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SUPPLEMENTRY INFORMATION

Sustainable Oleic and Stearic Acid Based Biodegradable Surfactants

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2-bromoethyl 2-bromoacetate. Transparent liquid, yield 63.4%. ^{1}H NMR (500 MHz, $CDCl_3$) 4.48 (m, 2 H, COOCH_2CH$_2$), 3.88 (s, 2 H, COOCH_2Br), 3.54 (t, J = 3.70, 2 H, CH_2Br). ^{13}C NMR (126 MHz, $CDCl_3$) 166.49, 64.99, 28.01, 25.42.

2-(2-bromoethoxy)-2-oxoethyl oleate. Yellowish viscous liquid, yield 82.2%. ^{1}H NMR (500 MHz, $CDCl_3$) 5.34 (m, 2 H, CH=CH), 4.65 (m, 2 H, COOCH_2COO), 4.47 (t, J = 6.1, 2 H, COOCH_2), 3.51 (t, J = 6.1, 2 H, BrCH_2), 2.42 (t, J = 7.5, 2 H, CH_2COO), 2.01 (m, 4 H, CH_2CH=CHCH_2), 1.65 (m, 2 H, CH_2CH$_2$COO), 1.30-1.26 (m, 20 H, 10×CH_2), 0.88 (t, J = 6.8, 3 H, CH_3). ^{13}C NMR (126 MHz, $CDCl_3$) 172.61, 167.13, 129.61, 129.37, 64.11, 60.01, 33.38, 31.63, 29.48, 29.40, 29.26, 29.05, 28.87, 28.79, 28.73, 27.87, 26.91, 26.87, 24.49, 22.40, 13.82.

2-(2-bromoethoxy)-2-oxoethyl stearate. White waxy solid, yield 83.4%. ^{1}H NMR (500 MHz, $CDCl_3$) 4.65 (s, 2 H, COOCH_2COO), 4.47 (t, J = 6.1, 2 H, COOCH_2), 3.51 (dd, J = 6.1, 2 H,), 2.42 (2 H, t, J = 7.5), 1.66 (2 H, m), 1.25 (28 H, s), 0.88 (3 H, t, J = 6.6). ^{13}C NMR (126 MHz, $CDCl_3$) 172.83, 167.31, 64.24, 60.15, 33.57, 31.80, 29.57, 29.48, 29.32, 29.24, 29.12, 28.90, 27.91, 24.64, 22.56, 13.96.

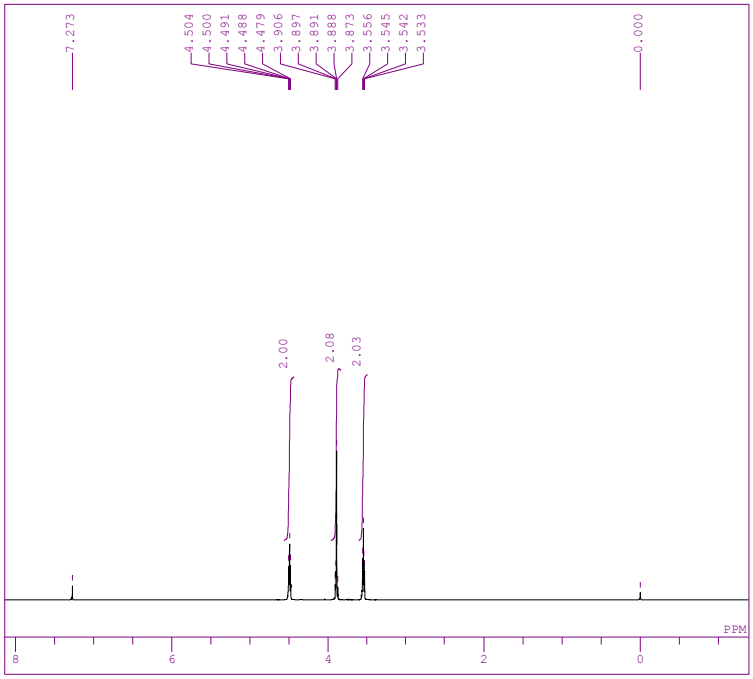

Figure S1: ^{1}H NMR spectra of 2-bromoethyl 2-bromoacetate.

