; 8.5 Hz, 1H); 7.03 (d, *J* = 2.5 Hz, 1H) ^{13}C NMR (75 MHz, $CDCl_3$) δ [ppm] = 176.1; 155.6; 129.5; 128.3; 125.6; 123.6; 113.2; 75.7; 62.4; 60.3; 47.7; 28.0; 21.9; 21.2; 20.4; 19.8; 19.1; 16.1; 14.9; 13.5. Elemental analysis calcd for $C_{21}H_{34}ClNO_3$ (M_{mol} = 383.9 g mol^{-1}) (%): C = 65.69; H = 8.93; N = 3.65; found: C = 65.92; H = 8.61; N = 3.85.

1-Hexyl-1-methylpiperidinium 2-(4-chloro-2-methylphenoxy)propionate (**5**) 95% yield. ^{1}H NMR (300 MHz, $CDCl_3$) δ [ppm] = 0.89 (t, *J* = 6.6 Hz, 3H); 1.30 (m, 6H); 1.58 (m, 4H); 1.63 (m, 3H); 1.74 (m, 4H); 2.23 (s, 3H); 3.06 (s, 3H); 3.34 (m, 4H); 3.43 (m, 2H); 4.47 (m, 1H); 6.79 (d, *J* = 8.6 Hz, 1H); 6.94 (dd, *J* = 2.4; 8.4 Hz, 1H); 7.03 (d, *J* = 2.63 Hz, 1H) ^{13}C NMR (75 MHz, $CDCl_3$) δ [ppm] = 176.2; 155.7; 129.6; 128.4; 125.6; 123.6; 113.5; 75.6; 62.5; 60.4; 47.9; 31.0; 25.7; 22.1; 21.6; 20.4; 19.8; 19.1; 16.1; 13.6. Elemental analysis calcd for $C_{22}H_{36}ClNO_3$ (M_{mol} = 397.9 g mol^{-1}) (%): C = 66.39; H = 9.12; N = 3.52; found: C = 66.22; H = 8.87; N = 3.76.

1-Heptyl-1-methylpiperidinium 2-(4-chloro-2-methylphenoxy)propionate (**6**) 94% yield. ^{1}H NMR (300 MHz, $CDCl_3$) δ [ppm] = 0.89 (t, *J* = 6.9 Hz, 3H); 1.30 (m, 8H); 1.57 (m, 4H); 1.63 (m, 3H); 1.74 (m, 4H); 2.22 (s, 3H); 3.06 (s, 3H); 3.36 (m, 4H); 3.43 (m, 2H); 4.47 (m, 1H); 6.76 (d, *J* = 8.6 Hz, 1H); 6.94 (dd, *J* = 2.2; 8.6 Hz, 1H); 7.04 (d, *J* = 2.0 Hz, 1H) ^{13}C NMR (75 MHz, $CDCl_3$) δ [ppm] = 155.5; 129.5; 128.3; 125.6; 123.6; 113.0; 75.5; 62.4; 60.3; 47.7; 31.2; 28.5; 25.9; 22.1; 21.5; 20.3; 19.7; 19.0; 16.1; 13.7. Elemental analysis calcd for $C_{23}H_{38}ClNO_3$ (M_{mol} = 412.0 g mol^{-1}) (%): C = 67.05; H = 9.30; N = 3.40; found: C = 67.35; H = 9.52; N = 3.59.

1-Methyl-1-octylpiperidinium 2-(4-chloro-2-methylphenoxy)propionate (**7**) 96% yield. ^{1}H NMR (300 MHz, $CDCl_3$) δ [ppm] = 0.89 (t, *J* = 6.9 Hz, 3H); 1.30 (m, 10H); 1.57 (m, 4H); 1.63 (m, 3H); 1.74 (m, 4H); 2.22 (s, 3H); 3.05 (s, 3H); 3.36 (m, 4H); 3.43 (m, 2H); 4.47 (m, 1H); 6.76 (d, *J* = 8.6 Hz, 1H); 6.94 (dd, *J* = 2.3; 8.5 Hz, 1H); 7.04 (d, *J* = 2.0 Hz, 1H) ^{13}C NMR (75 MHz, $CDCl_3$) δ [ppm] = 176.0; 155.6; 129.5; 128.3; 125.6;

123.5; 113.1; 75.5; 62.2; 60.2; 47.7; 31.3; 28.8; 28.7; 26.0; 22.2; 21.5; 20.3; 19.7; 19.0; 16.1; 13.7. Elemental analysis calcd for $C_{24}H_{40}ClNO_3$ (M_{mol} = 426.0 g mol^{-1}) (%): C = 67.66; H = 9.46; N = 3.29; found: C = 67.91; H = 9.17; N = 3.42.

1-Methyl-1-nonylpiperidinium 2-(4-chloro-2-methylphenoxy)propionate (**8**) 92% yield. ^{1}H NMR (300 MHz, $CDCl_3$) δ [ppm] = 0.88 (t, *J* = 6.7 Hz, 3H); 1.26 (m, 12H); 1.56 (m, 4H); 1.63 (m, 3H); 1.76 (m, 4H); 2.23 (s, 3H); 3.08 (s, 3H); 3.36 (m, 4H); 3.46 (m, 2H); 4.50 (m, 1H); 6.79 (d, *J* = 8.7 Hz, 1H); 6.94 (dd, *J* = 2.4; 8.6 Hz, 1H); 7.04 (d, *J* = 1.95 Hz, 1H) ^{13}C NMR (75 MHz, $CDCl_3$) δ [ppm] = 176.2; 155.7; 129.6; 128.5; 125.7; 123.7; 113.2; 75.7; 62.3; 60.4; 48.0; 31.5; 29.1; 29.0; 28.9; 26.2; 22.4; 21.7; 20.5; 19.9; 19.2; 16.2; 13.9. Elemental analysis calcd for $C_{25}H_{42}ClNO_3$ (M_{mol} = 440.0 g mol^{-1}) (%): C = 68.23; H = 9.62; N = 3.18; found: C = 67.93; H = 9.38; N = 3.40.

1-Decyl-1-methylpiperidinium 2-(4-chloro-2-methylphenoxy)propionate (**9**) 98% yield. ^{1}H NMR (300 MHz, $CDCl_3$) δ [ppm] = 0.88 (t, *J* = 6.7 Hz, 3H); 1.26 (m, 14H); 1.57 (m, 4H); 1.64 (m, 3H); 1.76 (m, 4H); 2.22 (s, 3H); 3.07 (s, 3H); 3.36 (m, 4H); 3.44 (m, 2H); 4.47 (m, 1H); 6.79 (d, *J* = 8.4 Hz, 1H); 6.95 (d, *J* = 6.1 Hz, 1H); 7.03 (d, *J* = 2.47 Hz, 1H) ^{13}C NMR (75 MHz, $CDCl_3$) δ [ppm] = 176.1; 155.7; 129.6; 128.4; 125.7; 123.7; 113.2; 75.6; 62.4; 60.4; 47.9; 31.5; 29.1; 29.1; 29.0; 28.9; 26.1; 22.3; 21.6; 20.4; 19.8; 19.1; 16.1; 13.8. Elemental analysis calcd for $C_{26}H_{44}ClNO_3$ (M_{mol} = 454.0 g mol^{-1}) (%): C = 68.77; H = 9.77; N = 3.08; found: C = 68.44; H = 9.61; N =3.33.

1-Methyl-1-undecylpiperidinium 2-(4-chloro-2-methylphenoxy)propionate (**10**) 95% yield. ^{1}H NMR (300 MHz, $CDCl_3$) δ [ppm] = 0.88 (t, *J* = 6.8 Hz, 3H); 1.26 (m, 16H); 1.56 (m, 4H); 1.65 (m, 3H); 1.74 (m, 4H); 2.23 (s, 3H); 3.08 (s, 3H); 3.36 (m, 4H); 3.45 (m, 2H); 4.50 (m, 1H); 6.79 (d, *J* = 8.6 Hz, 1H); 6.94 (dd, *J* = 2.5; 8.6 Hz, 1H); 7.03 (d, *J* = 3.3 Hz, 1H) ^{13}C NMR (75 MHz, $CDCl_3$) δ [ppm] = 176.0; 155.6; 129.5; 128.4; 125.6; 123.6; 113.1; 75.5; 62.3; 60.3; 47.8; 31.5; 29.2; 29.1; 29.0; 28.9; 26.0; 22.3; 21.6; 20.4; 19.7; 19.0; 16.1; 13.8. Elemental analysis calcd for $C_{27}H_{46}ClNO_3$ (M_{mol} = 468.1 g mol^{-1}) (%): C = 69.28; H = 9.90; N = 2.99; found: C = 69.56; H = 10.21; N = 3.12.

1-Dodecyl-1-methylpiperidinium 2-(4-chloro-2-methylphenoxy)propionate (**11**) 99% yield. ^{1}H NMR (300 MHz, CDCl3) δ [ppm] = 0.88 (t, *J* = 6.8 Hz, 3H); 1.26 (m, 18H); 1.56 (m, 4H); 1.63 (m, 3H); 1.76 (m, 4H); 2.22 (s, 3H); 3.07 (s, 3H); 3.30 (m, 4H); 3.45 (m, 2H); 4.46 (m, 1H); 6.76 (d, *J* = 8.6 Hz, 1H); 6.95 (dd, *J* = 2.6; 8.6 Hz, 1H); 7.03 (d, *J* = 2.6 Hz, 1H) ^{13}C NMR (75 MHz, $CDCl_3$) δ [ppm] = 176.4; 155.7; 129.6; 128.5; 125.8; 123.7; 113.2; 75.8; 62.2; 60.4; 48.1; 31.7; 29.4; 29.3; 29.2; 29.1; 29.0; 26.2; 22.5; 21.7; 20.5; 19.8. 19.2; 16.2; 13.9. Elemental analysis calcd for $C_{28}H_{48}ClNO_3$ (M_{mol} = 482.1 g mol^{-1}) (%): C = 69.75; H = 10.03; N = 2.91; found: C = 69.48; H = 9.88; N =3.17.

1-Methyl-1-tetradecylpiperidinium 2-(4-chloro-2-methylphenoxy)propionate (**12**) 93% yield. ^{1}H NMR (300 MHz, $CDCl_3$) δ [ppm] = 0.88 (t, *J* = 6.8 Hz, 3H); 1.26 (m, 22H); 1.56 (m, 4H); 1.67 (m, 3H); 1.75 (m, 4H); 2.23 (s, 3H); 3.08 (s, 3H); 3.36 (m, 4H); 3.47 (m, 2H); 4.48 (m, 1H); 6.79 (d, *J* = 8.7 Hz, 1H); 6.94 (dd, *J* = 2.4; 8.5 Hz, 1H); 7.04 (d, *J* = 2.6 Hz, 1H) ^{13}C NMR (75 MHz, $CDCl_3$) δ [ppm] = 176.1; 155.7; 129.6; 128.4; 123.6; 113.1; 75.5; 62.3; 60.3; 47.9; 31.6; 29.4; 29.3; 29.2; 29.1; 29.0; 28.9; 26.1; 22.4; 21.6; 20.4; 19.8; 19.1; 16.1; 13.9 Elemental analysis calcd for $C_{30}H_{52}ClNO_3$ (M_{mol} = 510.1 g mol^{-1}) (%): C = 70.62; H = 10.27; N = 2.75; found: C = 70.45; H = 10.49; N = 2.90.

1-Hexadecyl-1-methylpiperidinium 2-(4-chloro-2-methylphenoxy)propionate (**13**) 92% yield. ^{1}H NMR (300 MHz, $CDCl_3$) δ [ppm] = 0.88 (t, *J* = 6.6 Hz, 3H); 1.26 (m, 24H); 1.58 (m, 4H); 1.64 (m, 3H); 1.75 (m, 4H); 2.23 (s, 3H); 3.09 (s, 3H); 3.33 (m, 4H); 3.46 (m, 2H); 4.51 (m, 1H); 6.79 (d, *J* = 8.6 Hz, 1H); 6.95 (dd, *J* = 2.5; 8.6 Hz, 1H); 7.03 (d, *J* = 2.6 Hz, 1H) ^{13}C NMR (75 MHz, $CDCl_3$) δ [ppm] = 176.2; 155.8; 129.7; 128.6; 125.8; 123.8; 113.2; 75.6; 62.3; 60.4; 48.1; 31.7; 29.5; 29.4; 29.3; 29.2; 29.1; 29.0; 26.3; 22.5; 21.7; 20.5; 19.9; 19.2; 16.2; 13.9 Elemental analysis calcd for $C_{32}H_{56}ClNO_3$ (Mmol = 538.2 g mol^{-1}) (%): C = 71.41; H = 10.49; N = 2.60; found: C = 71.71; H = 10.11; N = 2.82.

1-Methyl-1-octadecylpiperidinium 2-(4-chloro-2-methylphenoxy)propionate (**14**) 94% yield. ^{1}H NMR (300 MHz, $CDCl_3$) δ [ppm] = 0.88 (t, *J* = 6.7 Hz, 3H); 1.26 (m, 28H); 1.58 (m, 4H); 1.64 (m, 3H); 1.73 (m, 4H); 2.22 (s, 3H); 3.09 (s, 3H); 3.37 (m, 4H); 3.49 (m, 2H); 4.46 (m, 1H); 6.80 (d, *J* = 8.6 Hz, 1H); 6.94 (dd, *J* = 2.4; 8.6 Hz, 1H); 7.03 (d, *J* = 2.0 Hz, 1H) ^{13}C NMR (75 MHz, $CDCl_3$) δ [ppm] = 176.0; 155.7; 129.5; 128.4; 125.7; 123.6; 113.2; 75.7; 62.2; 60.2; 47.8; 31.6; 29.3; 29.2; 29.1; 29.0; 28.9; 26.1; 22.4; 21.6; 20.4; 19.8; 19.1; 16.1; 13.8; Elemental analysis calcd for $C_{34}H_{60}ClNO_3$ (Mmol = 566.3 g mol^{-1}) (%): C = 72.11; H = 10.68; N = 2.47; found: C = 72.39; H = 10.95; N = 2.62.

Greenhouse experiments

Due to the fact that commercial preparations comprising MCPP-P were not available on the market, the herbicidal effects were compared with a commercial herbicide: MCPA in the form of sodium and potassium salts (Chwastox Extra 300 SL). The samples were dissolved in water in an amount, which equalled 400 g of active substance per 1 ha. The test plants included common lambsquaters (*Chenopodium album* L.), cornflower (*Centaurea cyanus* L.) and white mustard (*Sinapis alba* L.). The seeds were planted to pots (volume of 0.82 L) filled with a slightly acidic (pH 5.2 – 6.3) substrate for growing plants. After growing of leaves the plants were thinned to 5 per pot. After reaching the BBCH 14/16 stage, the plants were treated with a spray, which included the studied compounds. A cabin sprayer equipped with a Tee Jet XR 110/02 VP spraying nozzle

was used. The sprayer was placed 50 cm from the plant tops and moved at a constant velocity of 3.36 km/h. The liquid pressure in the sprayer was at 0.15 MPA, the working solution was applied at 200 L per 1 ha. After treatment the plants in the pots were placed in the greenhouse. The greenhouse tests were carried out under the following conditions: temperature – 20^0C ($\pm 2^0$C), humidity – 60%, photoperiod day/night – 16/8 hours. The efficacy of the studied compounds was evaluated visually 1 week, 2 weeks and 3 after treatment (WAT) in comparison to control (plants not treated with herbicides). The results of the evaluation were expressed in a percentage scale, where 100% refers to total destruction of weeds, whereas 0% refers to a lack of effect of the tested compounds. All tests were conducted using 4 repetitions.

