

Supporting Information

Acetalization of Alkenes Catalyzed by Pd(OAc)₂/NPMoV Supported on Activated Carbon under Dioxygen Atmosphere

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Experimental Procedure and Compound Characterization Data

General. ¹H and ¹³C NMR spectra were recorded at 270 and 67.5 MHz, respectively, using CDCl₃ with tetramethylsilane as the internal standard. Infrared (IR) spectra were measured using NaCl or KBr pellets. Flash chromatography was performed with the use of silica gel (MERCK, Silica gel 60, 70-230 mesh). Gas chromatography was carried out on Shimadzu GC-17A with a flame ionization detector using a 0.22 mm x 25 m capillary column (SGE BP-5). All starting materials and solvent were purchased from commercial sources and used without further treatment.

Compound Characterization Data. Acetals **2**, and cyanoacetaldehyde dimethylacetal were identified through the comparison of their ¹H and ¹³C NMR with those authentic samples.

Methyl 3,3-dimethoxypropionate. ¹H NMR (CDCl₃, 270 MHz) δ 2.66 (d, *J* = 4.61 Hz, 2H), 3.36 (s, 6H), 3.70 (s, 3H), 4.84 (t, *J* = 5.94 Hz, 1H); ¹³C NMR (CDCl₃, 67.8 MHz) δ 38.6, 51.7, 53.4, 101.2, 170.2; IR 2985, 2835, 1738, 1316, 1175, 1120, 1080 cm⁻¹.

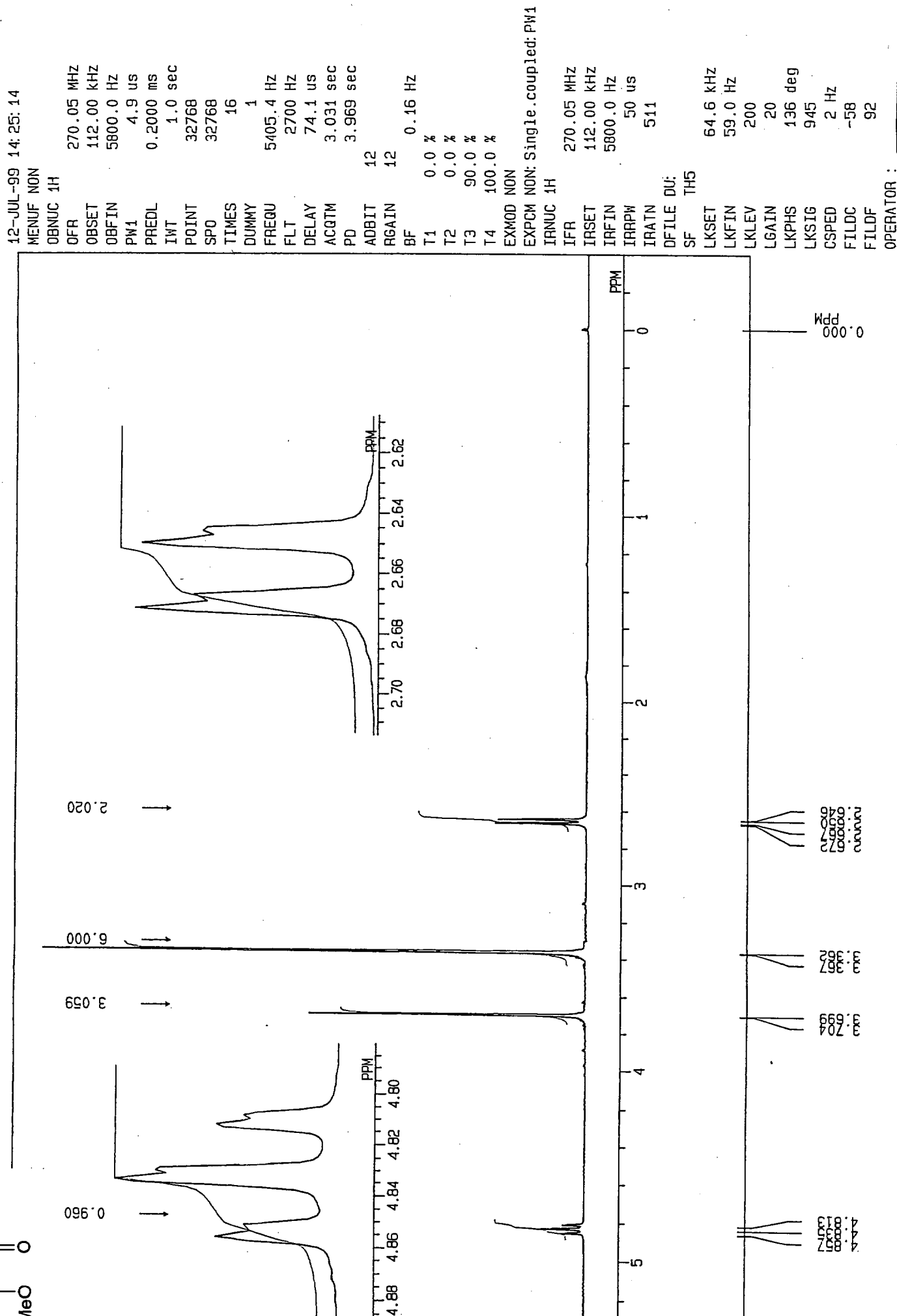
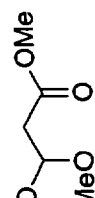
Ethyl 3,3-dimethoxypropionate. ¹H NMR (CDCl₃, 270 MHz) δ 1.26 (t, *J* = 7.26 Hz, 3H),

