

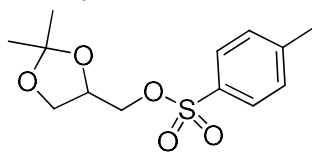
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1. Spectroscopic Characterization of Synthesized Compounds

(2,2-dimethyl-1,3-dioxolan-4-yl)methyl 4-methylbenzenesulfonate **2**



2

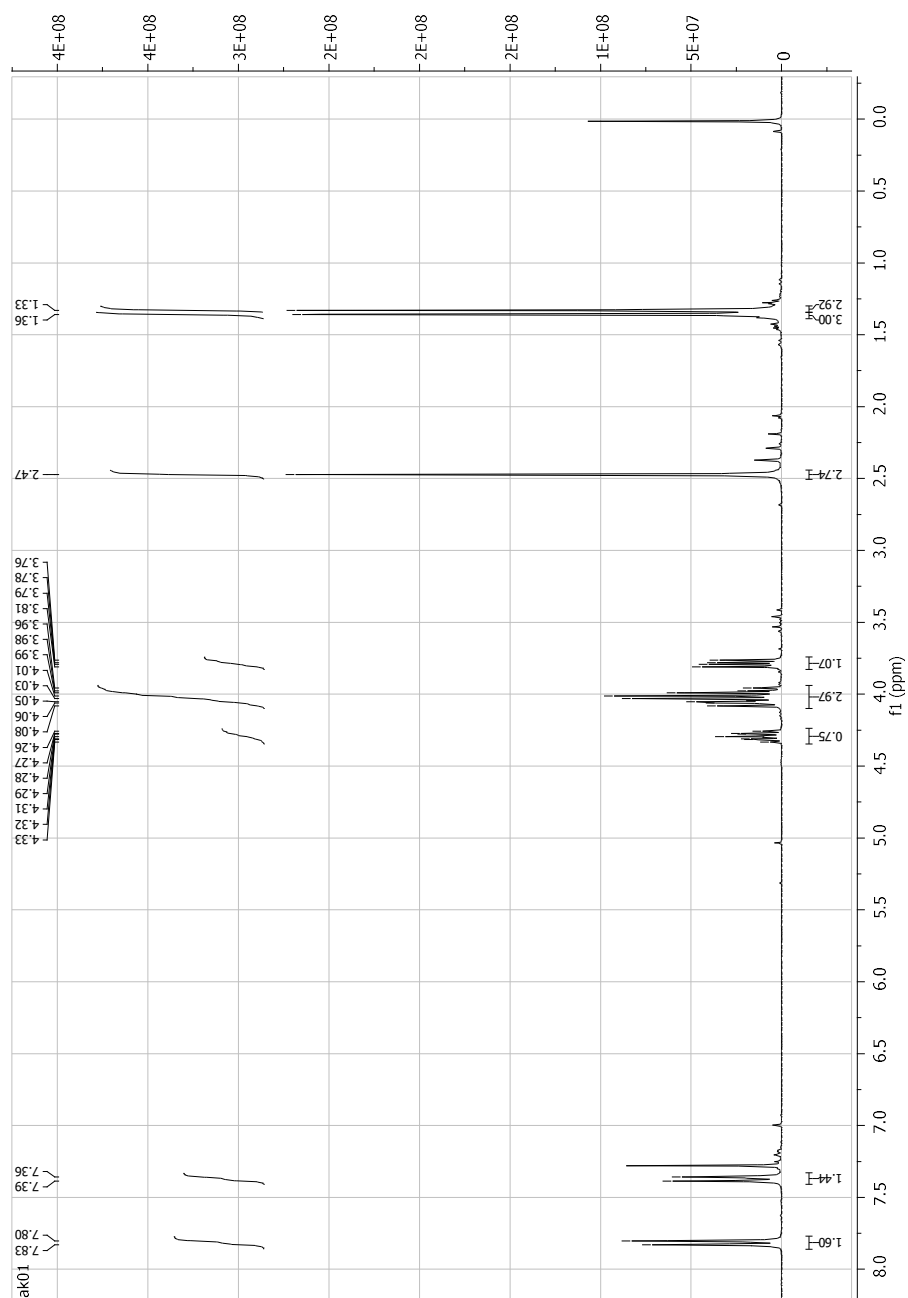
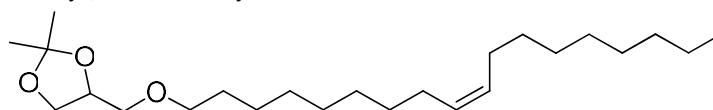


Figure SI1-1. ^1H NMR (CDCl_3) spectrum of compound **2**.