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Solvent	CHLOROFORM-d			*Spectrum Offset (Hz)*	1505.5831	*Spectrum Type*	STANDARD	*Sweep Width (Hz)*	3291.64
Temperature (degree C)	AMBIENT TEMPERATURE								

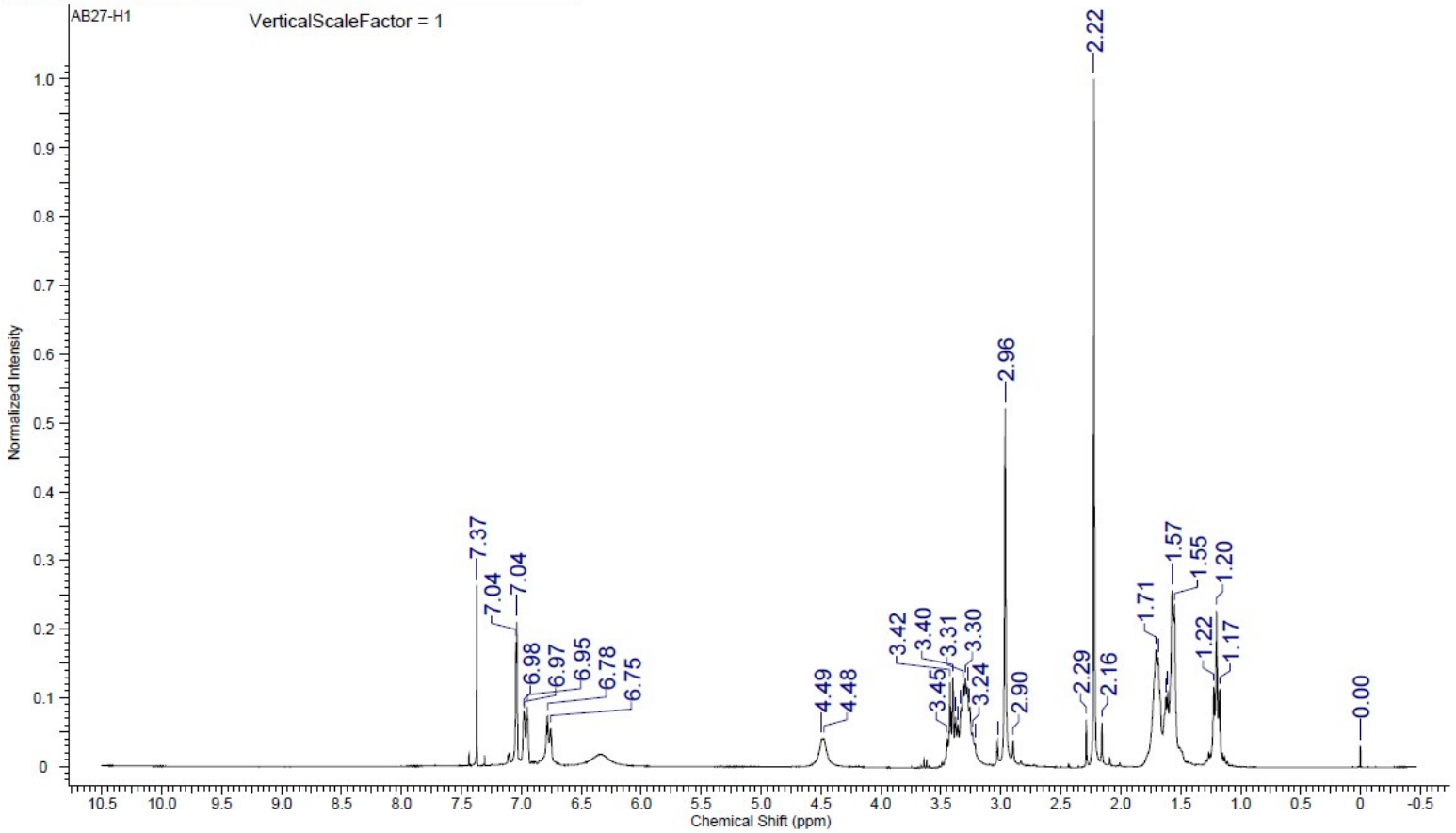

Figure S1. [1]H NMR spectrum of 1-ethyl-1-methylpiperidinium 2-(4-chloro-2-methylphenoxy)propionate (**1**)

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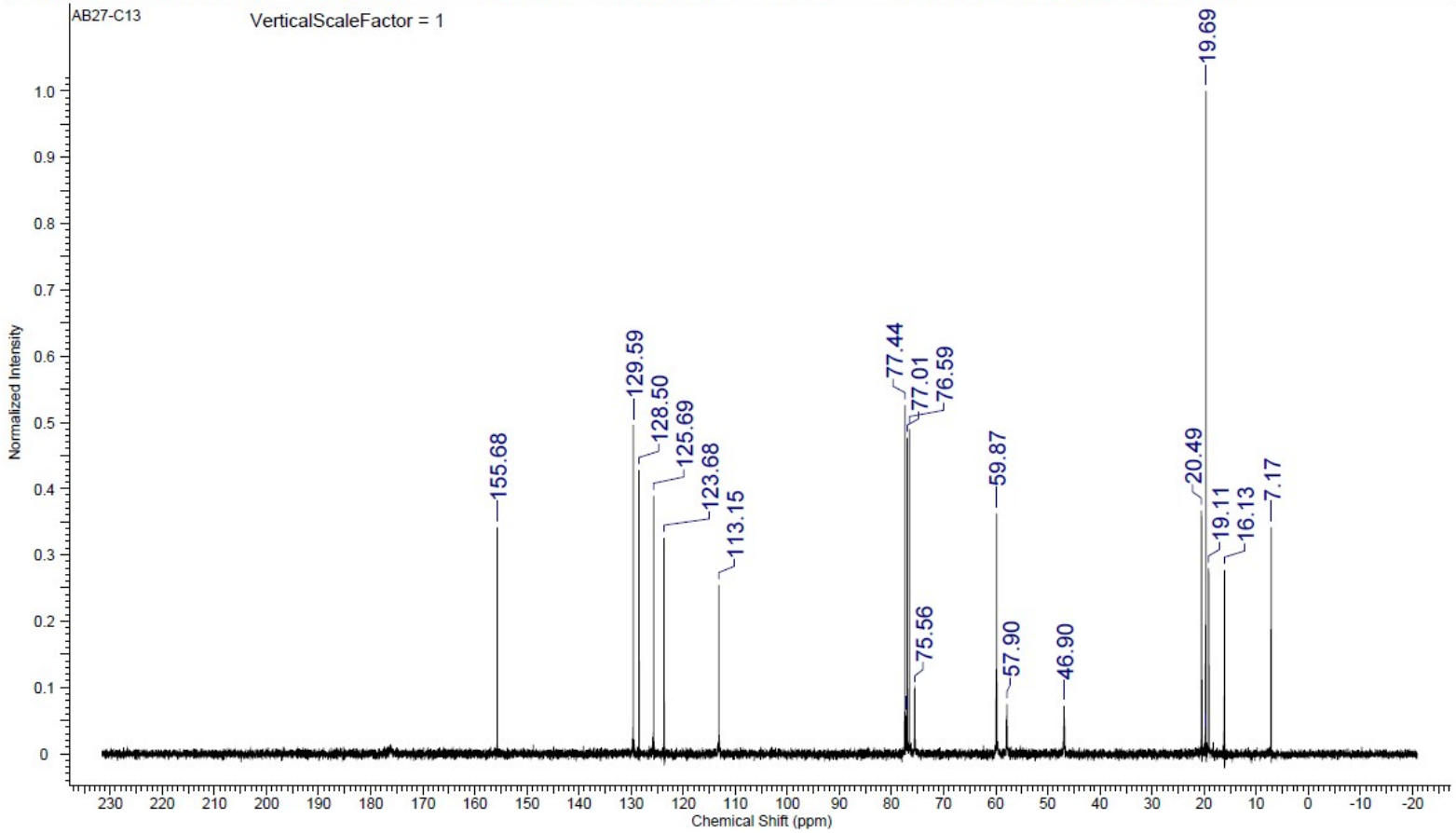

Figure S2. ^{13}C NMR spectrum of 1-ethyl-1-methylpiperidinium 2-(4-chloro-2-methylphenoxy)propionate (**1**)

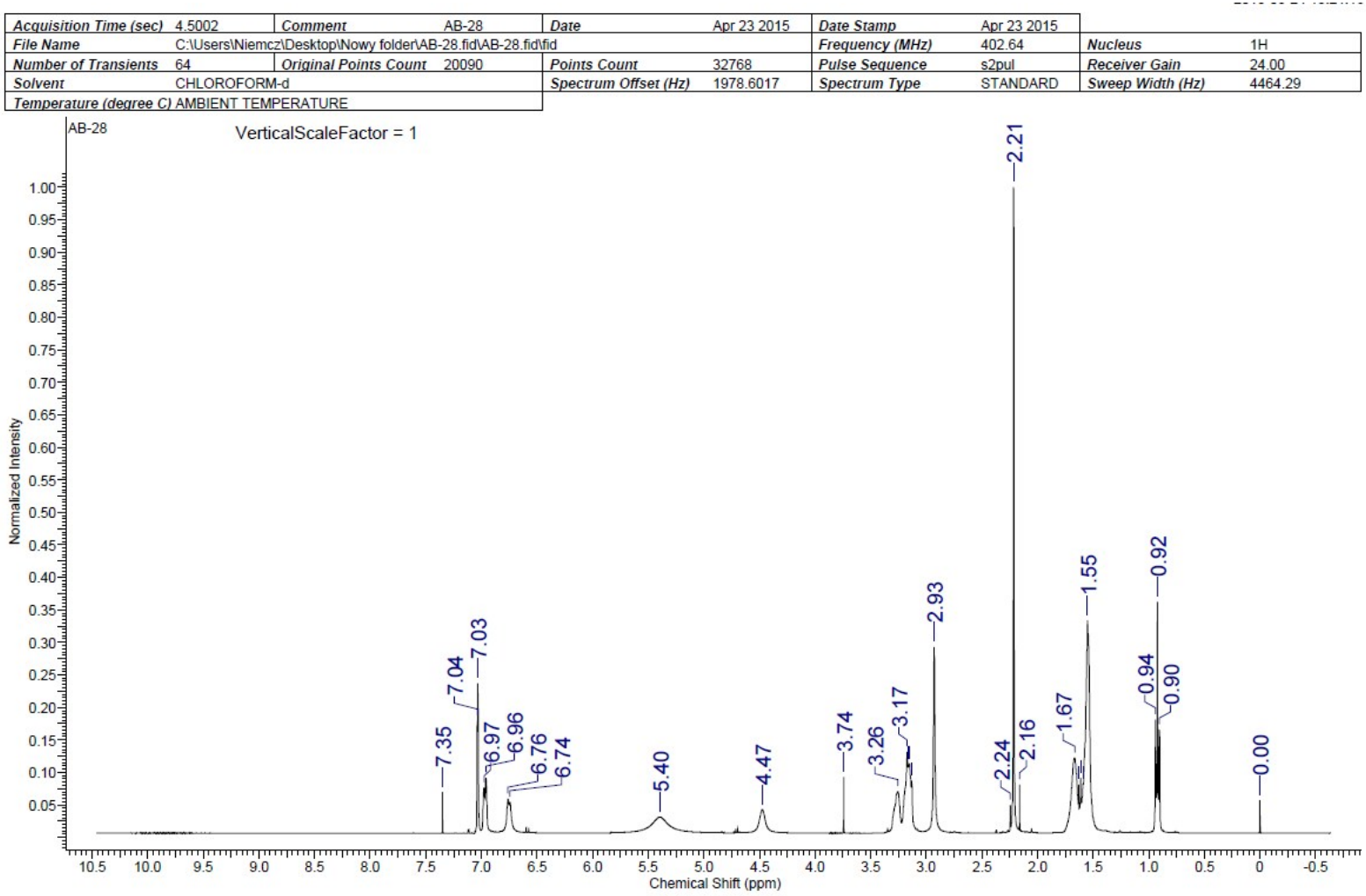

Figure S3. ^{1}H NMR spectrum of 1-methyl-1-propylpiperidinium 2-(4-chloro-2-methylphenoxy)propionate (**2**)

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Nucleus	13C	*Number of Transients*	1436	*Original Points Count*	28039	*Points Count*	32768
Pulse Sequence	s2pul	*Receiver Gain*	40.00	*Solvent*	CHLOROFORM-d		
Spectrum Offset (Hz)	9601.1943	*Spectrum Type*	STANDARD	*Sweep Width (Hz)*	21551.72	*Temperature (degree C)*	AMBIENT TEMPERATURE

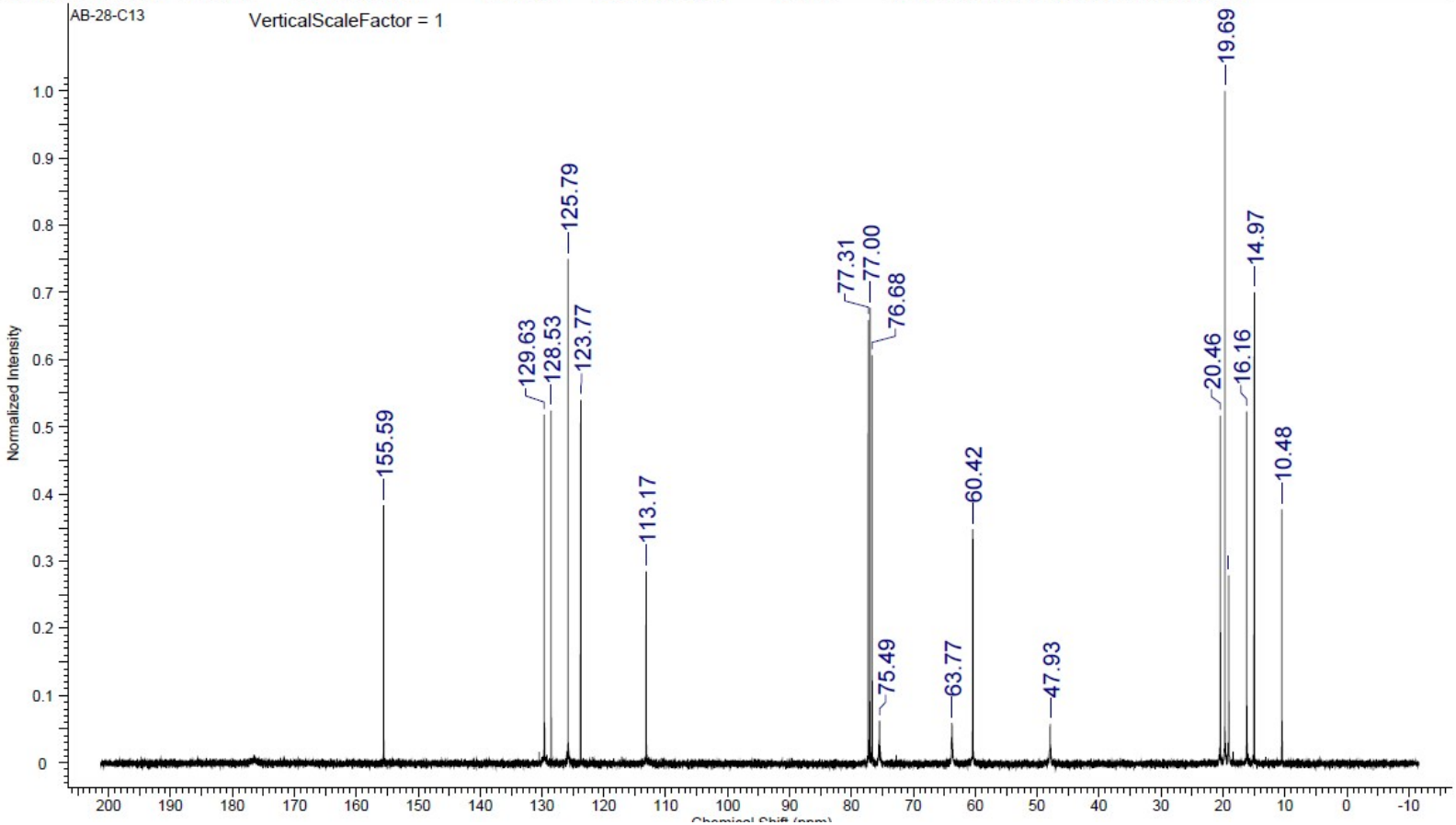

Figure S4. ^{13}C NMR spectrum of 1-methyl-1-propylpiperidinium 2-(4-chloro-2-methylphenoxy)propionate (**2**)