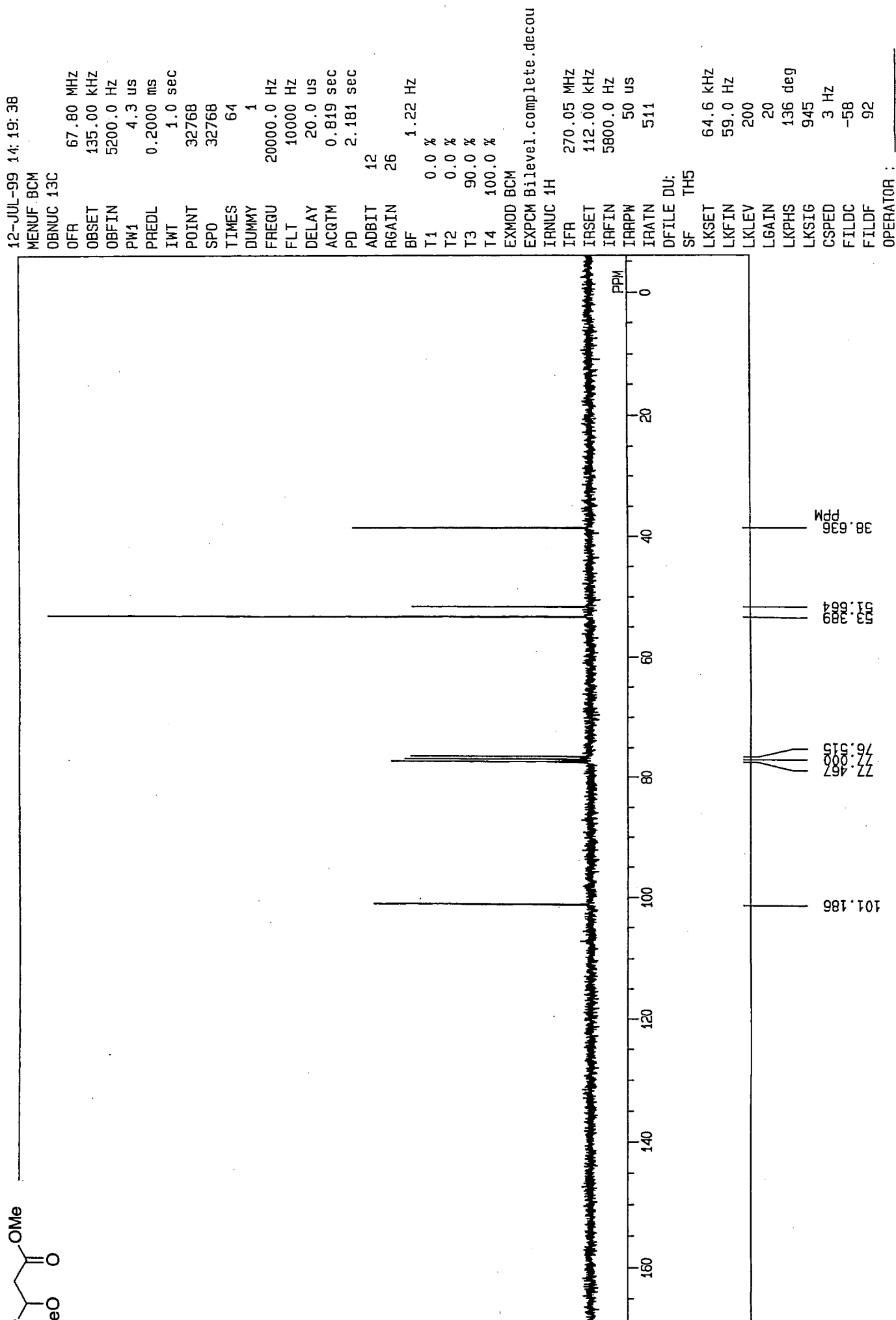
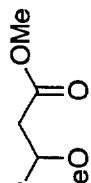
2.63 (d, $J = 5.94$ Hz, 2H), 3.37 (s, 6H), 4.16 (q, $J = 7.26$ Hz, 2H) 4.83 (t, $J = 5.94$ Hz, 1H); ^{13}C NMR (CDCl_3 , 67.8 MHz) δ 14.1, 38.9, 53.4, 65.5, 101.3, 169.8; IR 2985, 2835, 1738, 1732, 1454, 1372, 1316, 1120, 1080 cm^{-1} .