4-(n-octadec-9-enyloxymethyl)-2,2-dimethyl-1,3-dioxolane **3f**



3f

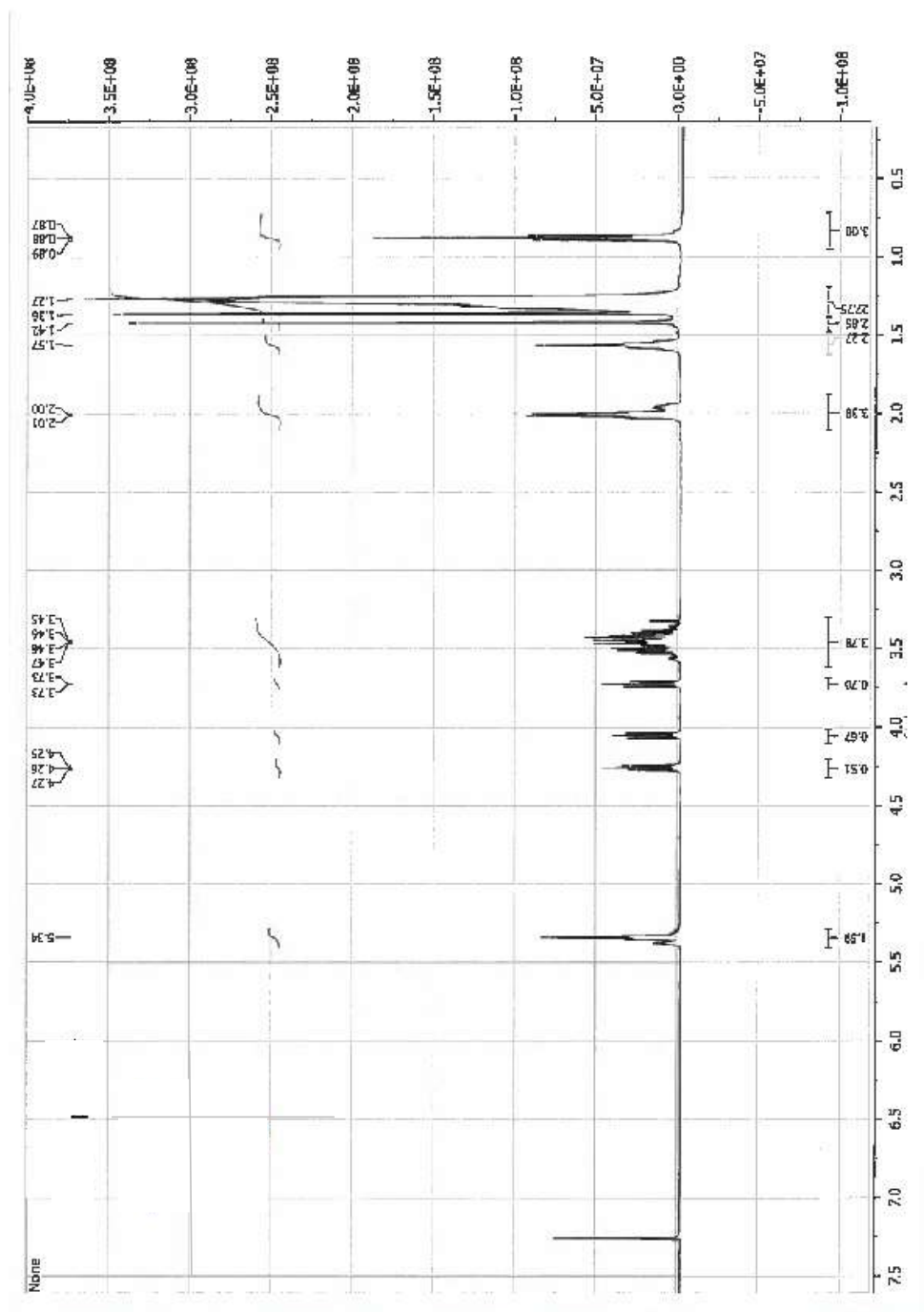


Figure S11-2. ^1H NMR (CDCl_3) spectrum of compound **3f**.