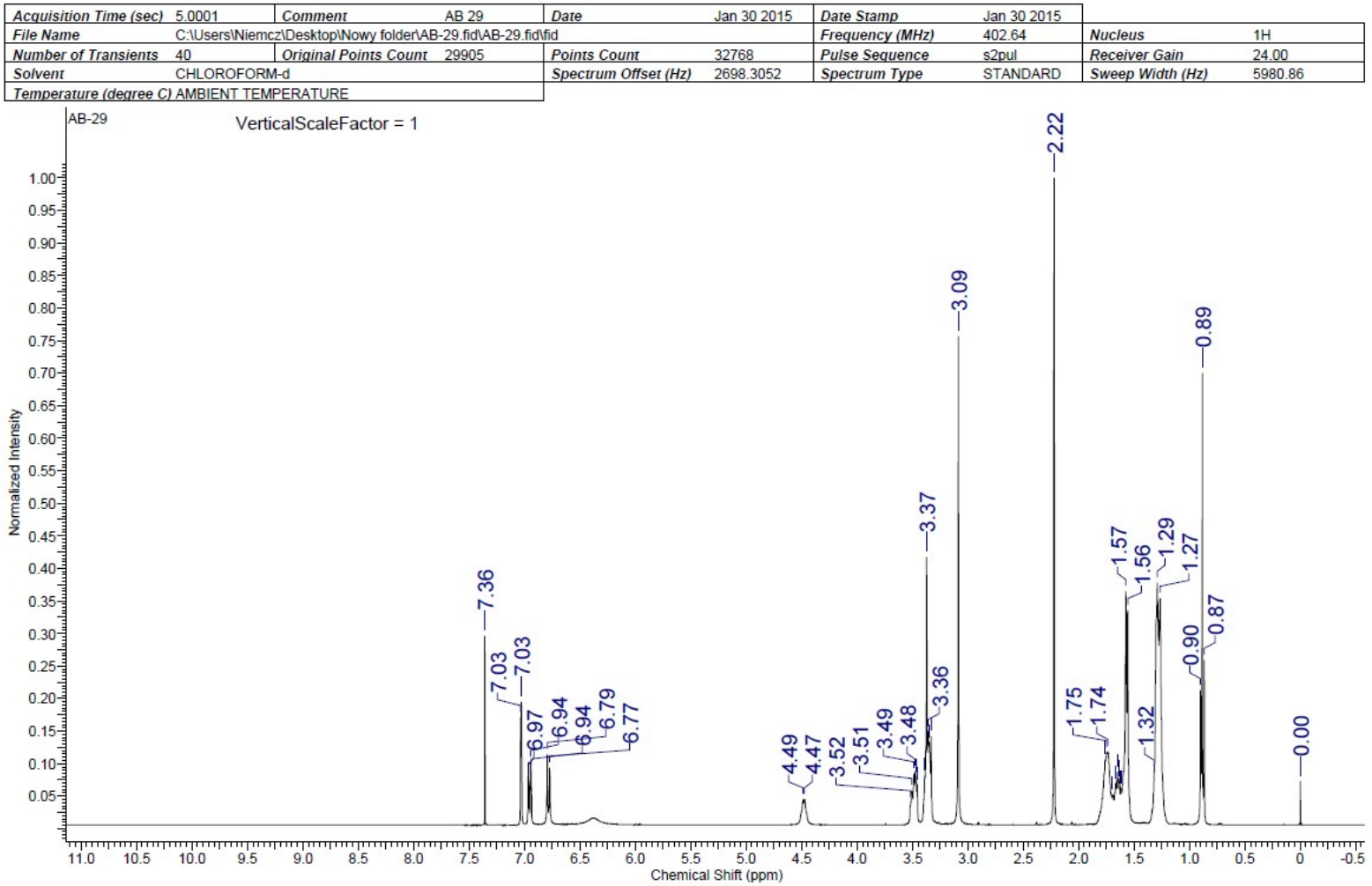

Figure S5. ^{1}H NMR spectrum of 1-butyl-1-methylpiperidinium 2-(4-chloro-2-methylphenoxy)propionate (**3**)

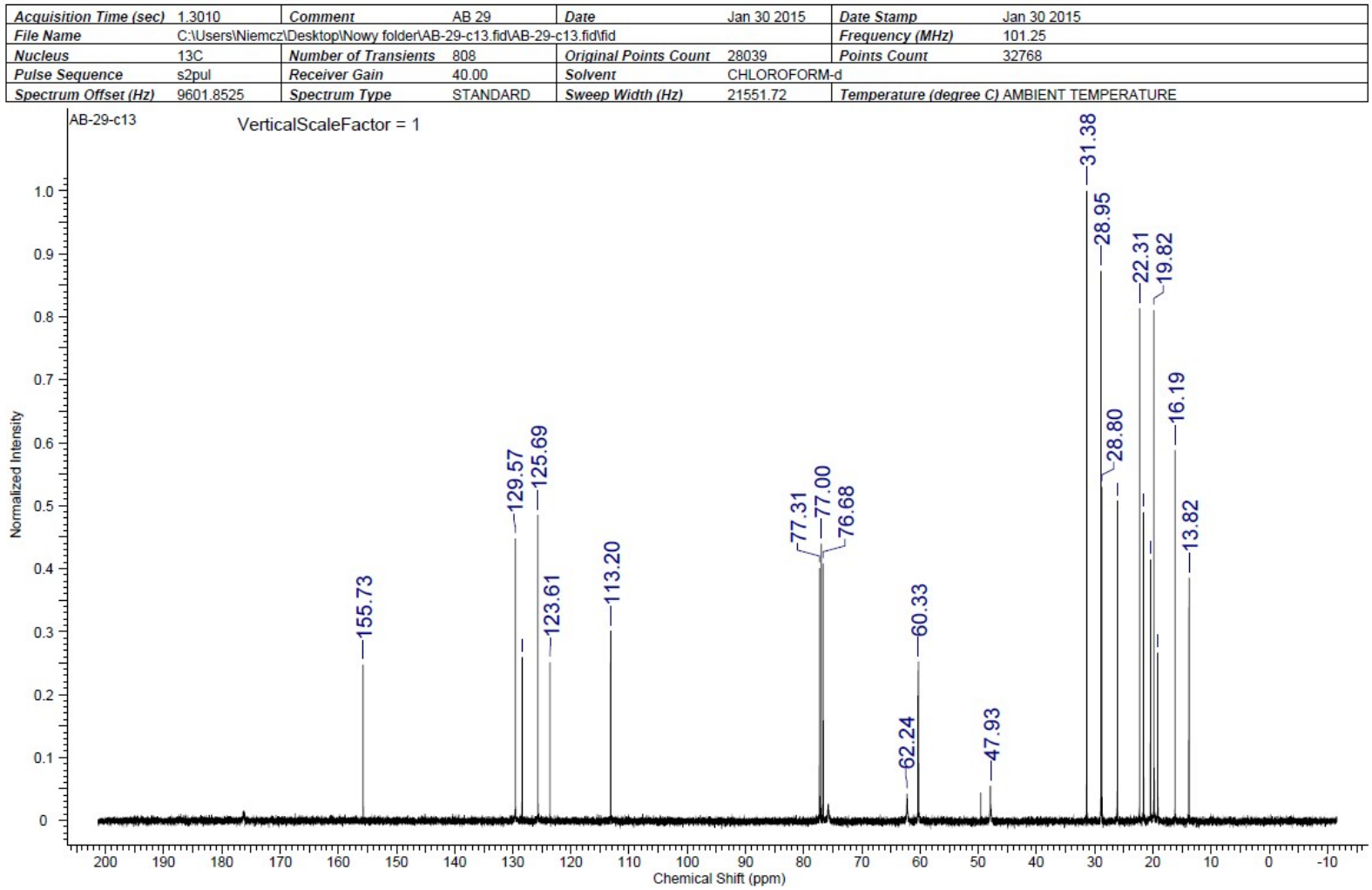

Figure S6. ^{13}C NMR spectrum of 1-butyl-1-methylpiperidinium 2-(4-chloro-2-methylphenoxy)propionate (**3**)

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Temperature (degree C)	AMBIENT TEMPERATURE						

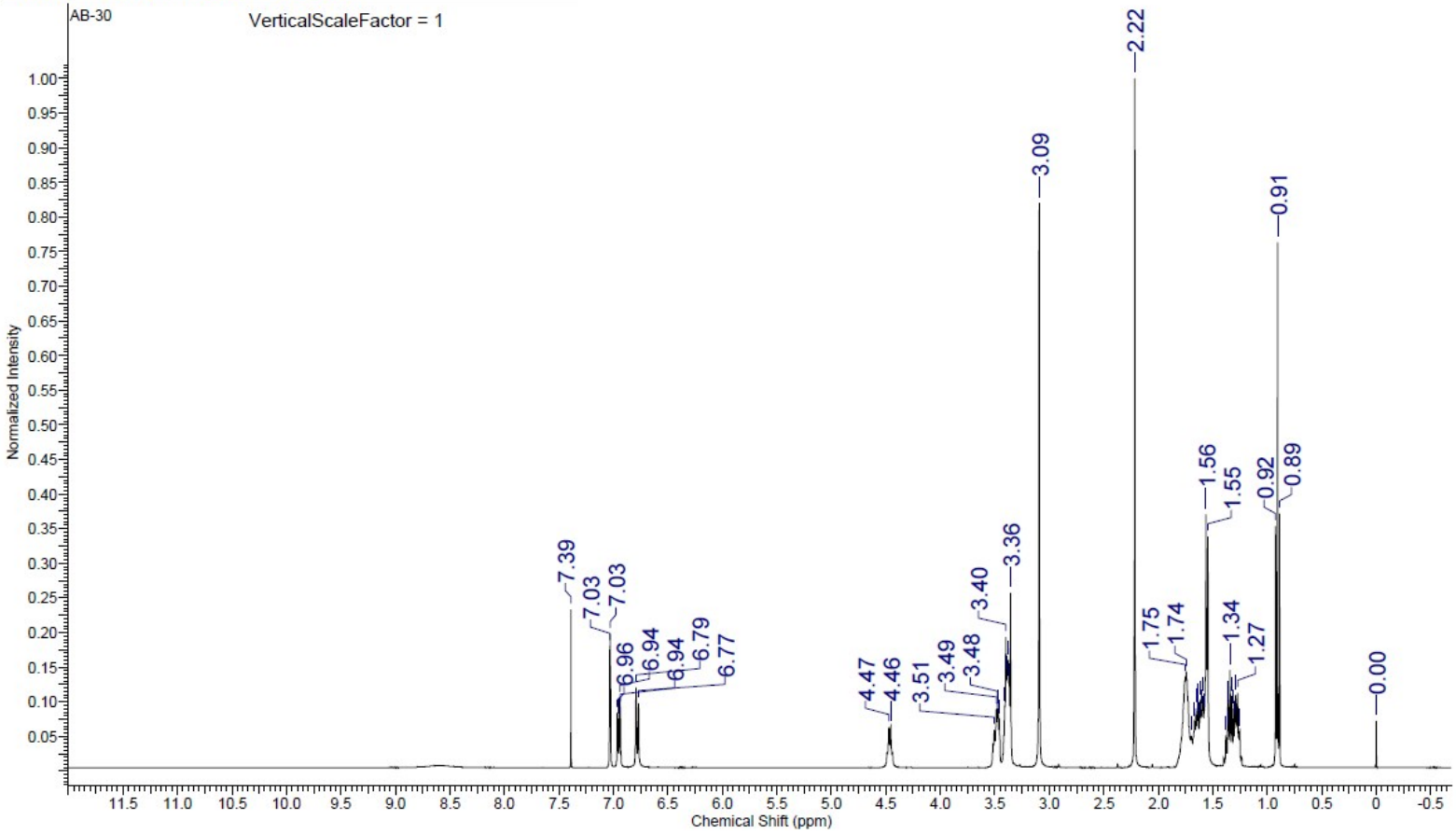

Figure S7. [1]H NMR spectrum of 1-methyl-1-pentylpiperidinium 2-(4-chloro-2-methylphenoxy)propionate (**4**)

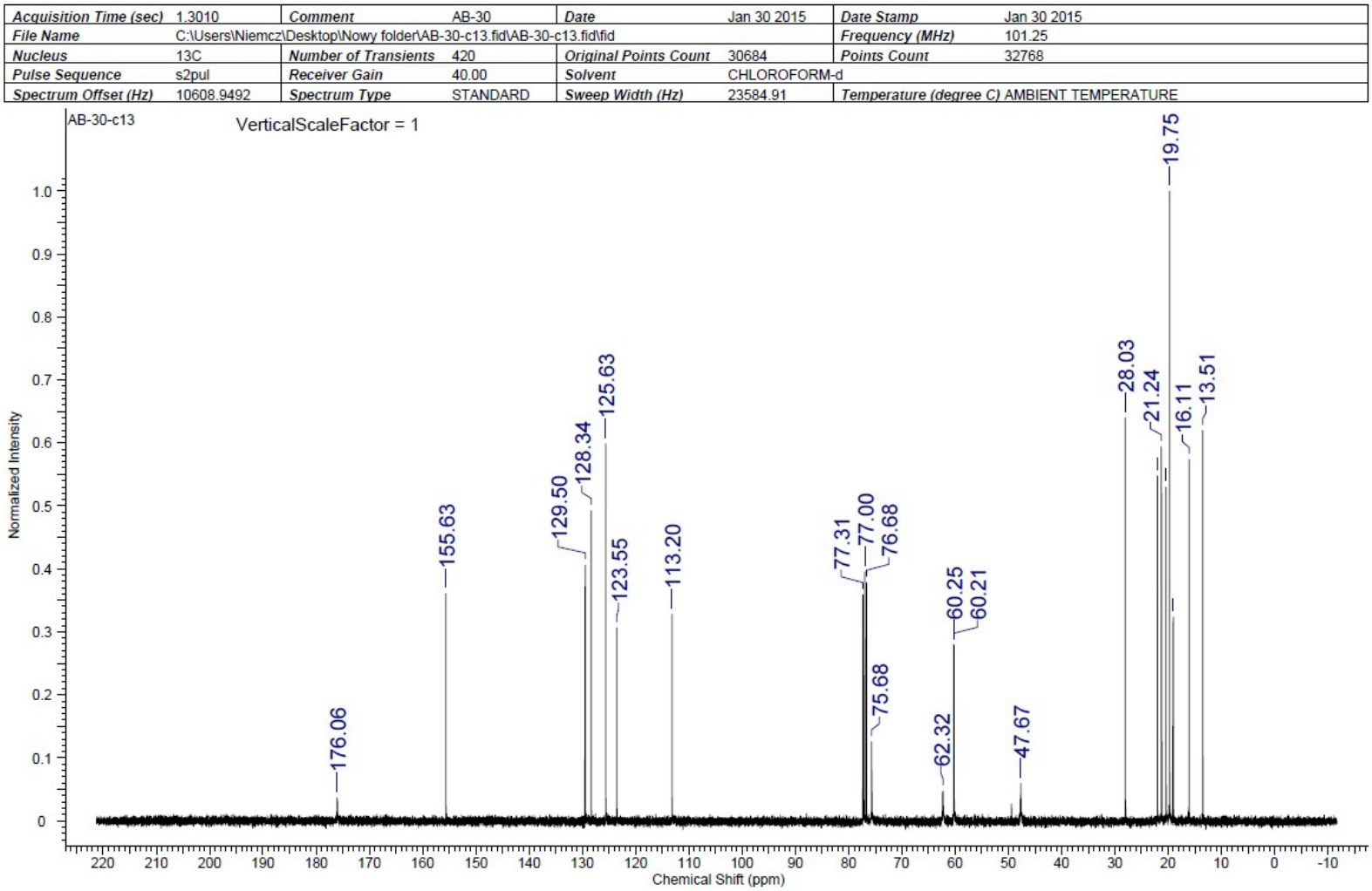

Figure S8. ^{13}C NMR spectrum of 1-methyl-1-pentylpiperidinium 2-(4-chloro-2-methylphenoxy)propionate (**4**)

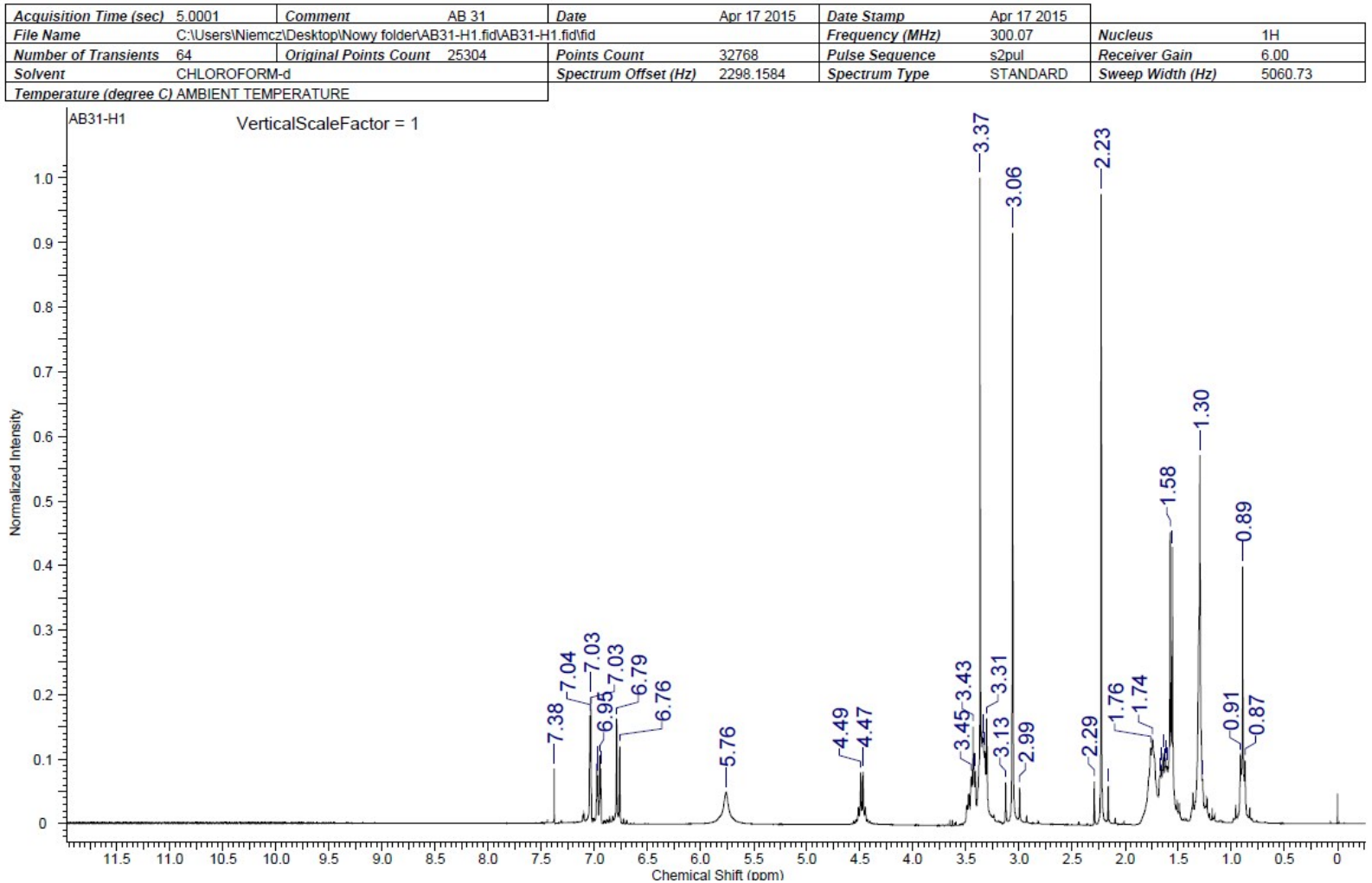

Figure S9. ^{1}H NMR spectrum of 1-hexyl-1-methylpiperidinium 2-(4-chloro-2-methylphenoxy)propionate (**5**)