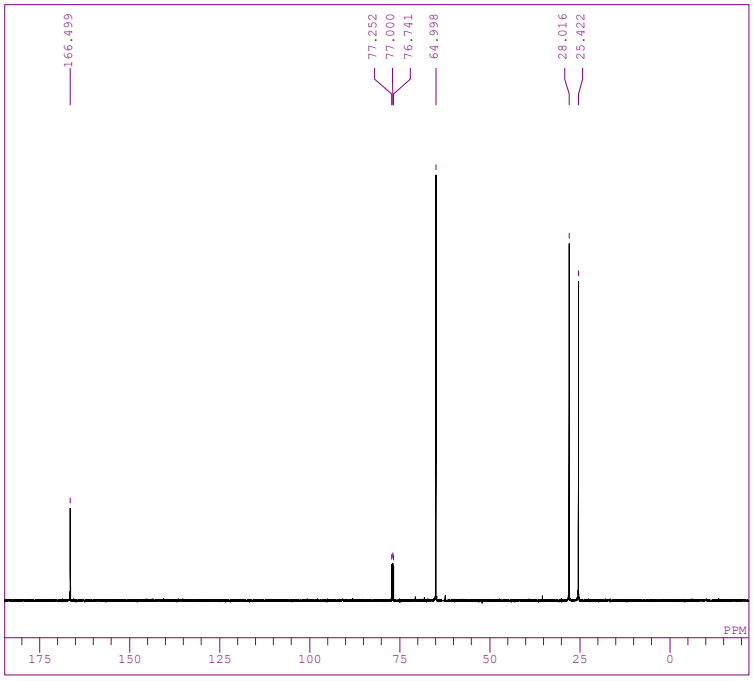

Figure S2: ^{13}C NMR spectra of 2-bromoethyl 2-bromoacetate.

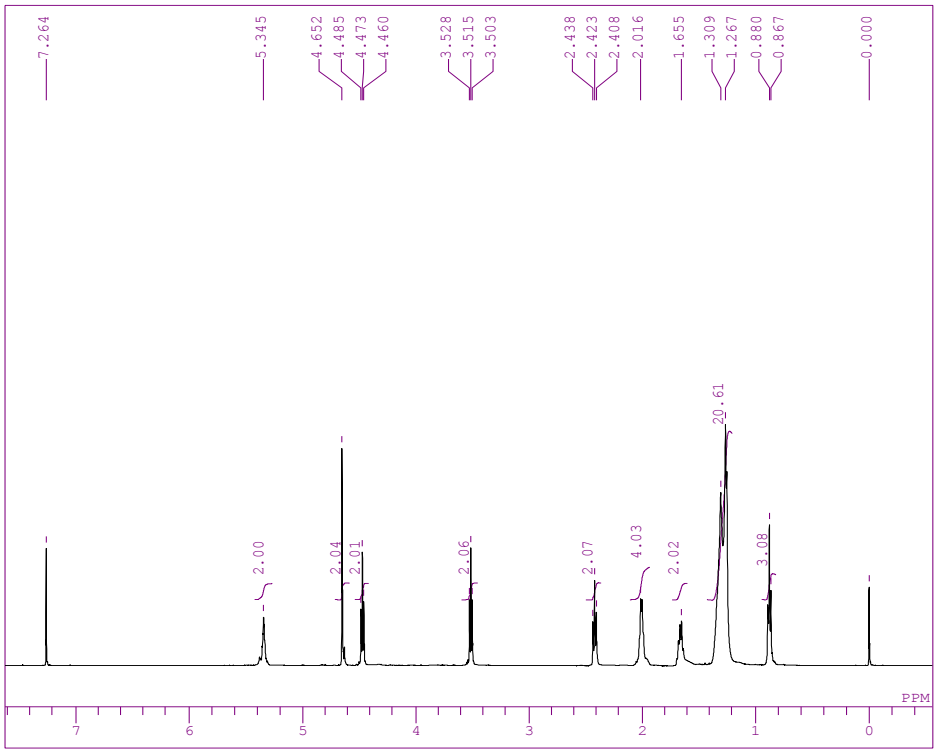

Figure S3: ^{1}H NMR spectra of 2-(2-bromoethoxy)-2-oxoethyl oleate.