(E)-3-(octadec-9-enyloxy)propane-1,2-diol **4f**

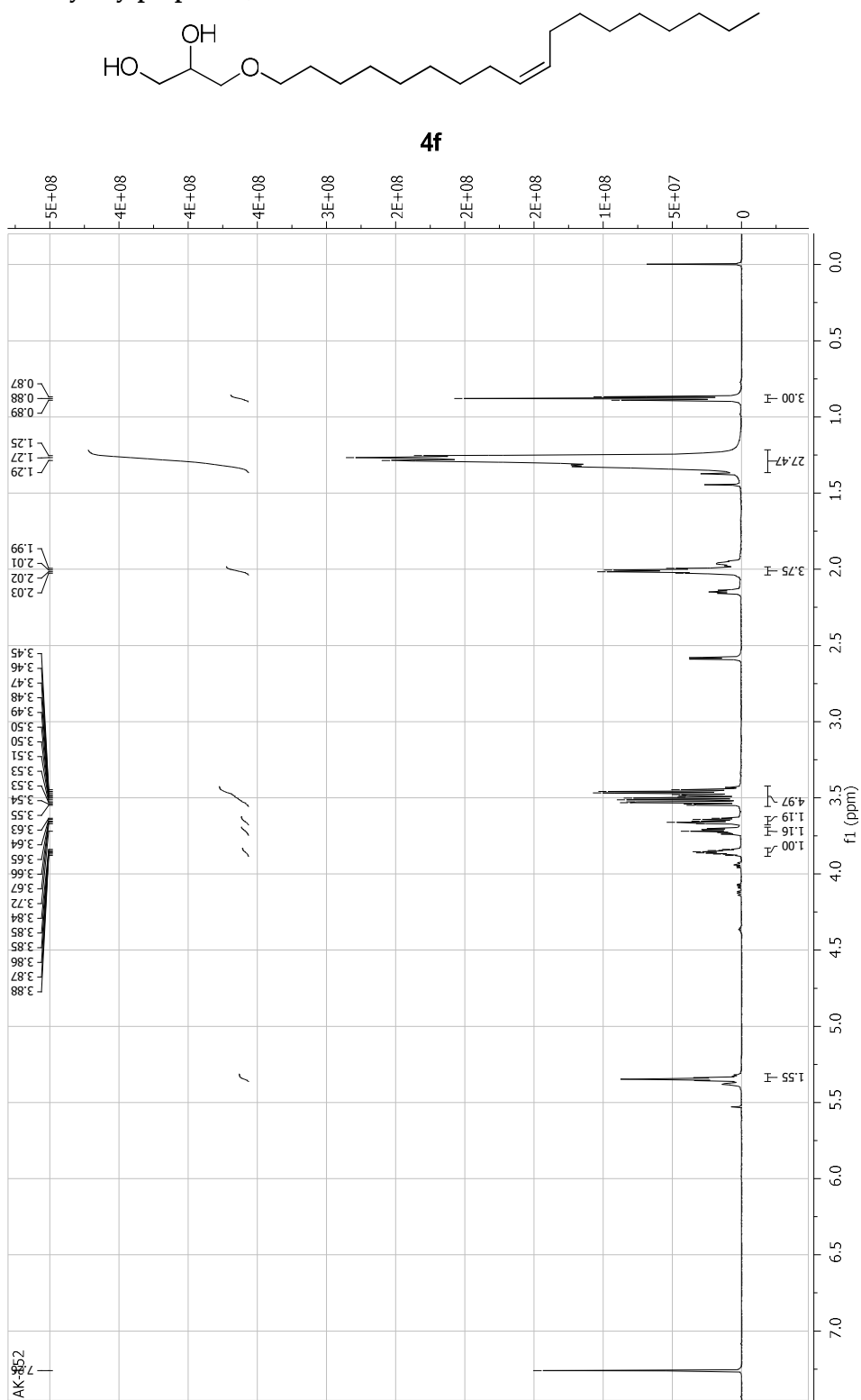


Figure S11-3. ^1H NMR (CDCl_3) spectrum of compound **4f**.