Acquisition Time (sec)	0.6400	*Comment*	AB 31	*Date*	Apr 17 2015	*Date Stamp*	Apr 17 2015
File Name	C:\Users\Niemcz\Desktop\Nowy folder\AB31-C13.fid\AB31-C13.fid\fid					*Frequency (MHz)*	75.46
Nucleus	13C	*Number of Transients*	2148	*Original Points Count*	12191	*Points Count*	16384
Pulse Sequence	s2pul	*Receiver Gain*	30.00	*Solvent*	CHLOROFORM-d		
Spectrum Offset (Hz)	7946.1660	*Spectrum Type*	STANDARD	*Sweep Width (Hz)*	19047.62	*Temperature (degree C)*	AMBIENT TEMPERATURE

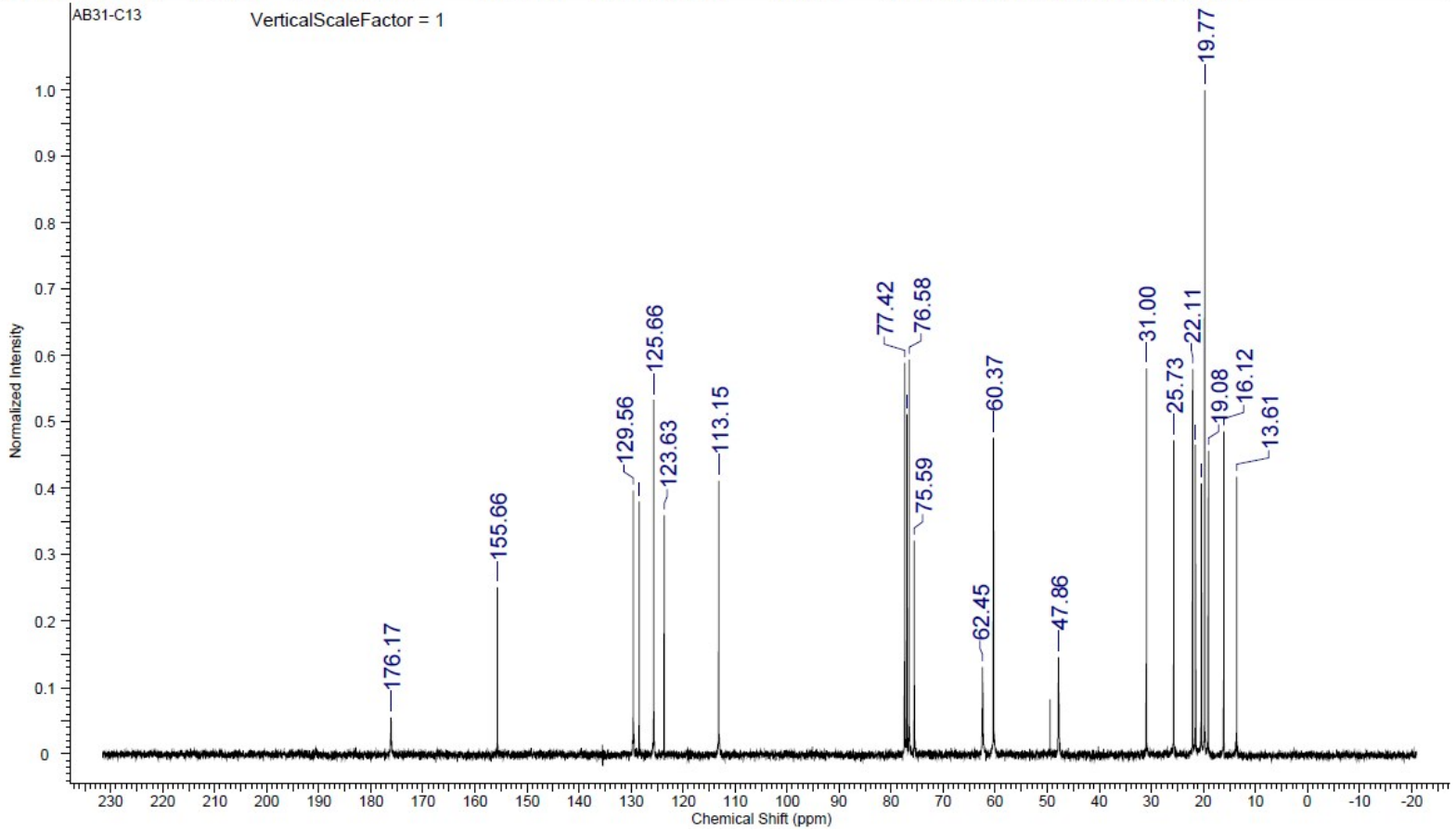

Figure S10. ^{13}C NMR spectrum 1-hexyl-1-methylpiperidinium 2-(4-chloro-2-methylphenoxy)propionate (**5**)

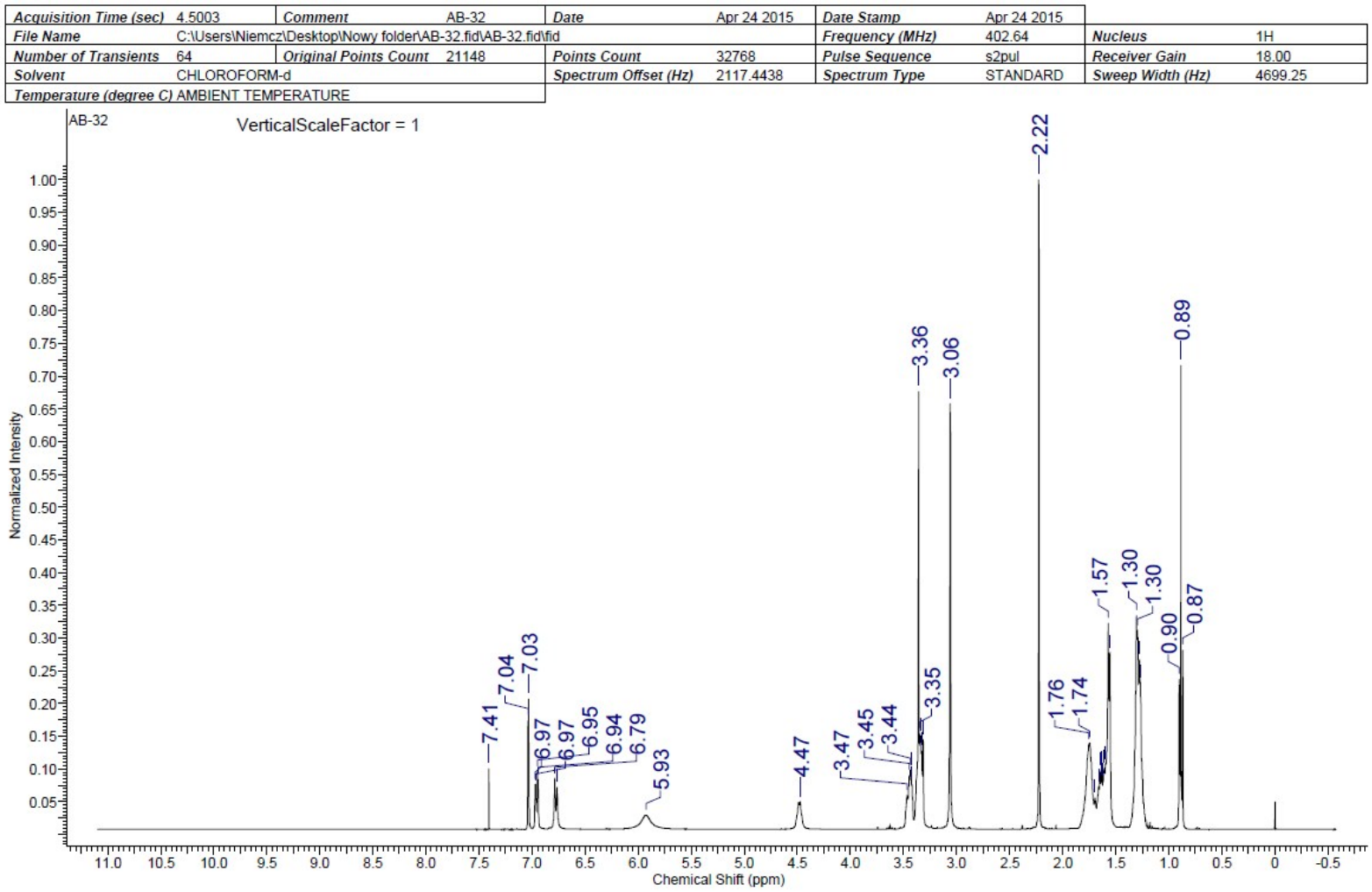

Figure S11. ^{1}H NMR spectrum of heptyl-1-methylpiperidinium 2-(4-chloro-2-methylphenoxy)propionate (**6**)

Acquisition Time (sec)	1.3010	*Comment*	AB-32	*Date*	Apr 24 2015	*Date Stamp*	Apr 24 2015
File Name	C:\Users\Niemcz\Desktop\Nowy folder\AB-32-c13.fid\AB-32-c13.fid\fid					*Frequency (MHz)*	101.25
Nucleus	13C	*Number of Transients*	1228	*Original Points Count*	28039	*Points Count*	32768
Pulse Sequence	s2pul	*Receiver Gain*	40.00	*Solvent*	CHLOROFORM-d		
Spectrum Offset (Hz)	9590.6719	*Spectrum Type*	STANDARD	*Sweep Width (Hz)*	21551.72	*Temperature (degree C)*	AMBIENT TEMPERATURE

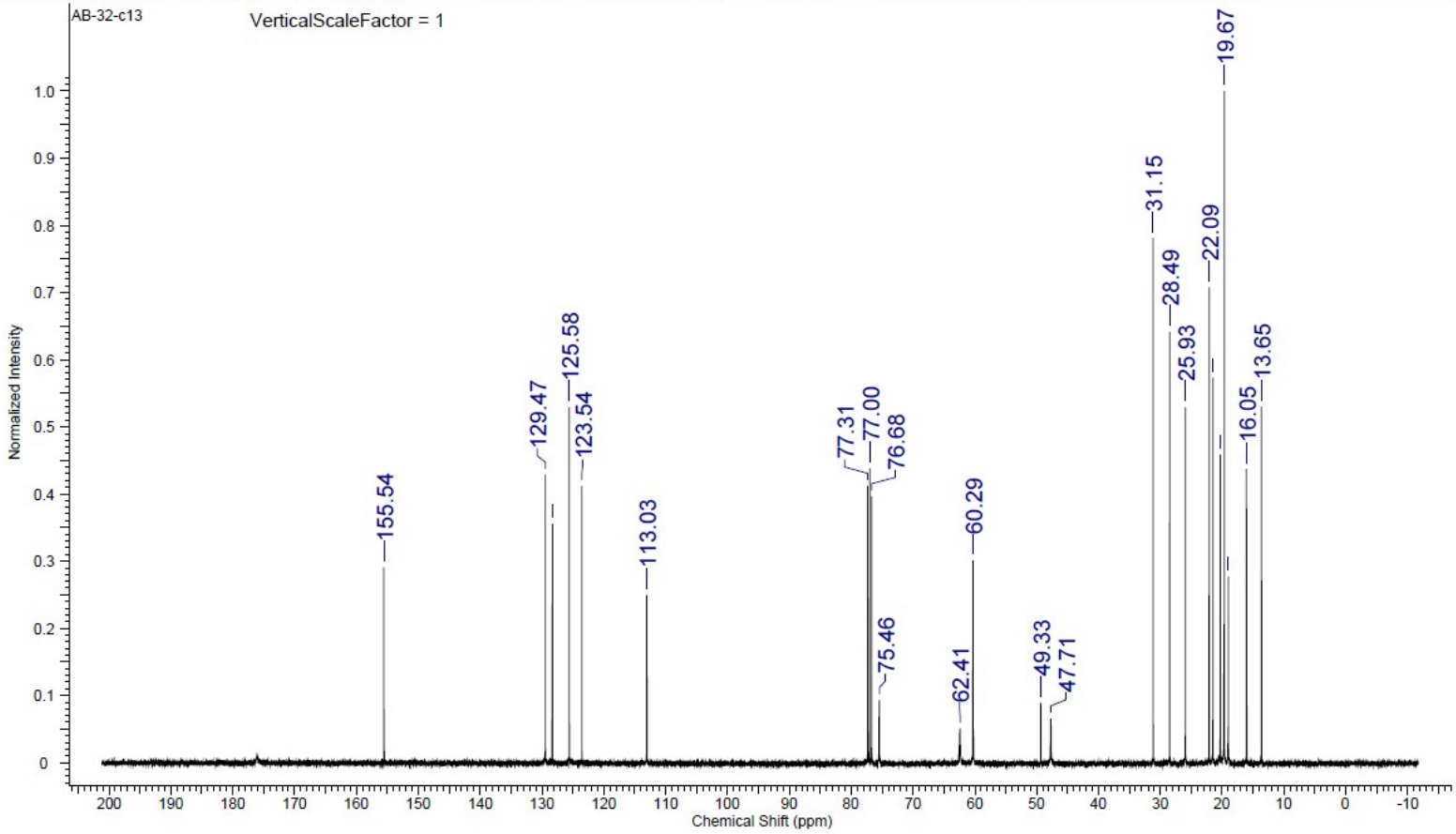

Figure S12. ^{13}C NMR spectrum of heptyl-1-methylpiperidinium 2-(4-chloro-2-methylphenoxy)propionate (**6**)

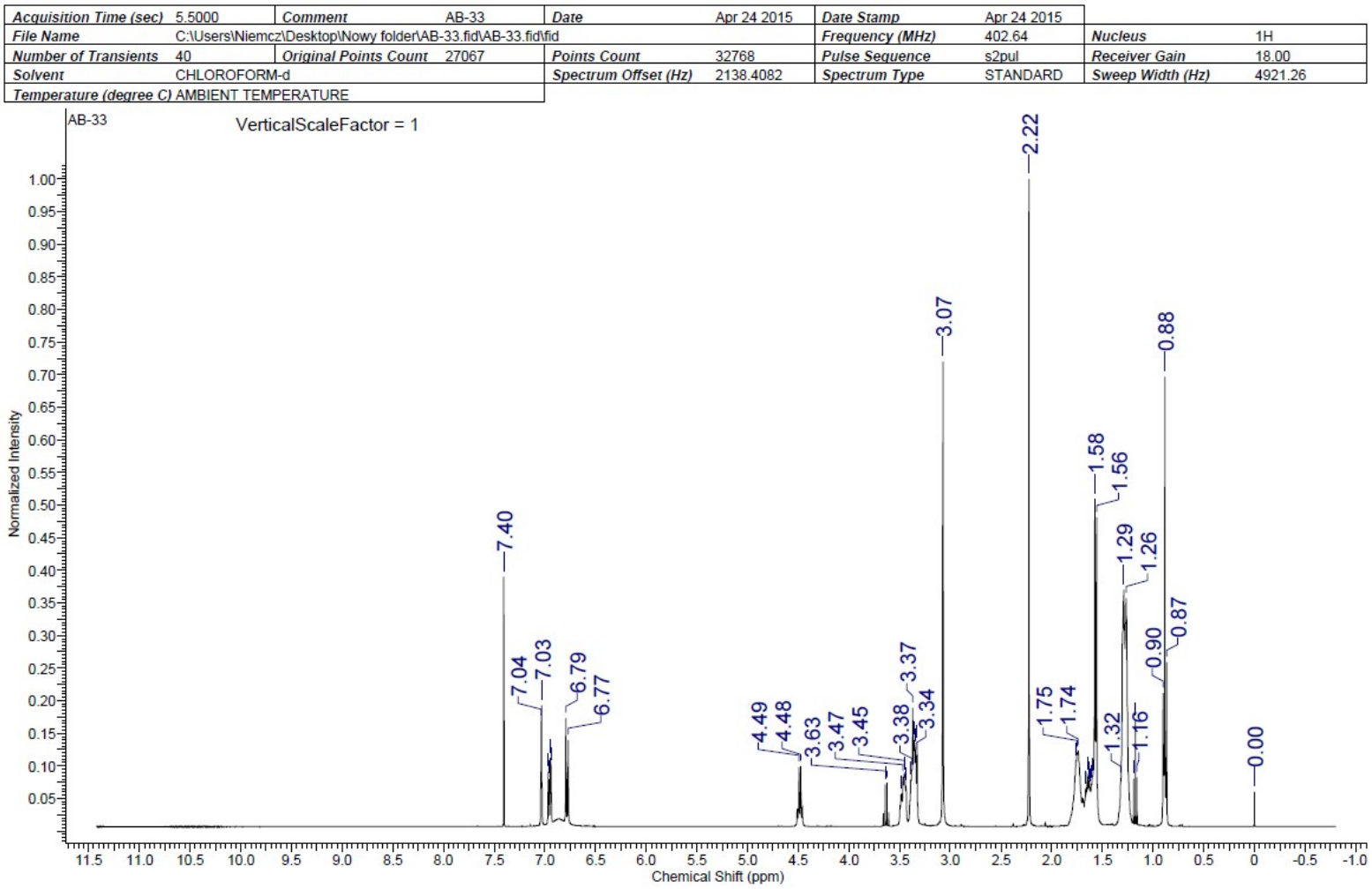

Figure S13. ^{1}H NMR spectrum of 1-methyl-1-octylpiperidinium 2-(4-chloro-2-methylphenoxy)propionate (**7**)