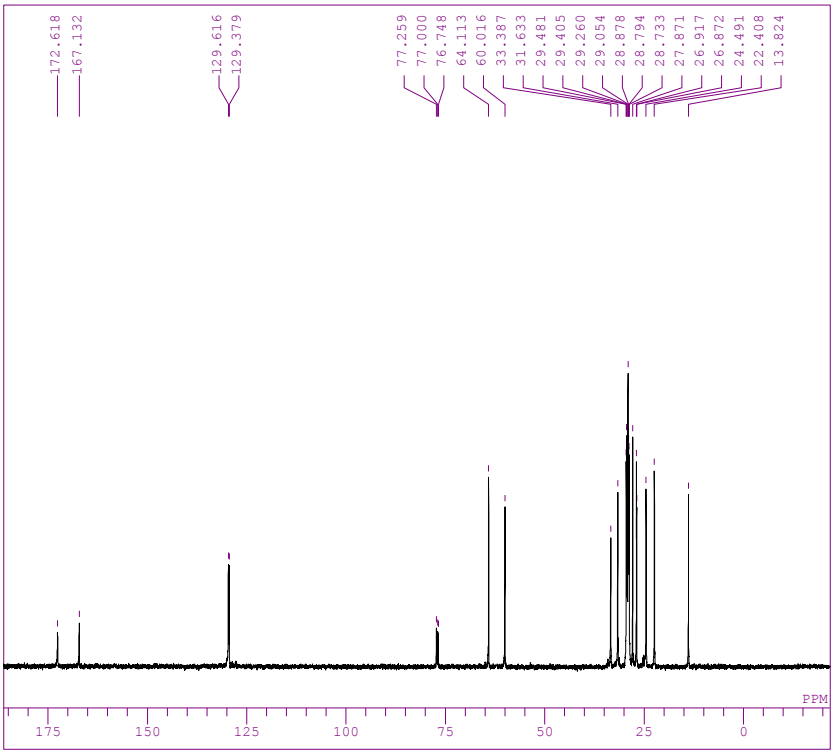

Figure S4: ^{13}C NMR spectra of 2-(2-bromoethoxy)-2-oxoethyl oleate.

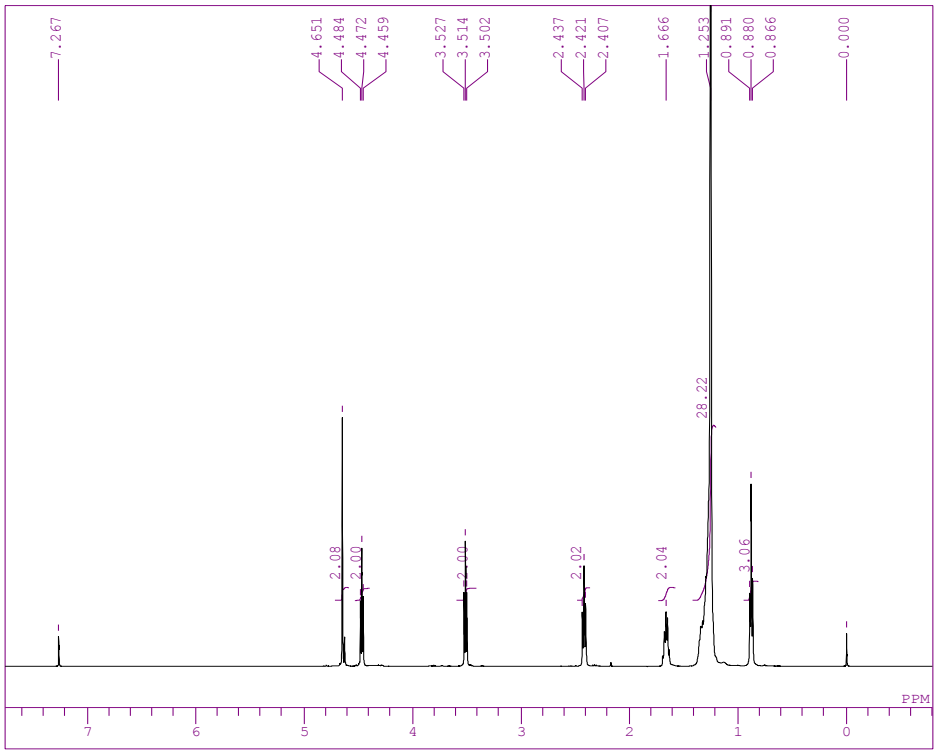

Figure S5: ^{1}H NMR spectra of 2-(2-bromoethoxy)-2-oxoethyl stearate.