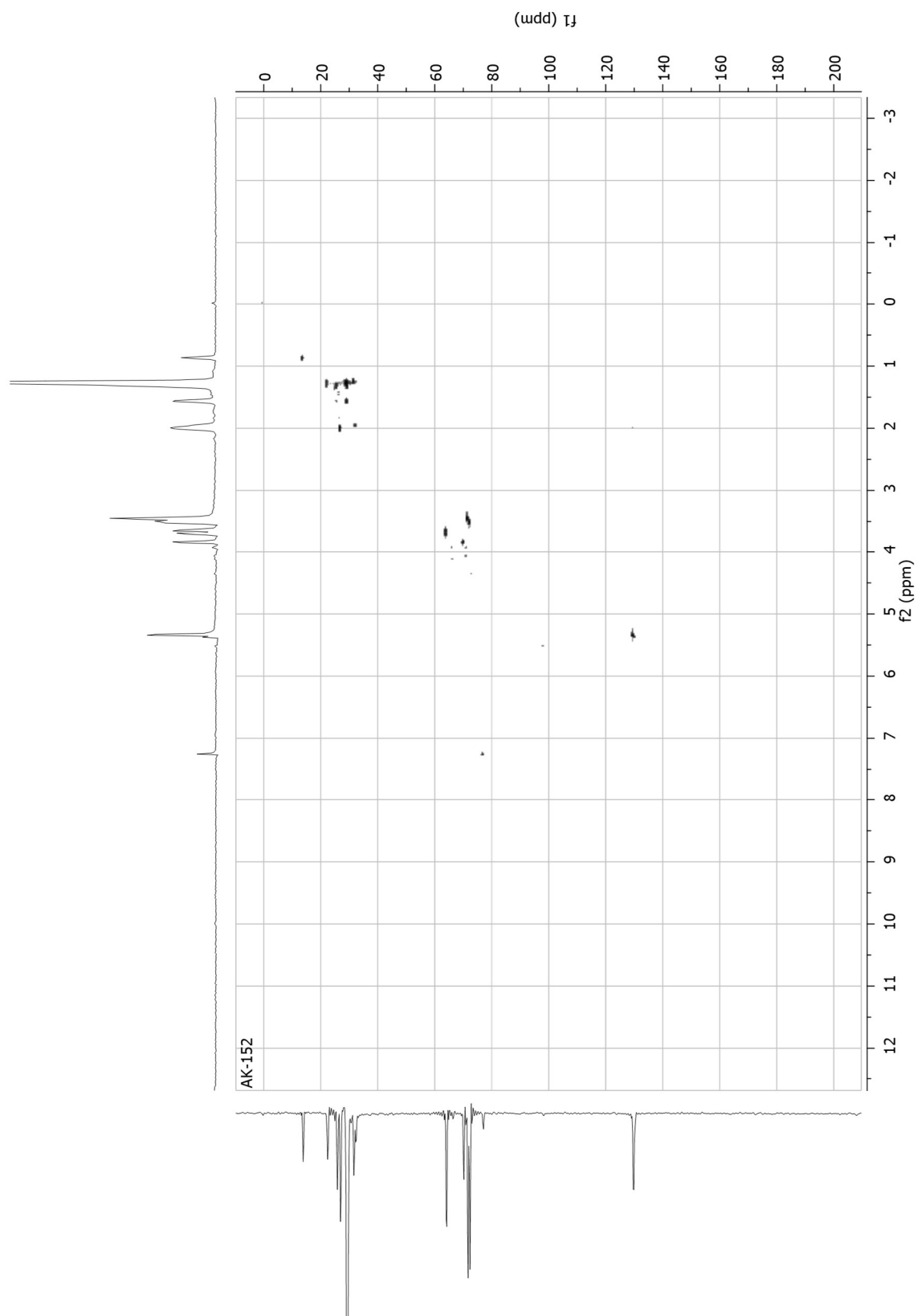


Figure SI1-4. 2D NMR HSQC (CDCl_3) spectrum of compound **4f**.