Acquisition Time (sec)	1.5010	*Comment*	AB-33	*Date*	Apr 24 2015	*Date Stamp*	Apr 24 2015
File Name	C:\Users\Niemcz\Desktop\Nowy folder\AB-33-C13.fid\AB-33-C13.fid\fid					*Frequency (MHz)*	101.25
Nucleus	13C	*Number of Transients*	688	*Original Points Count*	32349	*Points Count*	32768
Pulse Sequence	s2pul	*Receiver Gain*	44.00	*Solvent*	CHLOROFORM-d		
Spectrum Offset (Hz)	9591.3301	*Spectrum Type*	STANDARD	*Sweep Width (Hz)*	21551.72	*Temperature (degree C)*	AMBIENT TEMPERATURE

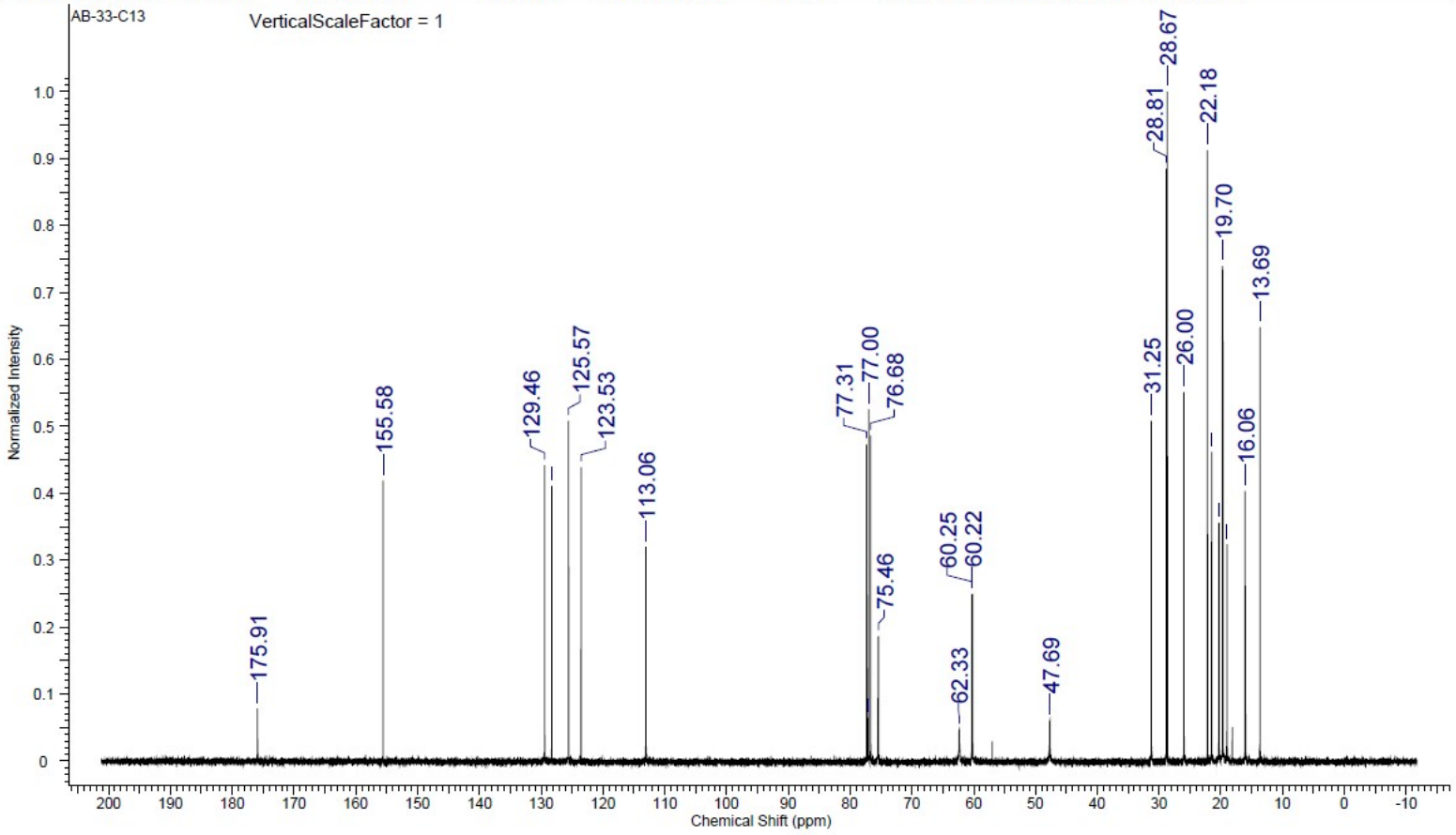

Figure S14. ^{13}C NMR spectrum of 1-methyl-1-octylpiperidinium 2-(4-chloro-2-methylphenoxy)propionate (**7**)

Acquisition Time (sec)	6.0000	*Comment*	AB 34	*Date*	Apr 27 2015	*Date Stamp*	Apr 27 2015
File Name	C:\Users\Niemcz\Desktop\Nowy folder\AB-34-H1.fid\AB-34-H1.fid\fid					*Frequency (MHz)*	402.64
Nucleus	1H	*Number of Transients*	64	*Original Points Count*	31915	*Points Count*	32768
Pulse Sequence	s2pul	*Receiver Gain*	22.00	*Solvent*	CHLOROFORM-d		
Spectrum Offset (Hz)	2254.4048	*Spectrum Type*	STANDARD	*Sweep Width (Hz)*	5319.15	*Temperature (degree C)*	AMBIENT TEMPERATURE

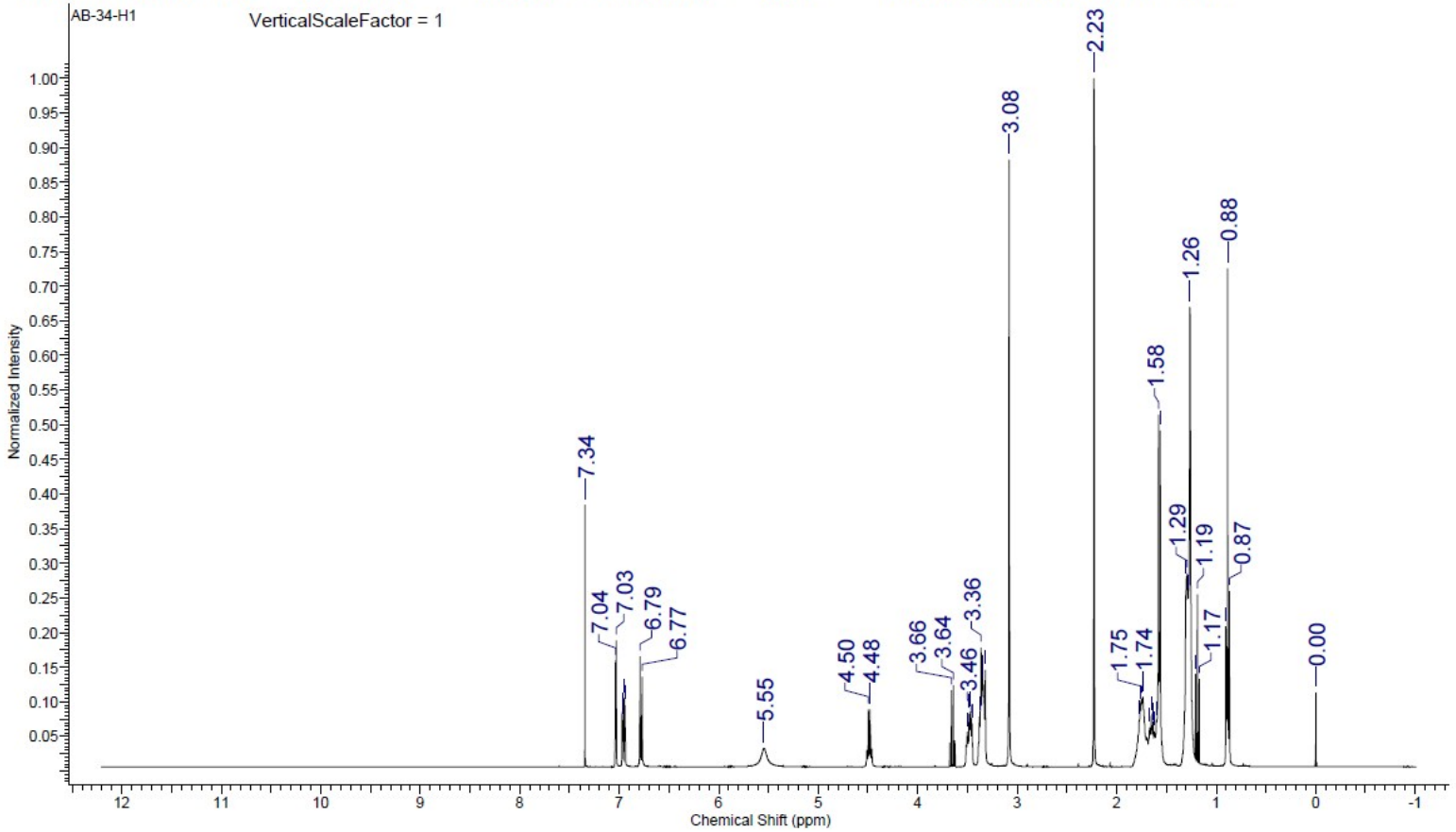

Figure S15. ^{1}H NMR spectrum of 1-methyl-1-nonylpiperidinium 2-(4-chloro-2-methylphenoxy)propionate (**8**)

Acquisition Time (sec)	1.3010	*Comment*	AB 34	*Date*	Apr 27 2015	*Date Stamp*	Apr 27 2015
File Name	C:\Users\Niemcz\Desktop\Nowy folder\AB-34-C13.fid\AB-34-C13.fid\fid					*Frequency (MHz)*	101.25
Nucleus	13C	*Number of Transients*	1004	*Original Points Count*	31274	*Points Count*	32768
Pulse Sequence	s2pul	*Receiver Gain*	40.00	*Solvent*	CHLOROFORM-d		
Spectrum Offset (Hz)	10869.5557	*Spectrum Type*	STANDARD	*Sweep Width (Hz)*	24038.46	*Temperature (degree C)*	AMBIENT TEMPERATURE

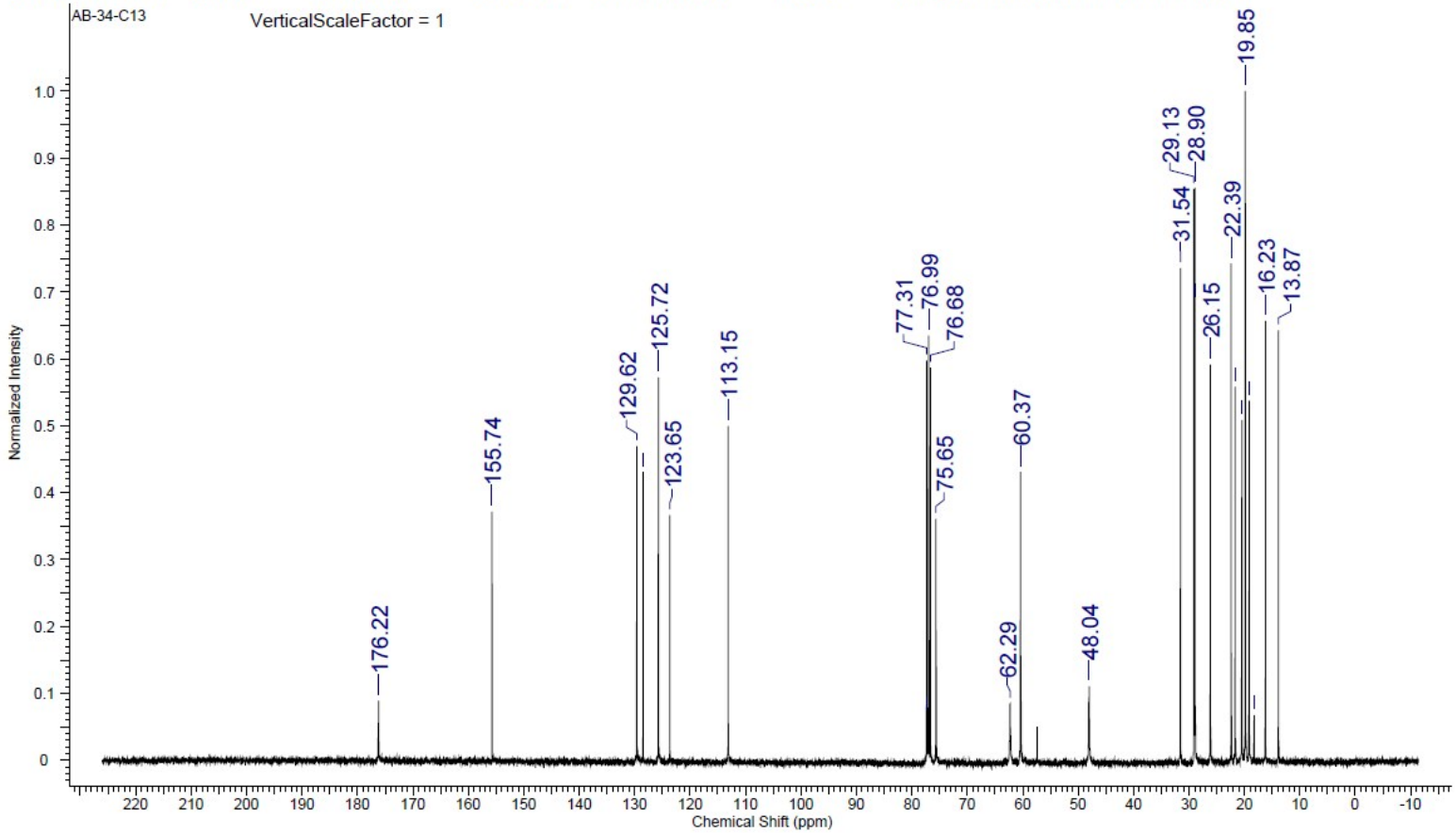

Figure S16. ^{13}C NMR spectrum of 1-methyl-1-nonylpiperidinium 2-(4-chloro-2-methylphenoxy)propionate (**8**)