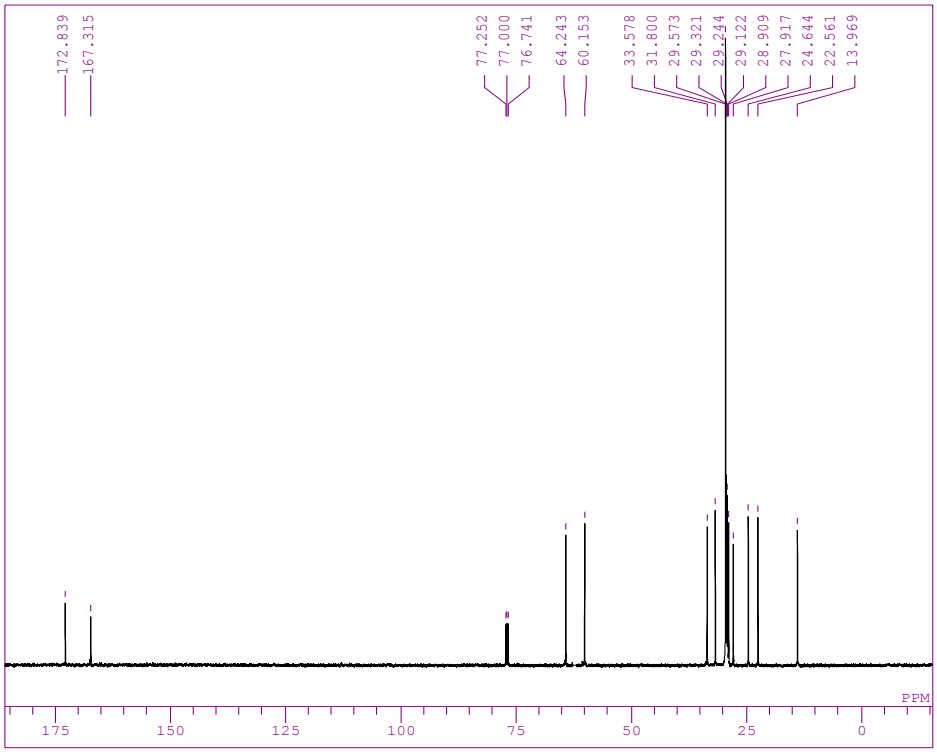

Figure S6: ^{13}C NMR spectra of 2-(2-bromoethoxy)-2-oxoethyl stearate.

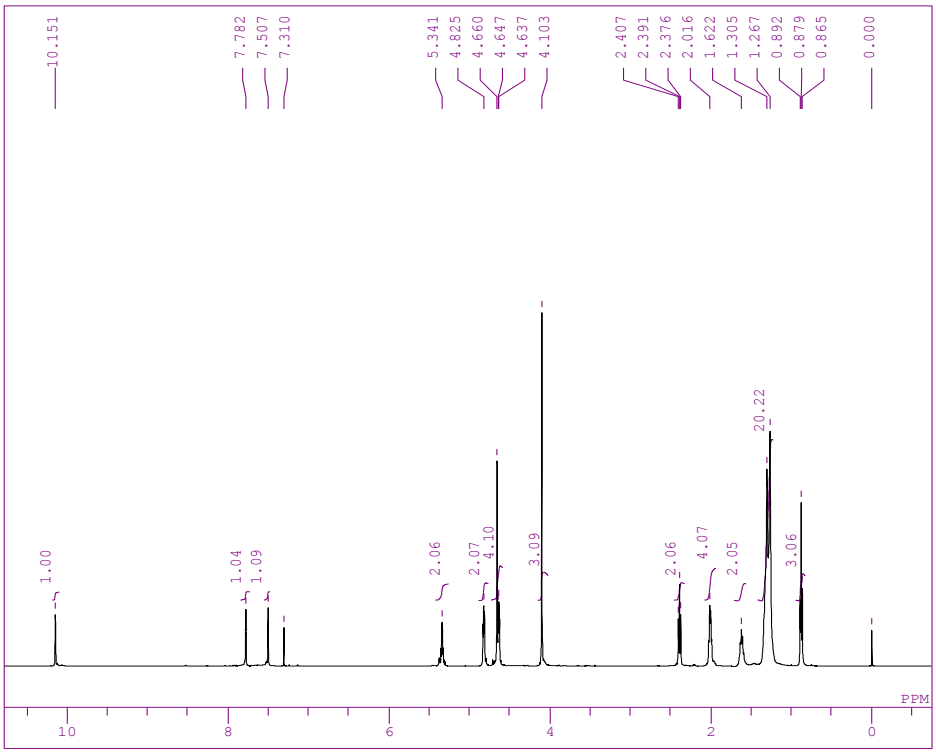

Figure S7: ^{1}H NMR spectra of 1-methyl-3-(2-(2-(oleoyloxy)acetoxy)ethyl)-1H-imidazol-3-ium bromide.