(E)-3-(octadec-9-enyloxy)propane-1,2-diacetate **5f**

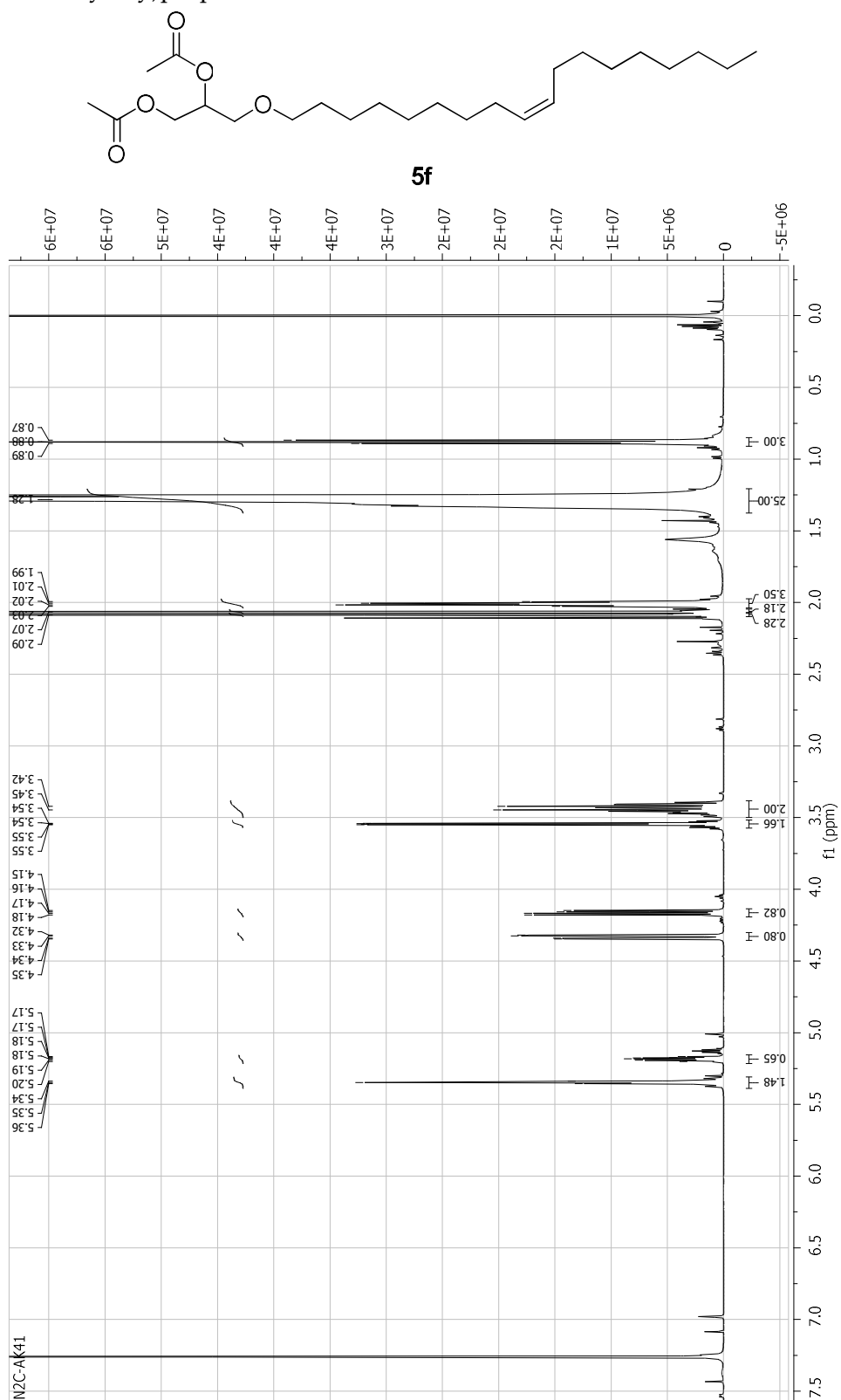


Figure S11-5. ¹H NMR (CDCl₃) spectrum of compound **5f**.

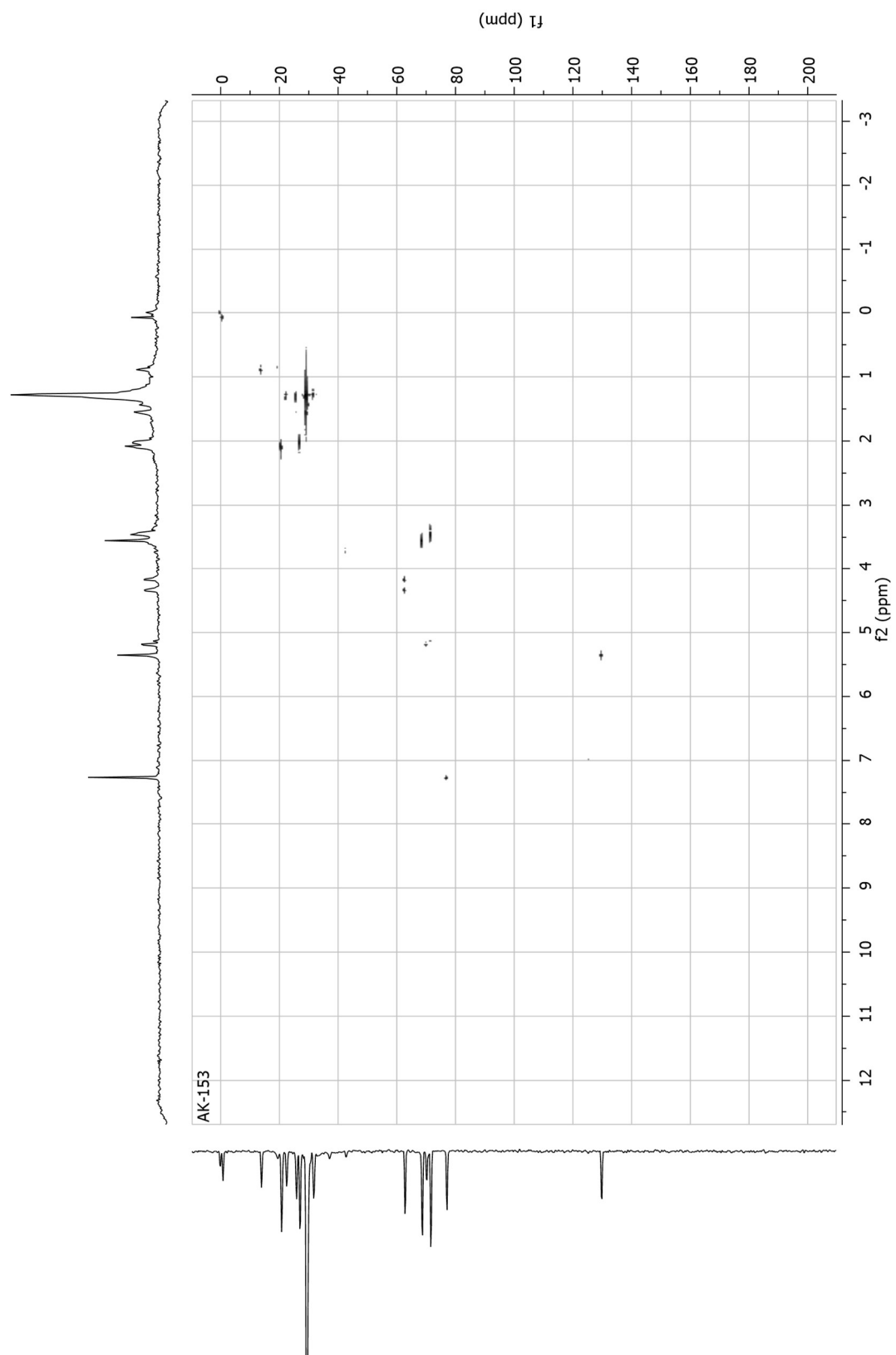
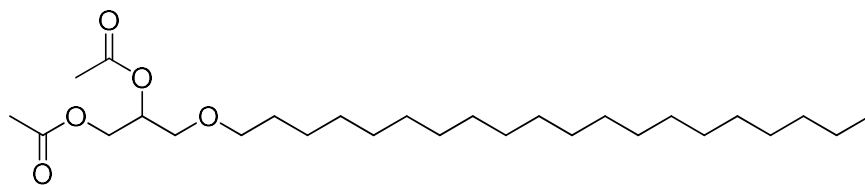