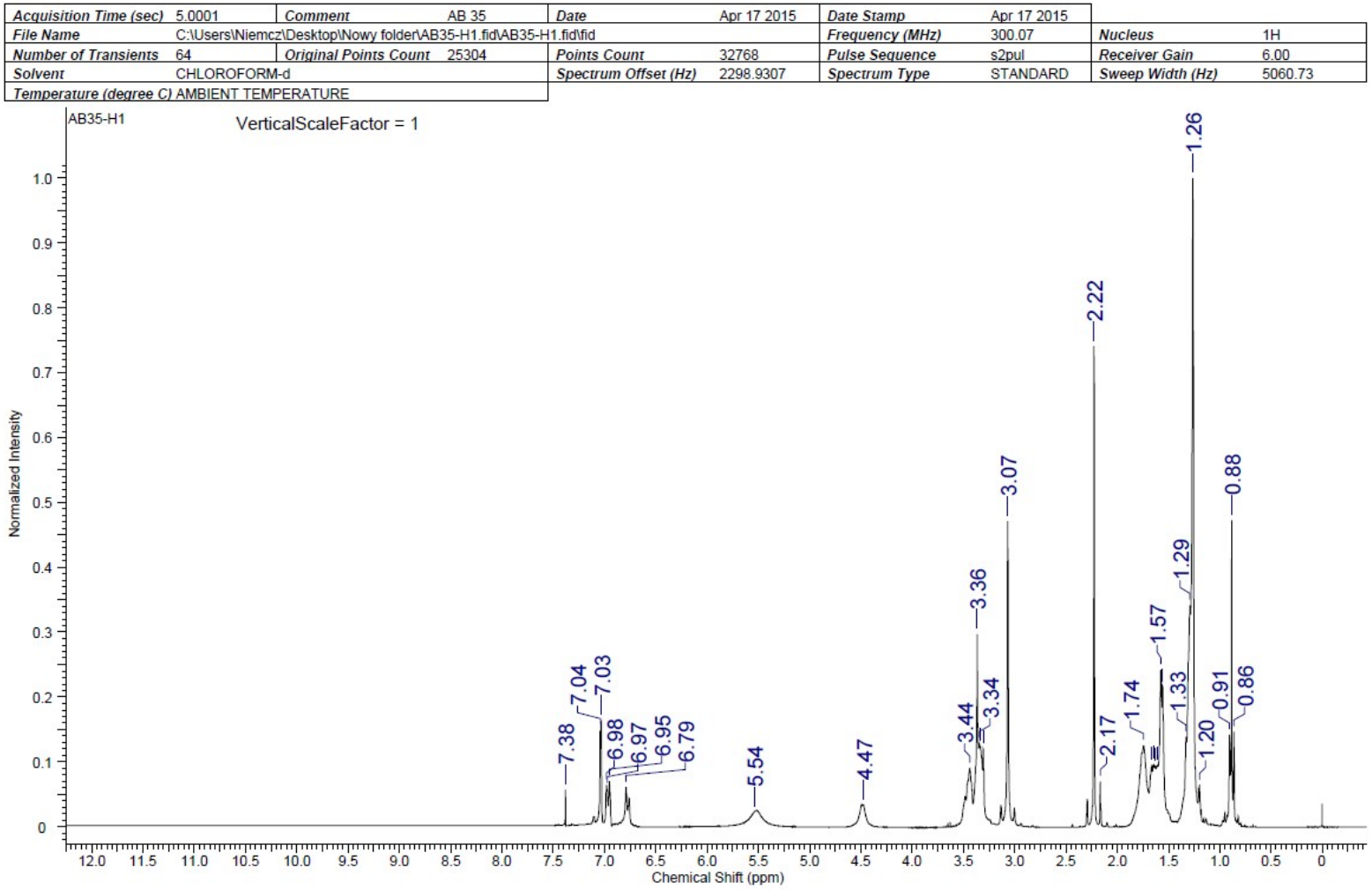

Figure S17. ^{1}H NMR spectrum of 1-decyl-1-methylpiperidinium 2-(4-chloro-2-methylphenoxy)propionate (**9**)

Acquisition Time (sec)	0.6400	*Comment*	AB 35	*Date*	Apr 17 2015	*Date Stamp*	Apr 17 2015
File Name	C:\Users\Niemcz\Desktop\Nowy folder\AB35-C13.fid\AB35-C13.fid\fid					*Frequency (MHz)*	75.46
Nucleus	13C	*Number of Transients*	1988	*Original Points Count*	12191	*Points Count*	16384
Pulse Sequence	s2pul	*Receiver Gain*	30.00	*Solvent*	CHLOROFORM-d		
Spectrum Offset (Hz)	7946.1660	*Spectrum Type*	STANDARD	*Sweep Width (Hz)*	19047.62	*Temperature (degree C)*	AMBIENT TEMPERATURE

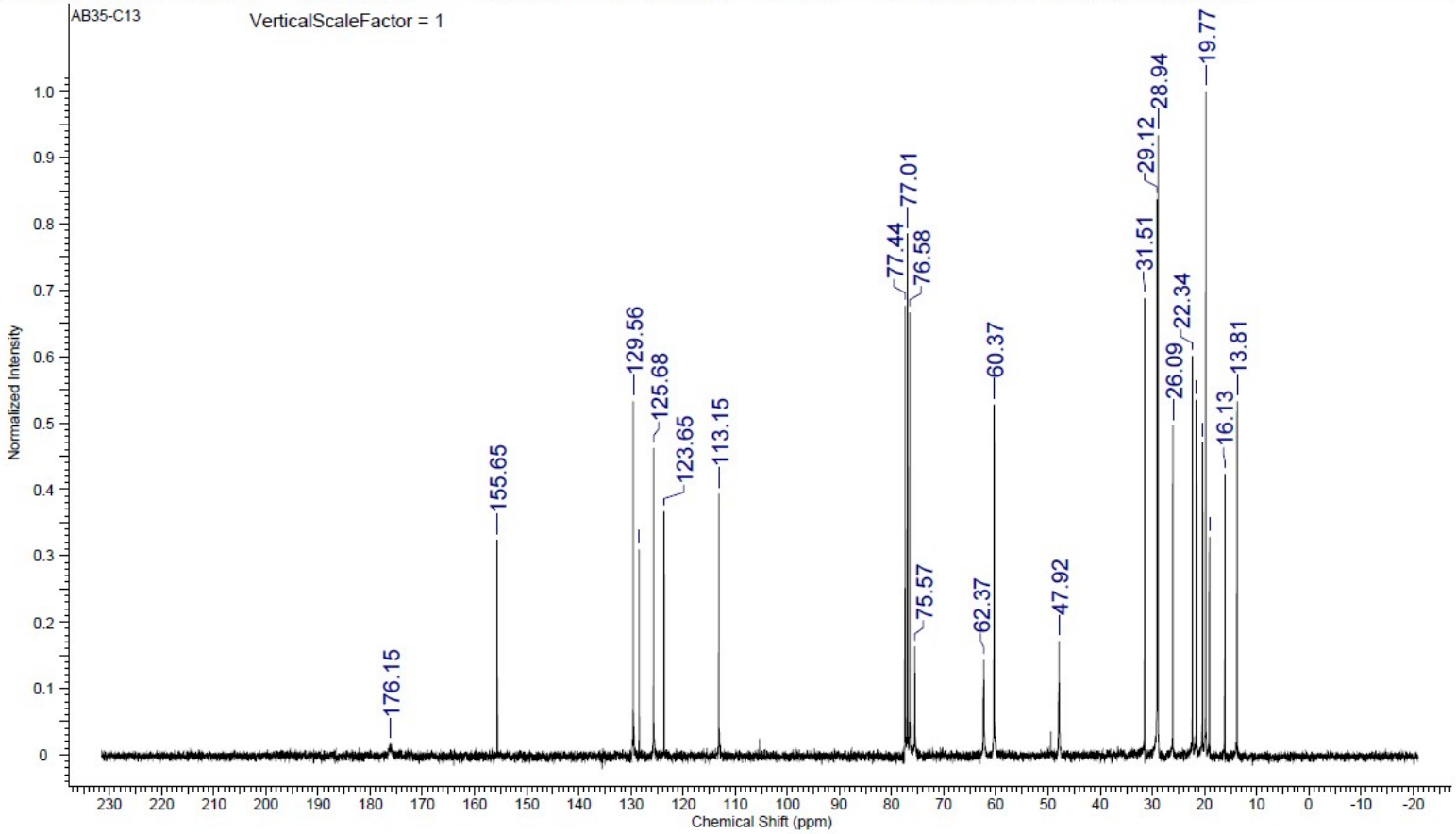

Figure S18. ^{13}C NMR spectrum of 1-decyl-1-methylpiperidinium 2-(4-chloro-2-methylphenoxy)propionate (**9**)

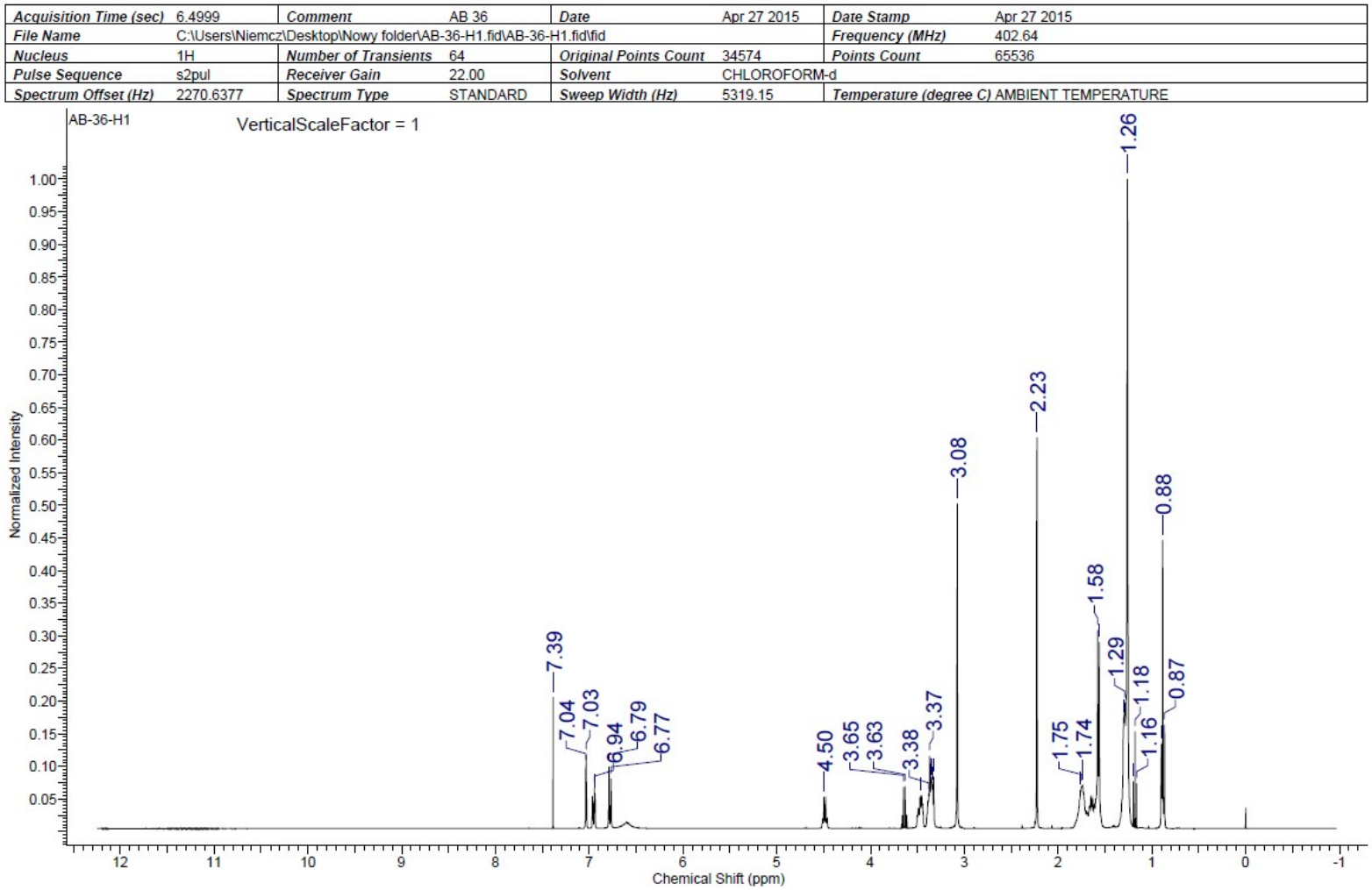

Figure S19. ^{1}H NMR spectrum of 1-methyl-1-undecylpiperidinium 2-(4-chloro-2-methylphenoxy)propionate (**10**)

Acquisition Time (sec)	1.3010	*Comment*	AB 36	*Date*	Apr 27 2015	*Date Stamp*	Apr 27 2015
File Name	C:\Users\Niemcz\Desktop\Nowy folder\AB-36-C13.fid\AB-36-C13.fid\fid					*Frequency (MHz)*	101.25
Nucleus	13C	*Number of Transients*	1212	*Original Points Count*	31274	*Points Count*	32768
Pulse Sequence	s2pul	*Receiver Gain*	40.00	*Solvent*	CHLOROFORM-d		
Spectrum Offset (Hz)	10862.2207	*Spectrum Type*	STANDARD	*Sweep Width (Hz)*	24038.46	*Temperature (degree C)*	AMBIENT TEMPERATURE

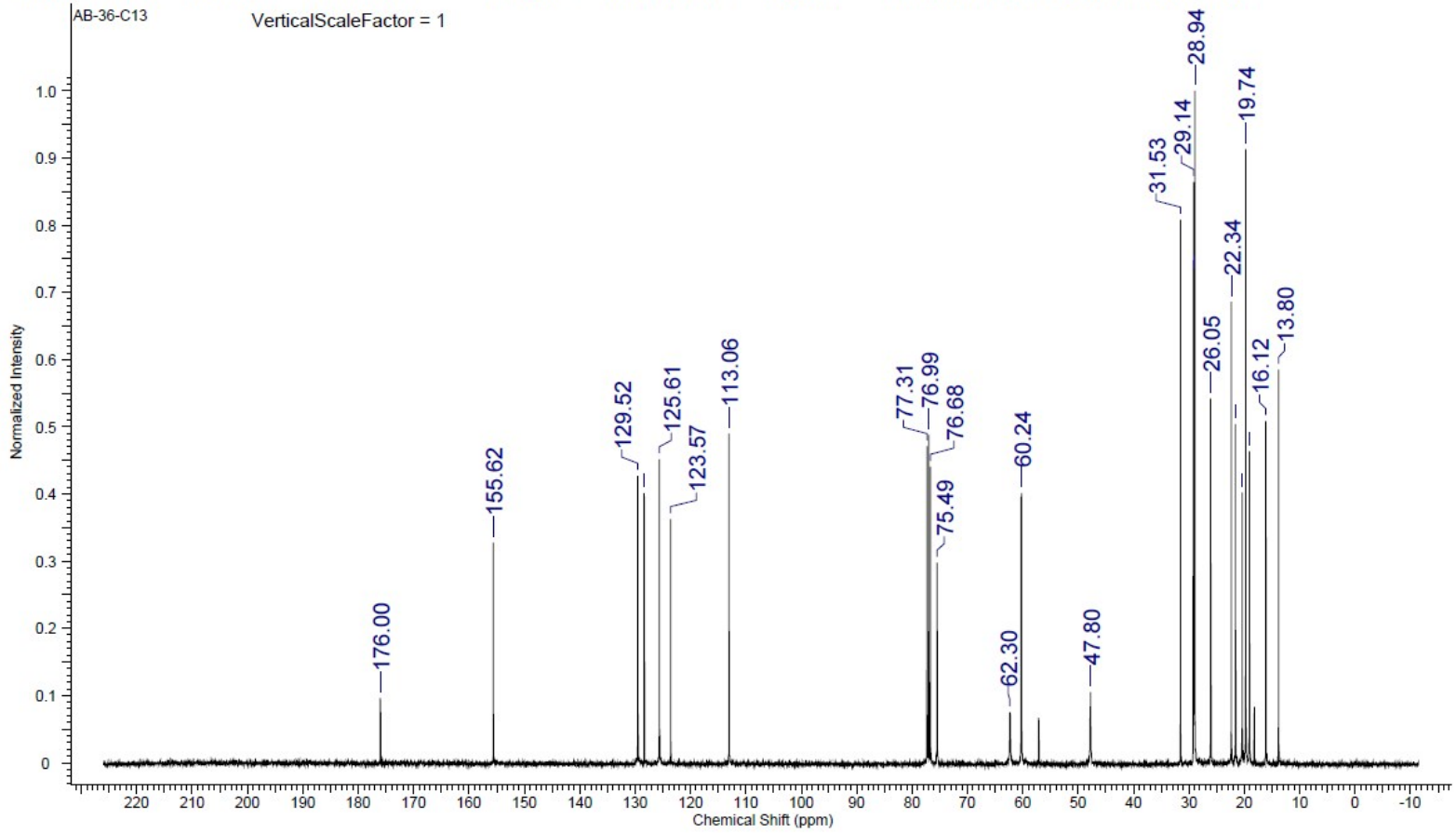

Figure S20. ^{13}C NMR spectrum of 1-methyl-1-undecylpiperidinium 2-(4-chloro-2-methylphenoxy)propionate (**10**)

Acquisition Time (sec)	6.4999	*Comment*	AB 37	*Date*	Apr 27 2015	*Date Stamp*	Apr 27 2015
File Name	C:\Users\Niemcz\Desktop\Nowy folder\AB-37-H1.fid\AB-37-H1.fid\fid					*Frequency (MHz)*	402.64
Nucleus	1H	*Number of Transients*	64	*Original Points Count*	34574	*Points Count*	65536
Pulse Sequence	s2pul	*Receiver Gain*	22.00	*Solvent*	CHLOROFORM-d		
Spectrum Offset (Hz)	2253.2686	*Spectrum Type*	STANDARD	*Sweep Width (Hz)*	5319.15	*Temperature (degree C)*	AMBIENT TEMPERATURE