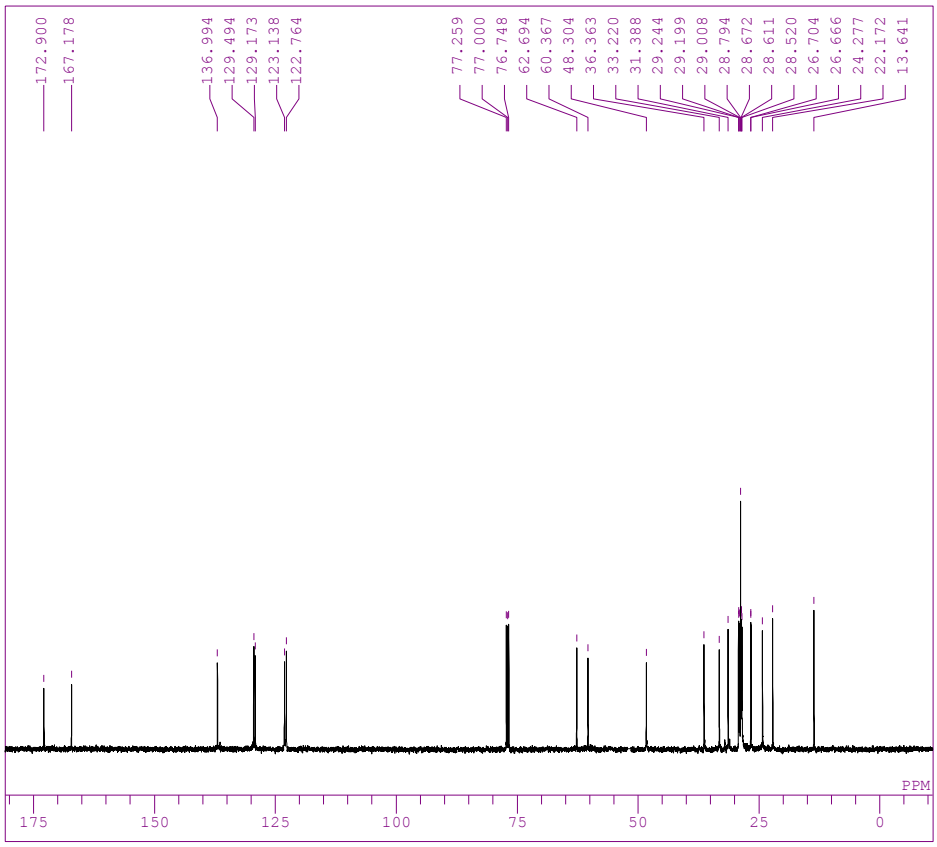

Figure S8: ^{13}C NMR spectra of 1-methyl-3-(2-(2-(oleoyloxy)acetoxy)ethyl)-1H-imidazol-3-ium bromide.