Figure SI1-6. 2D NMR HSQC (CDCl_3) spectrum of compound 5f.

3-(eicosyloxy)propane-1,2-diacetate **5h**



5h

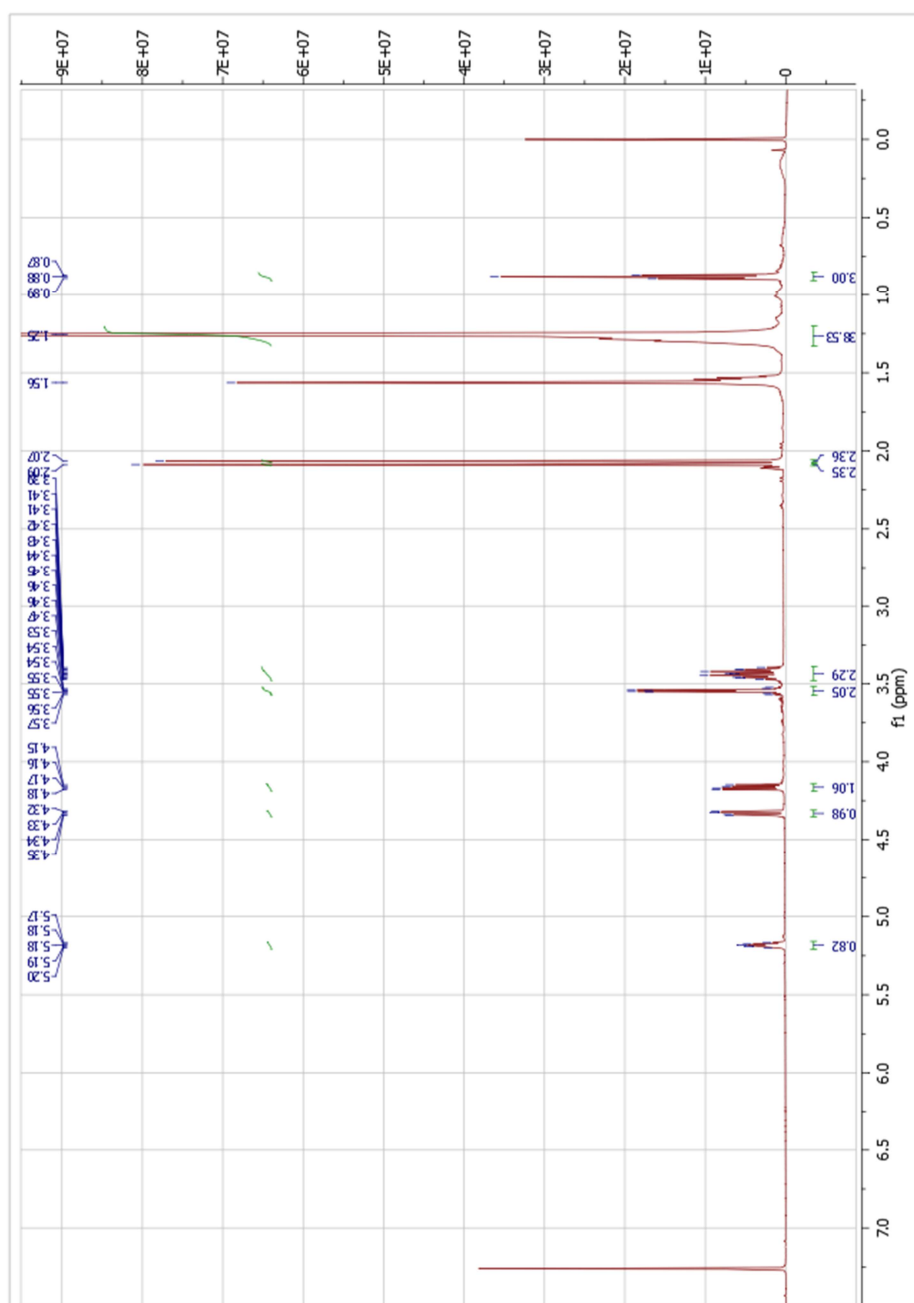


Figure SI1-7. ^1H NMR (CDCl_3) spectrum of compound **5h**.