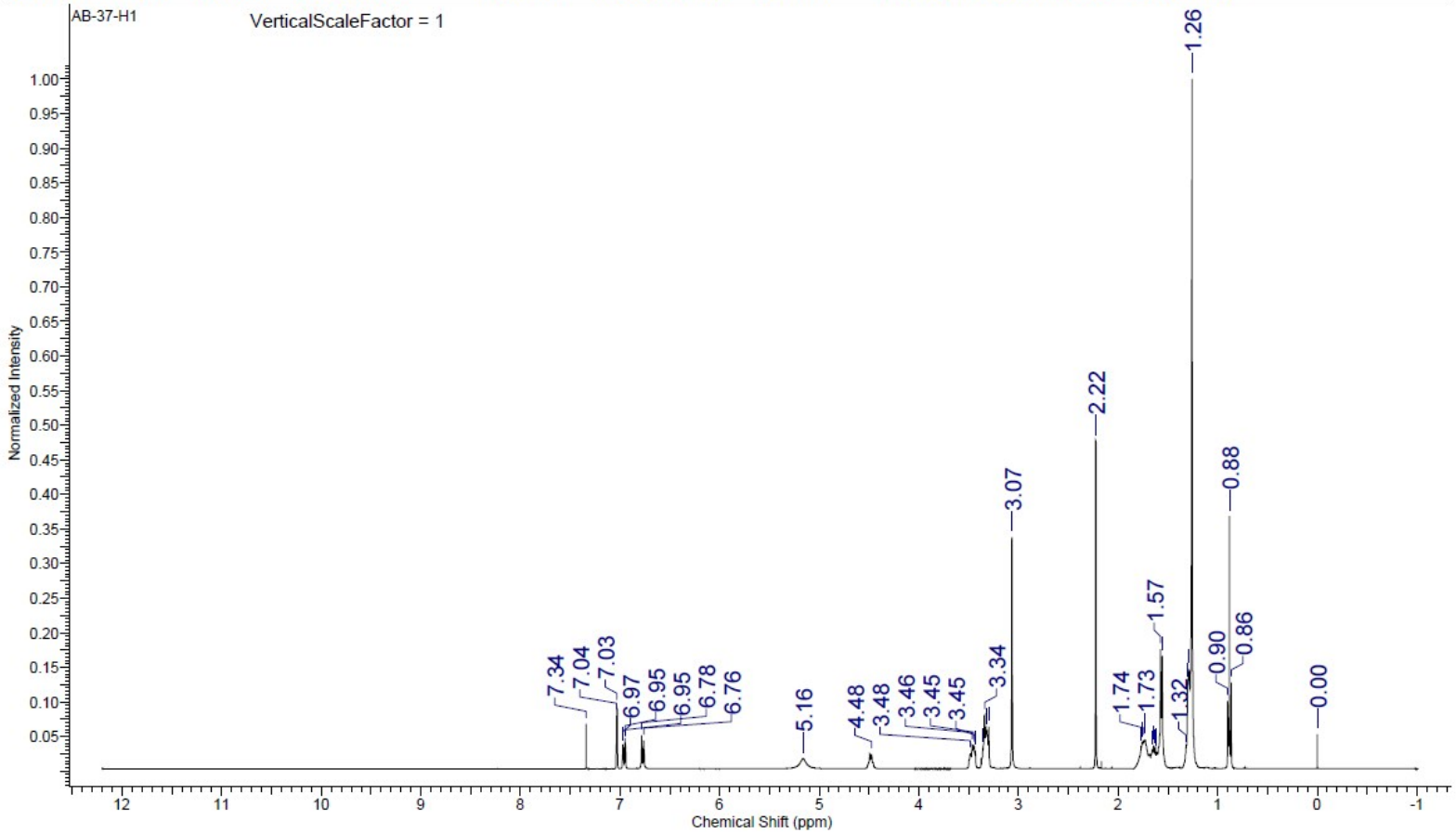

Figure S21. ^{1}H NMR spectrum of 1-dodecyl-1-methylpiperidinium 2-(4-chloro-2-methylphenoxy)propionate (**11**)

Acquisition Time (sec)	1.3010	*Comment*	AB 37	*Date*	Apr 27 2015	*Date Stamp*	Apr 27 2015
File Name	C:\Users\Niemcz\Desktop\Nowy folder\AB-37-C13.fid\AB-37-C13.fid\fid					*Frequency (MHz)*	101.25
Nucleus	13C	*Number of Transients*	1864	*Original Points Count*	31274	*Points Count*	32768
Pulse Sequence	s2pul	*Receiver Gain*	40.00	*Solvent*	CHLOROFORM-d		
Spectrum Offset (Hz)	10869.5557	*Spectrum Type*	STANDARD	*Sweep Width (Hz)*	24038.46	*Temperature (degree C)*	AMBIENT TEMPERATURE

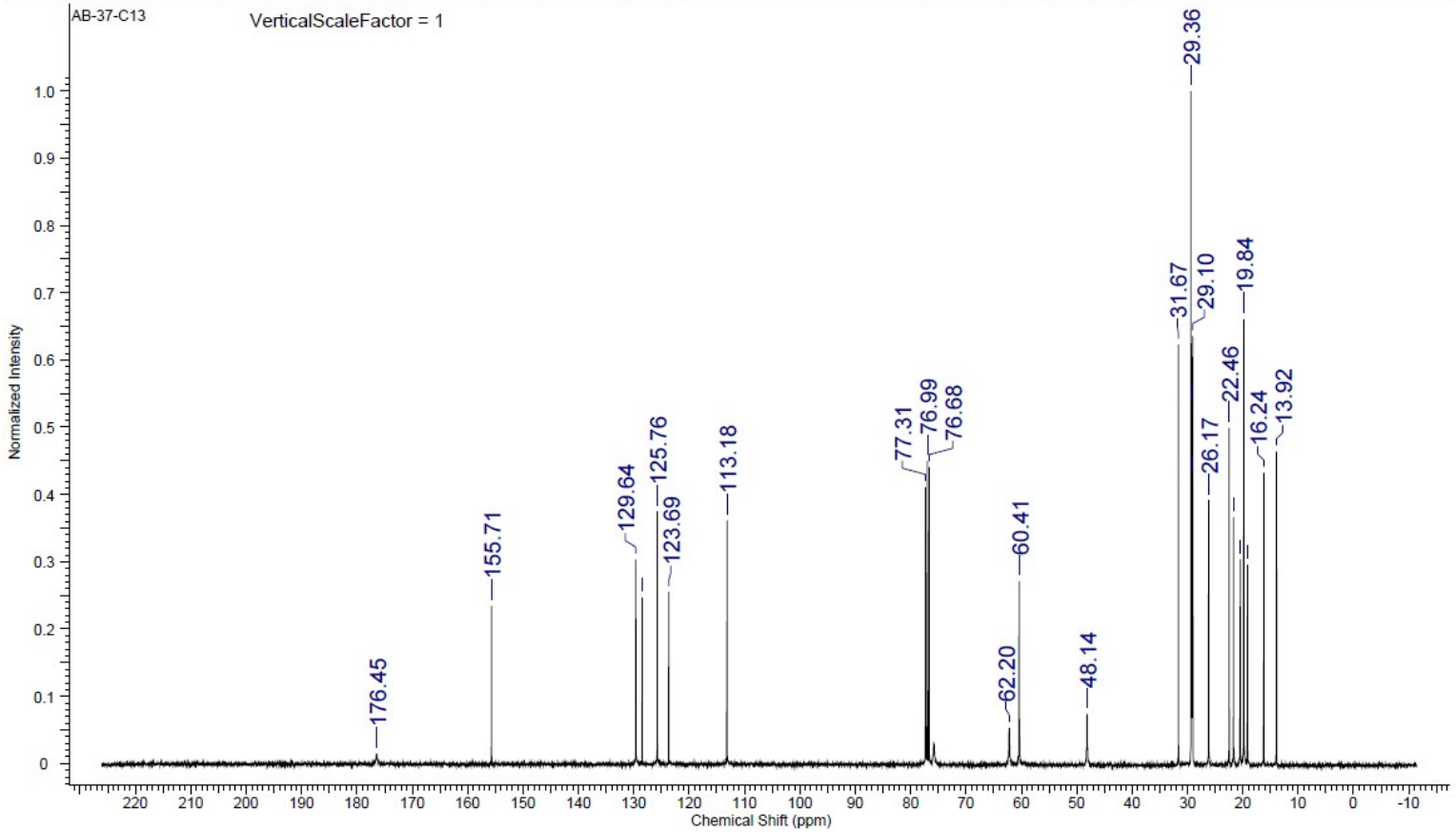

Figure S22. ^{13}C NMR spectrum of 1-dodecyl-1-methylpiperidinium 2-(4-chloro-2-methylphenoxy)propionate (**11**)

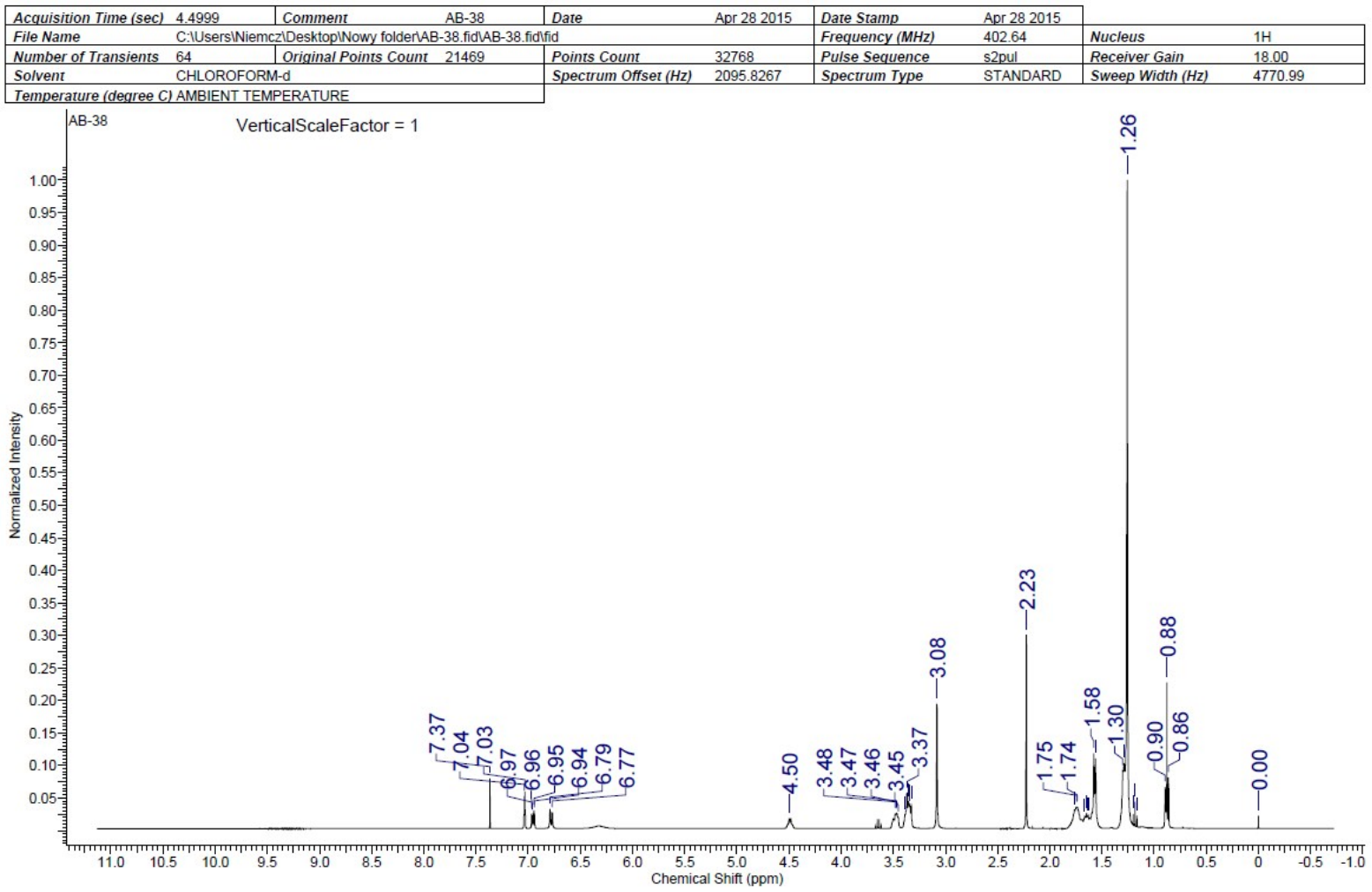

Figure S23. ^{1}H NMR spectrum of 1-methyl-1-tetradecylpiperidinium 2-(4-chloro-2-methylphenoxy)propionate (**12**)

Acquisition Time (sec)	1.3010	*Comment*	AB-38	*Date*	Apr 28 2015	*Date Stamp*	Apr 28 2015
File Name	C:\Users\Niemcz\Desktop\Nowy folder\AB-38-c13.fid\AB-38-c13.fid\fid					*Frequency (MHz)*	101.25
Nucleus	13C	*Number of Transients*	608	*Original Points Count*	28039	*Points Count*	32768
Pulse Sequence	s2pul	*Receiver Gain*	40.00	*Solvent*	CHLOROFORM-d		
Spectrum Offset (Hz)	9600.2080	*Spectrum Type*	STANDARD	*Sweep Width (Hz)*	21551.72	*Temperature (degree C)*	AMBIENT TEMPERATURE

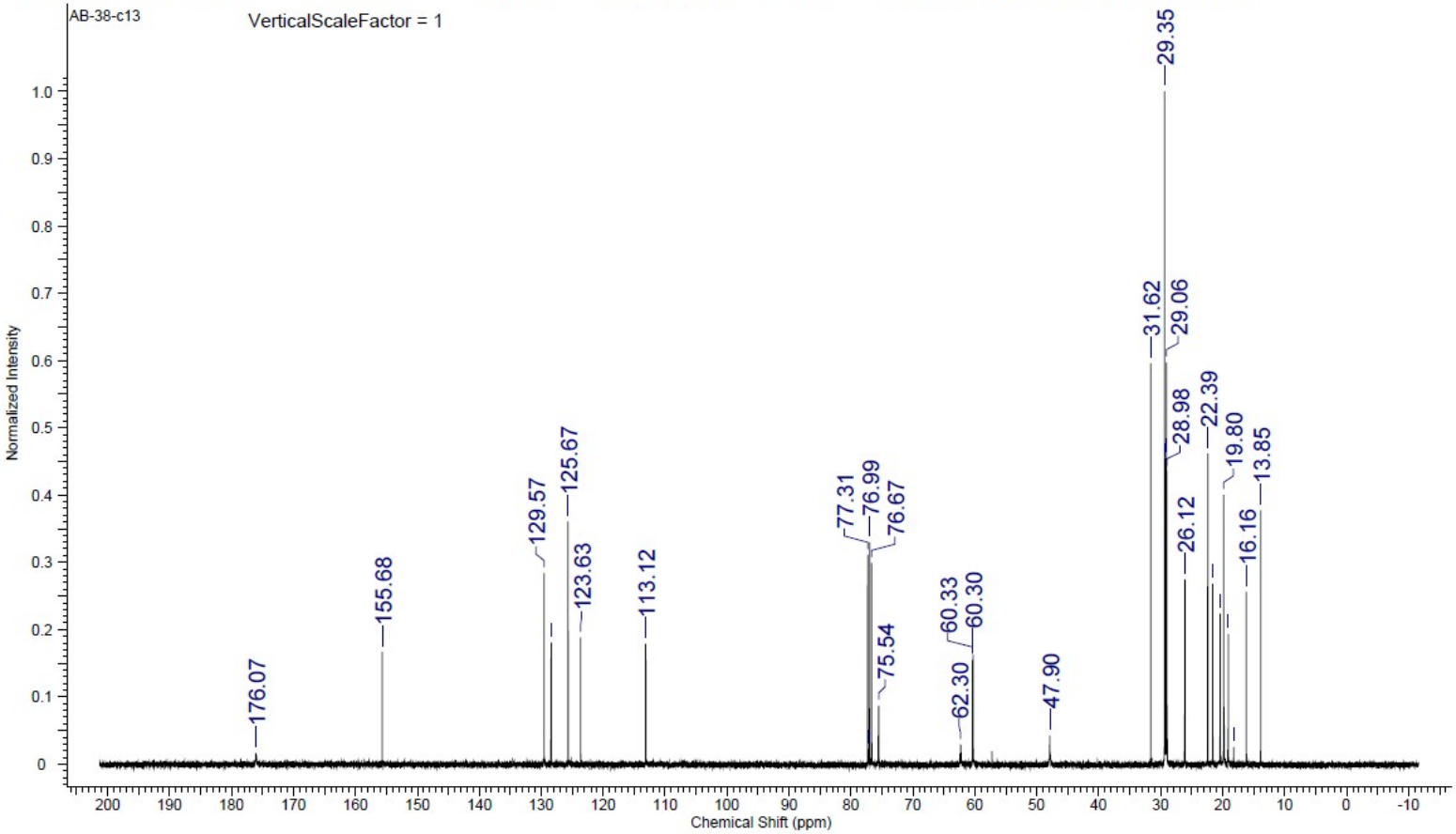

Figure S24. ^{13}C NMR spectrum of 1-methyl-1-tetradecylpiperidinium 2-(4-chloro-2-methylphenoxy)propionate (**12**)