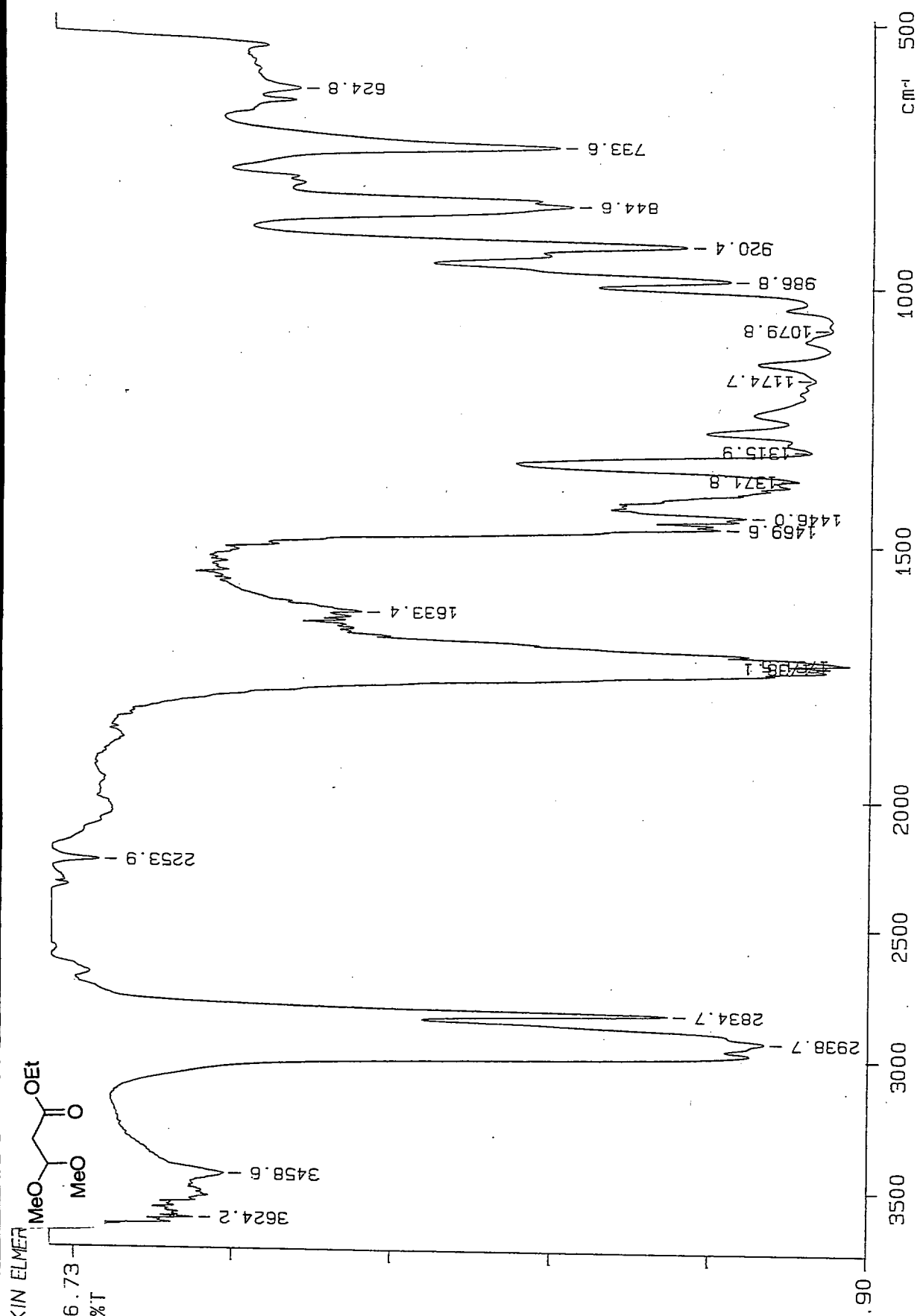
Butyl 3,3-dimethoxypropionate. ^1H NMR (CDCl_3 , 270 MHz) δ 0.94 (d, $J = 6.60$ Hz, 6H), 1.89-1.99 (m, 1H), 2.66 (d, $J = 5.29$ Hz, 2H), 3.36 (s, 6H) 3.90 (d, $J = 6.60$ Hz, 2H) 4.84 (t, $J = 5.94$ Hz, 1H); ^{13}C NMR (CDCl_3 , 67.8 MHz) δ 18.9, 27.6, 38.9, 53.2, 70.6, 101.2, 169.8; IR 2961, 1783, 1172, 1120, 1080, 913, 735 cm^{-1} .