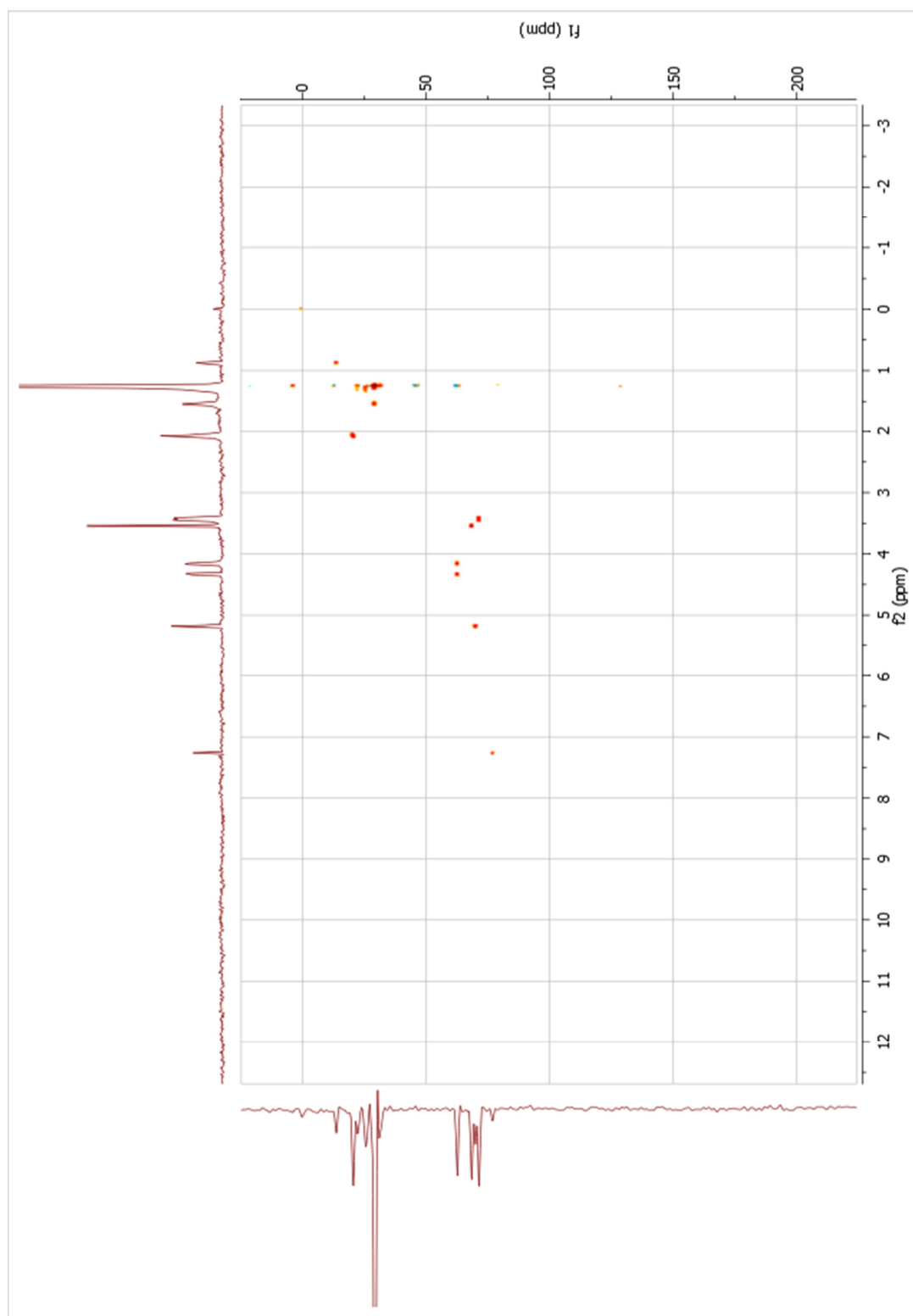


Figure SI1-8. 2D NMR HSQC (CDCl₃) spectrum of compound **5h**.