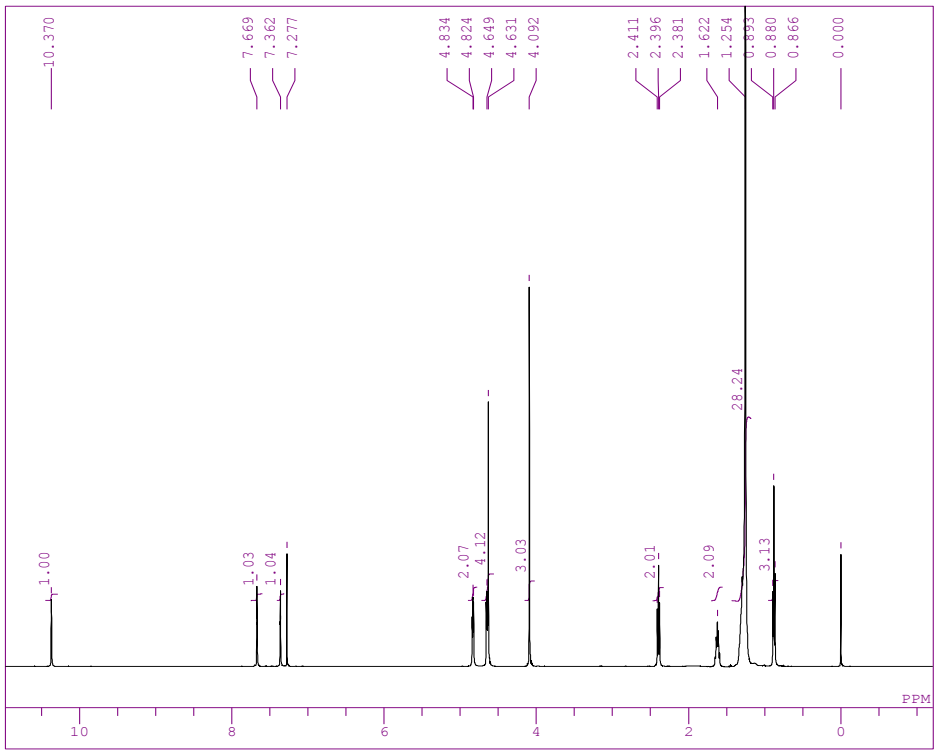

Figure S9: ^{1}H NMR spectra of 1-methyl-3-(2-(2-(stearoyloxy)acetoxy)ethyl)-1*H*-imidazol-3-ium bromide.

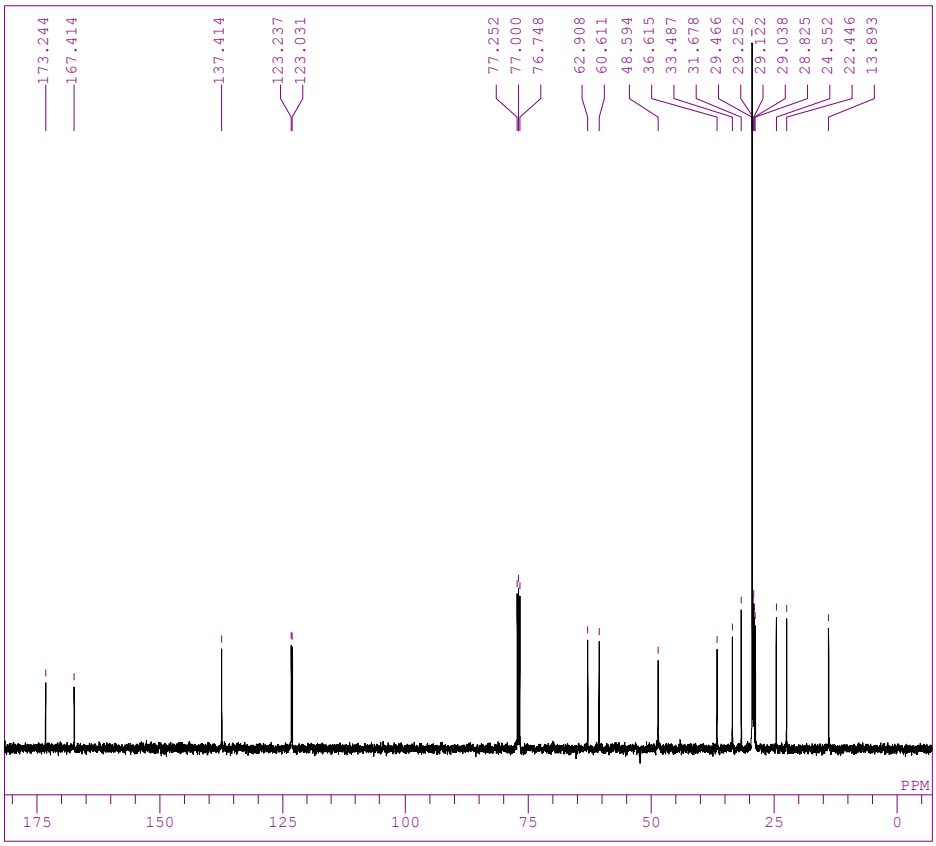

Figure S10: ^{13}C NMR spectra of 1-methyl-3-(2-(2-(stearoyloxy)acetoxy)ethyl)-1*H*-imidazol-3-ium bromide.