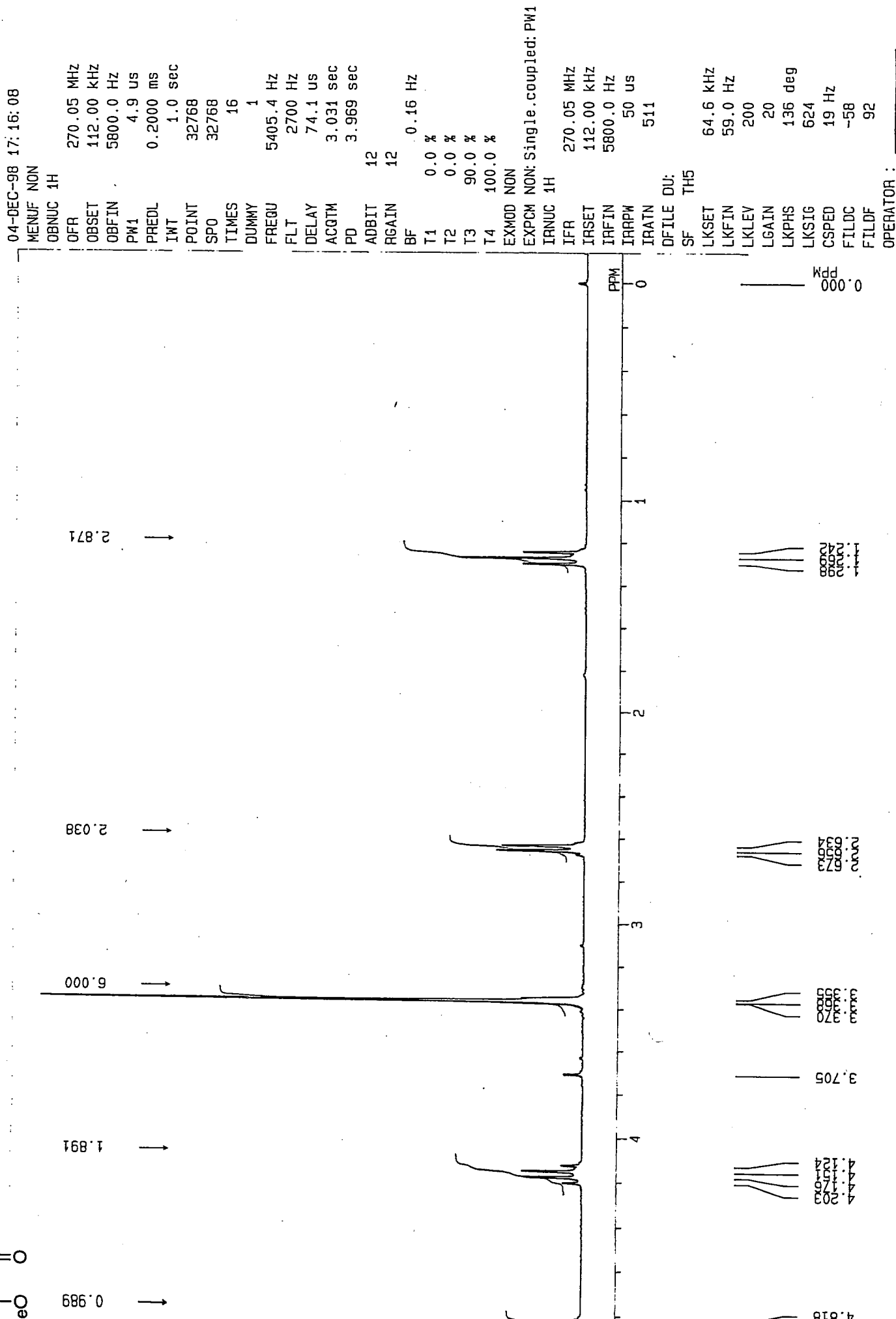
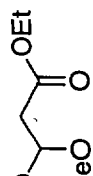
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16 scans, 4.0cm-1, smooth
acrylate-mech