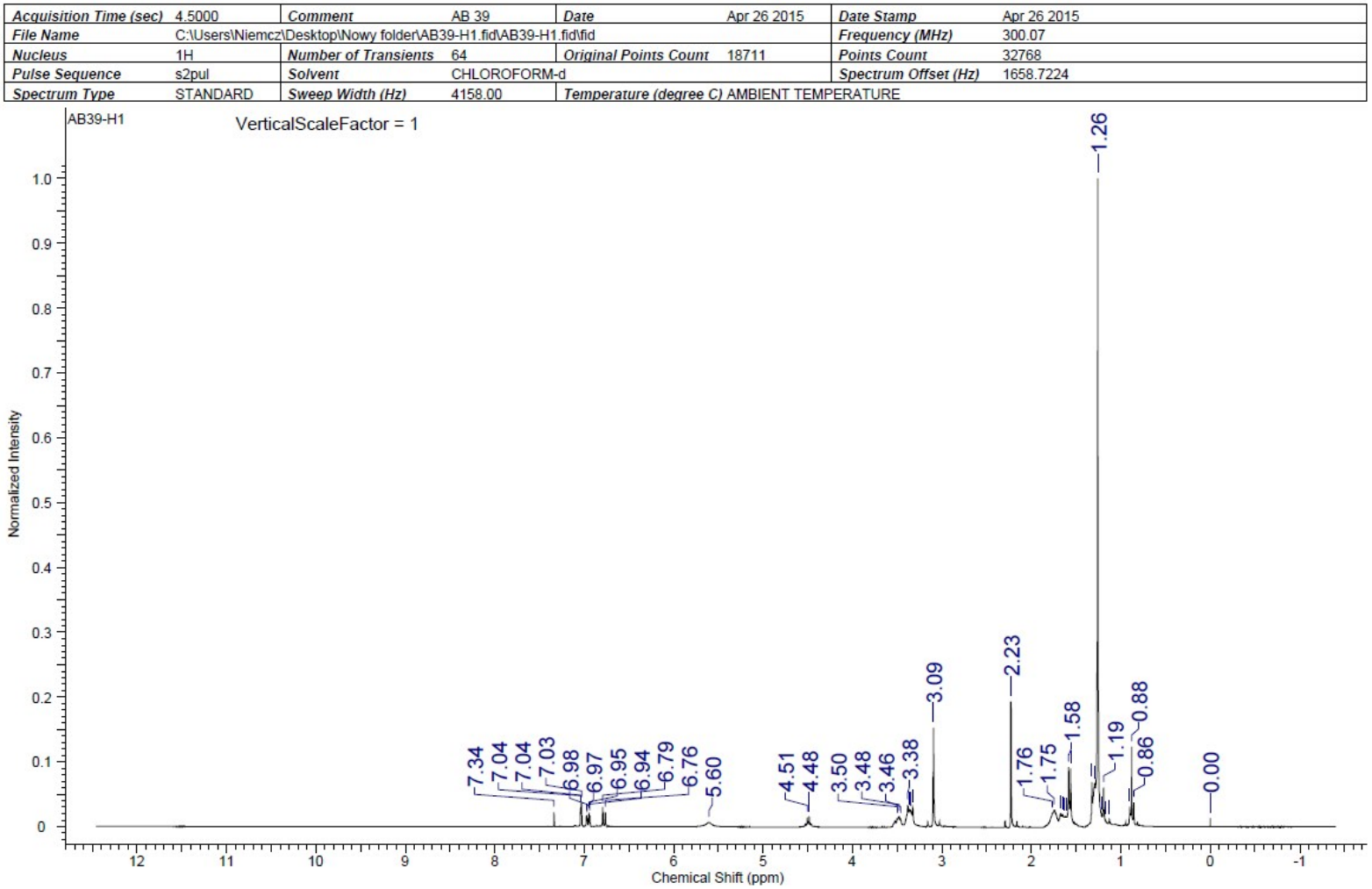

Figure S25. ^{1}H NMR spectrum of 1-hexadecyl-1-methylpiperidinium 2-(4-chloro-2-methylphenoxy)propionate (**13**)

Acquisition Time (sec)	0.6400	*Comment*	AB 39	*Date*	Apr 26 2015	*Date Stamp*	Apr 26 2015
File Name	C:\Users\Niemcz\Desktop\Nowy folder\AB39-C13.fid\AB39-C13.fid\fid					*Frequency (MHz)*	75.46
Nucleus	13C	*Number of Transients*	3088	*Original Points Count*	10257	*Points Count*	16384
Pulse Sequence	s2pul	*Receiver Gain*	34.00	*Solvent*	CHLOROFORM-d		
Spectrum Offset (Hz)	7202.2539	*Spectrum Type*	STANDARD	*Sweep Width (Hz)*	16025.64	*Temperature (degree C)*	AMBIENT TEMPERATURE

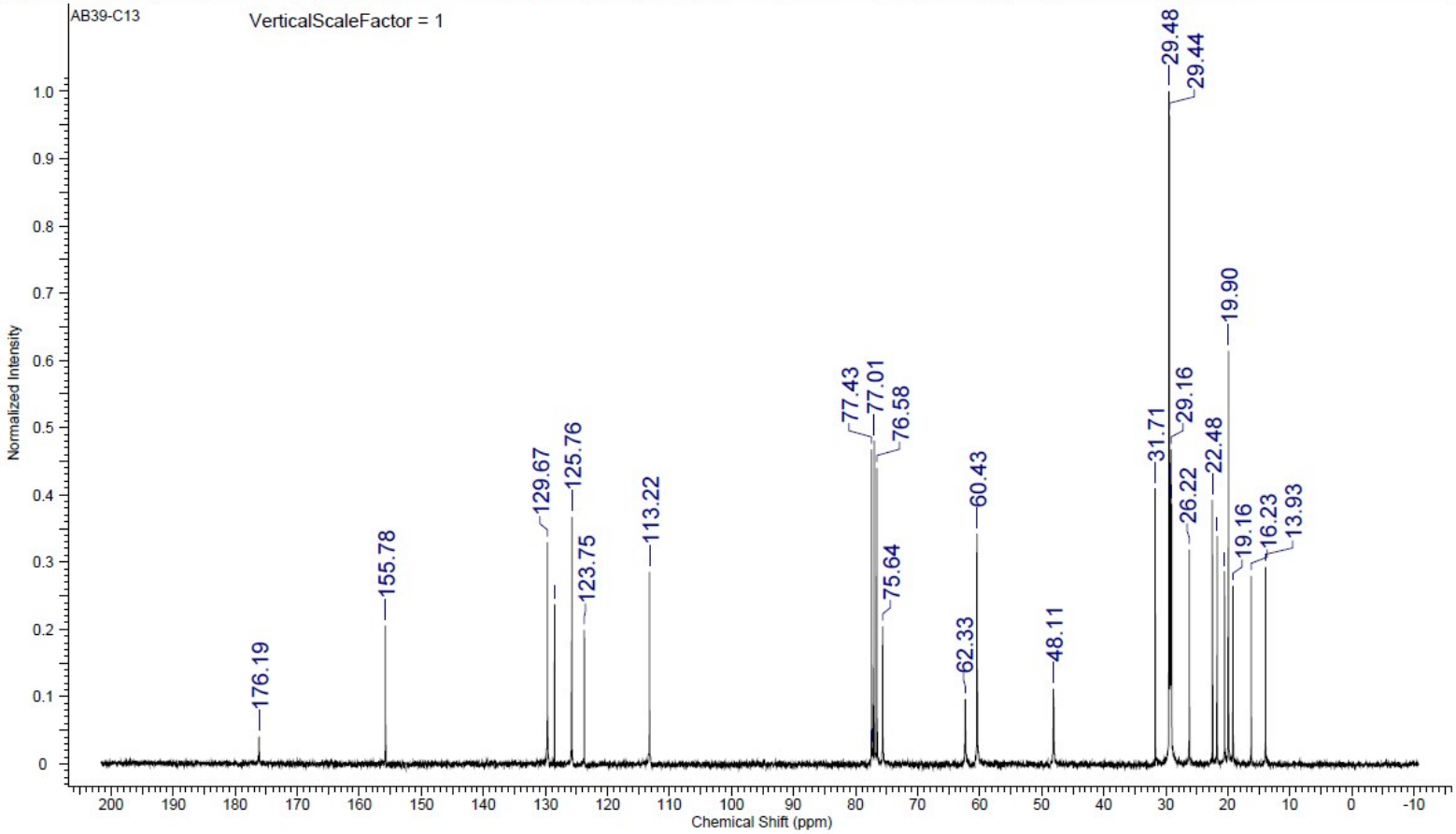

Figure S26. ^{13}C NMR spectrum of 1-hexadecyl-1-methylpiperidinium 2-(4-chloro-2-methylphenoxy)propionate (**13**)

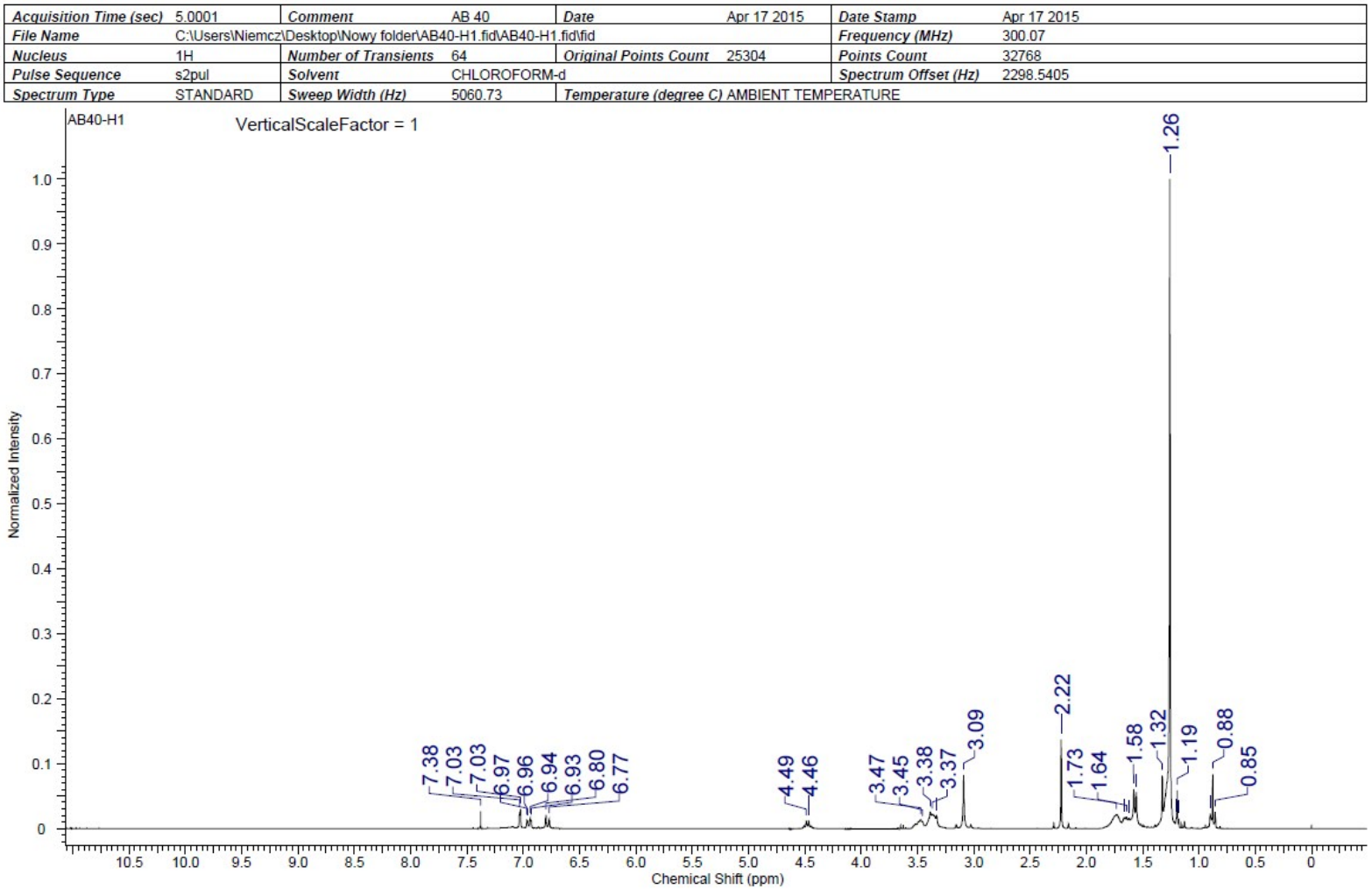

Figure S27. ^{1}H NMR spectrum of 1-methyl-1-octadecylpiperidinium 2-(4-chloro-2-methylphenoxy)propionate (**14**)

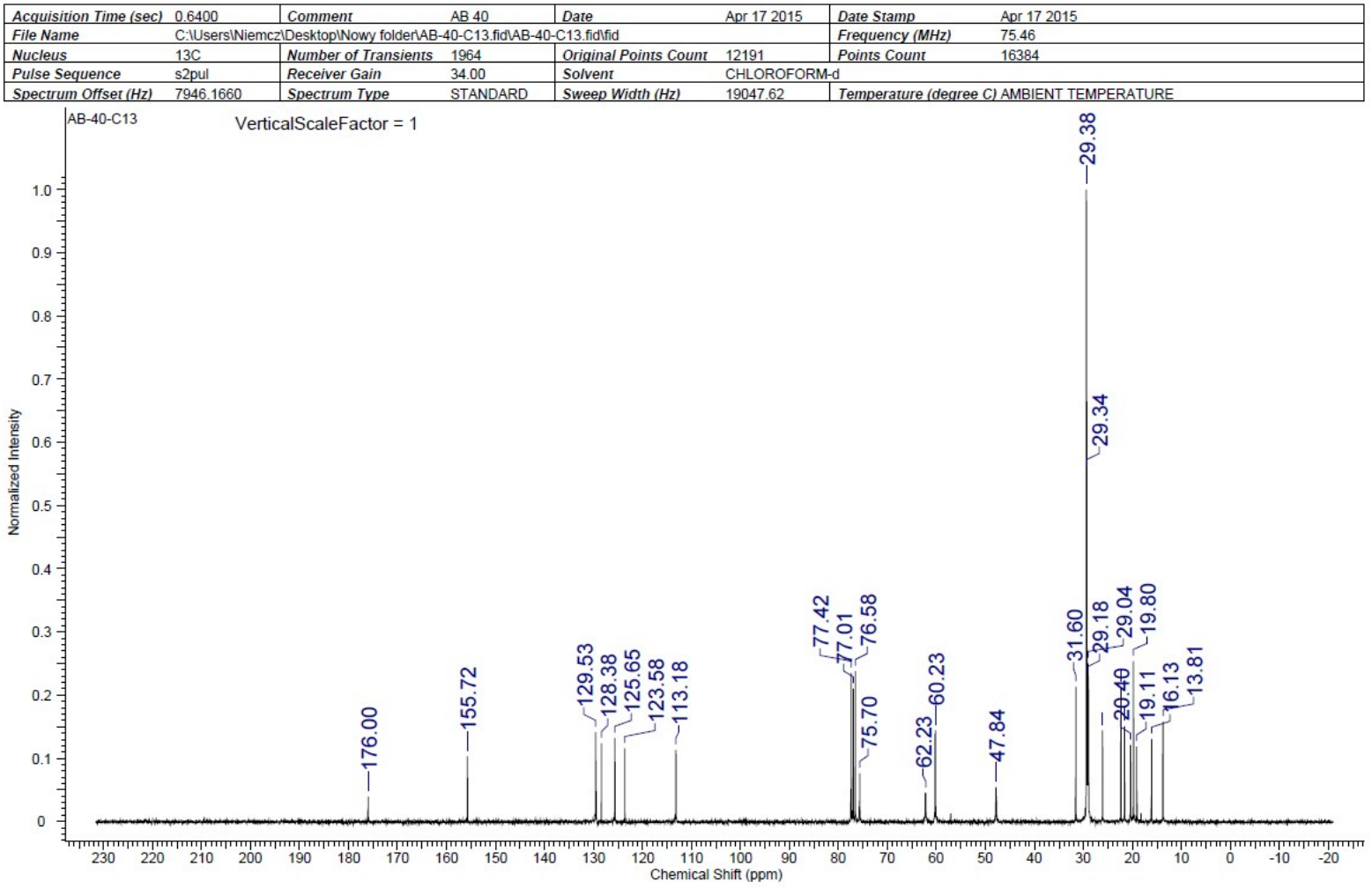

Figure S28. ^{13}C NMR spectrum of 1-methyl-1-octadecylpiperidinium 2-(4-chloro-2-methylphenoxy)propionate (**14**)

The following abbreviations were used to explain the multiplicities:

s = singlet, d = doublet, dd = doublet of doublets, t = triplet, m = multiplet.