2. Chromatographic Characterization of Synthesized Compounds

GC-MS chromatogram of synthesized alkyl-glycerolipids

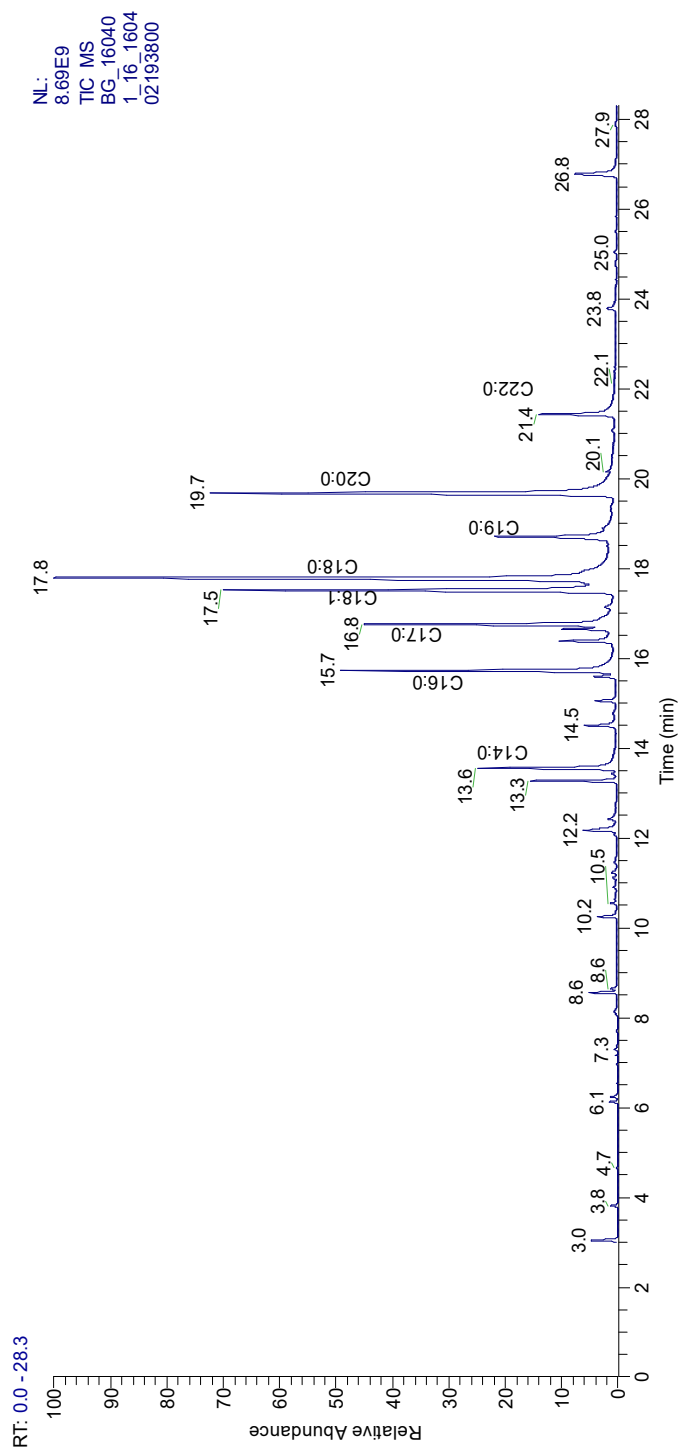


Figure SI2.1. GC-MS chromatogram of a mixture of synthesized alkyl-glycerolipids.

Alkyl chain R =	Retention time (min)	Molecular Weight (g·mol ⁻¹)	Most characteristic peaks (m/z, [%])
C ₁₄ H ₂₉ (C14:0)	13.6	372.54	43 [base peak], 57 [60], 71[35], 83[30], 97[26], 111[13], 159[5]
C ₁₆ H ₃₁ (C16:1)	15.0	398.58	43 [base peak], 57 [63], 69 [44], 95 [39], 117 [31], 159 [6], 222 [15]
C ₁₆ H ₃₃ (C16:0)	15.7	400.59	43[base peak], 57[62], 71[38], 83[28], 97[27], 111[14], 159[7] 255[<5]
C ₁₇ H ₃₅ (C17:0)	16.8	414.62	43[base peak], 57[62], 83[28], 97 [27], 111[15], 159[6]
C ₁₈ H ₃₅ (C18:1)	17.5	426.63	43 [base peak], 55[52], 67[48], 81[52], 95 [44], 109[24], 117[18], 123[12], 135 [6]
C ₁₈ H ₃₇ (C18:0)	17.8	428.65	43[base peak], 57[70], 71[45], 85[34], 97[33], 111[18],117[25], 125[8], 159[15], 283 [6], 325[6]
C ₁₉ H ₃₉ (C19:0)	18.7	442.67	43[base peak], 57[65], 83[38], 71 [38] 97 [36], 111[20], 159[6]
C ₂₀ H ₄₁ (C20:0)	19.7	456.70	43[base peak], 57[70], 71 [42], 83[36], 97 [36], 111[18], 117 [18],159[12], 125 [10]
C ₂₂ H ₄₅ (C22:0)	21.4	484.75	43[base peak], 57[70], 71 [38], 83[28], 97 [38], 111[22], 117 [12], 125 [12] 159[6]

Figure SI2.2. Mass spectroscopy data.