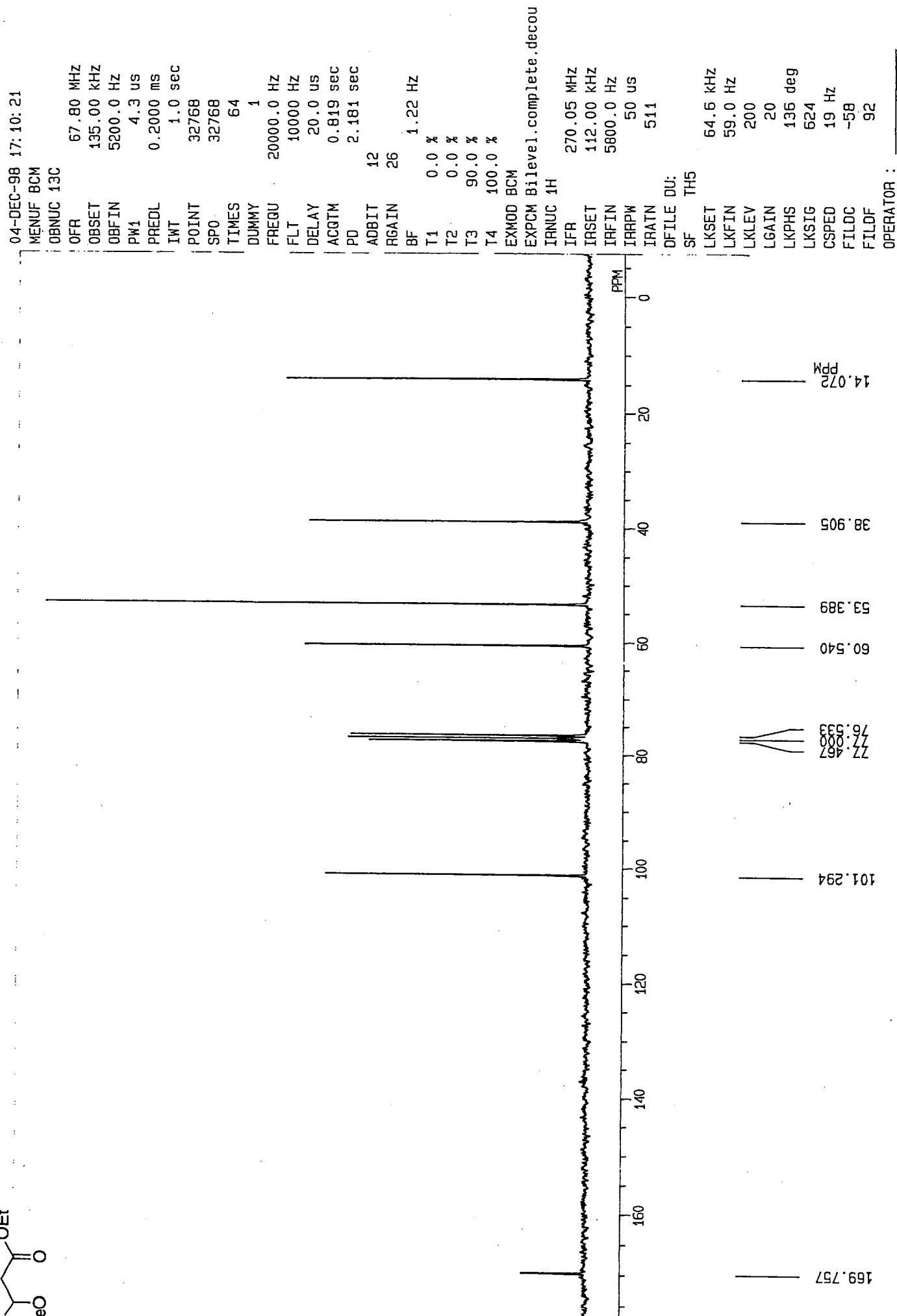
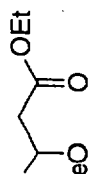


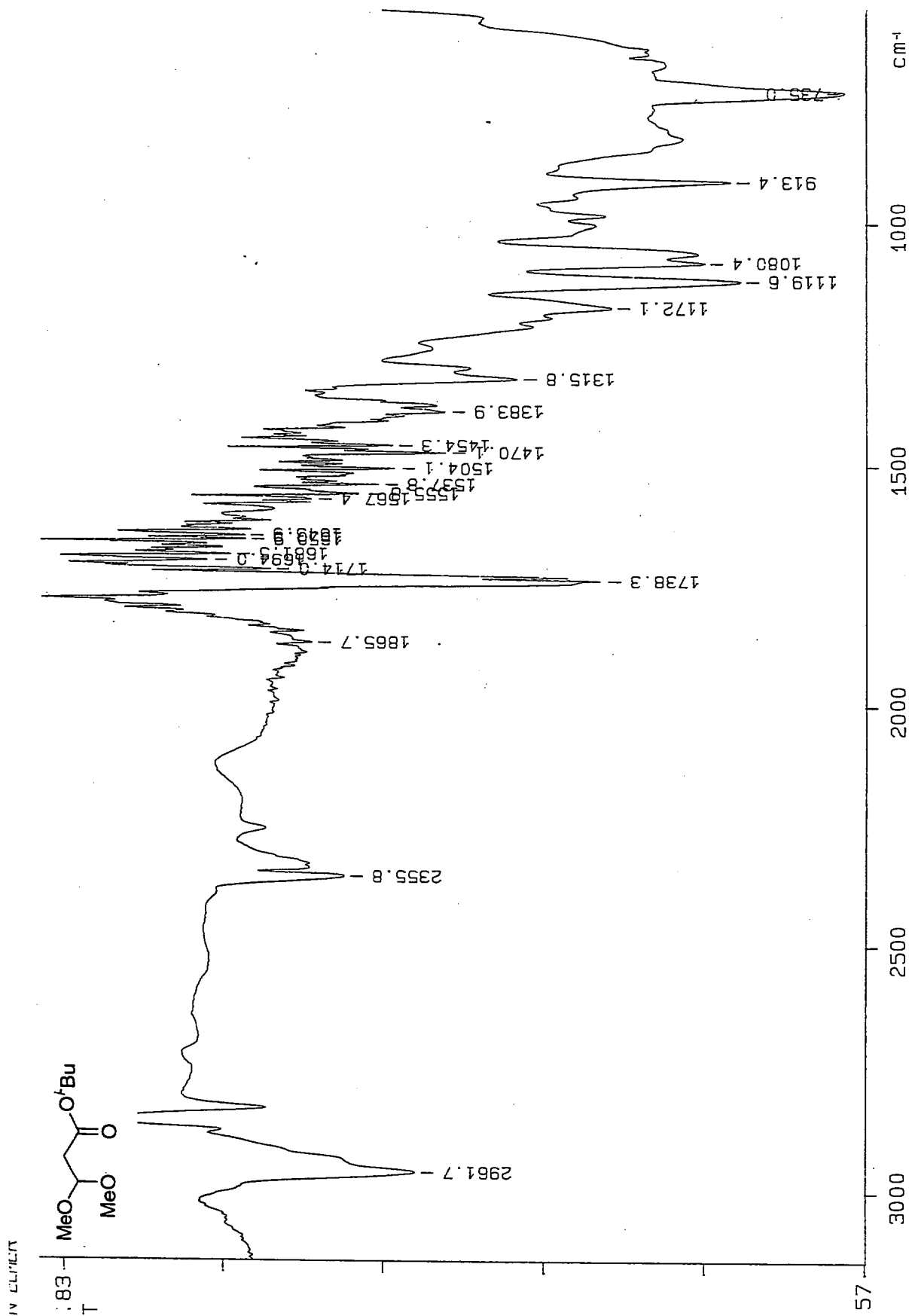




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