

Electronic Supplementary Information

Polymer Supported DMAP: An Easily Recyclable Organocatalyst for Highly Atom-economical Henry Reaction under Solvent-free Conditions

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Materials and physical measurements

Polymer-supported 4-DMAP (~3 mmol/g DMAP loading, matrix crosslinked with 2% DVB (divinylbenzene)) was purchased from Sigma-Aldrich. Other reagents were obtained from SpectroChem. Progress of the reaction was monitored by thin layer chromatography (TLC) carried out on glass plates coated with silica gel G, using the solvent system EtOAc/hexane. IR spectra were recorded on a Perkin-Elmer Spectrum One FTIR spectrometer. ¹H and ¹³C NMR spectra were recorded on a Bruker Avance II (400 MHz), Bruker Avance III (500 MHz) spectrometer using tetramethylsilane (TMS) as an internal reference. Elemental analyses of the products were performed on a Perkin-Elmer-2400 CHNS analyzer.

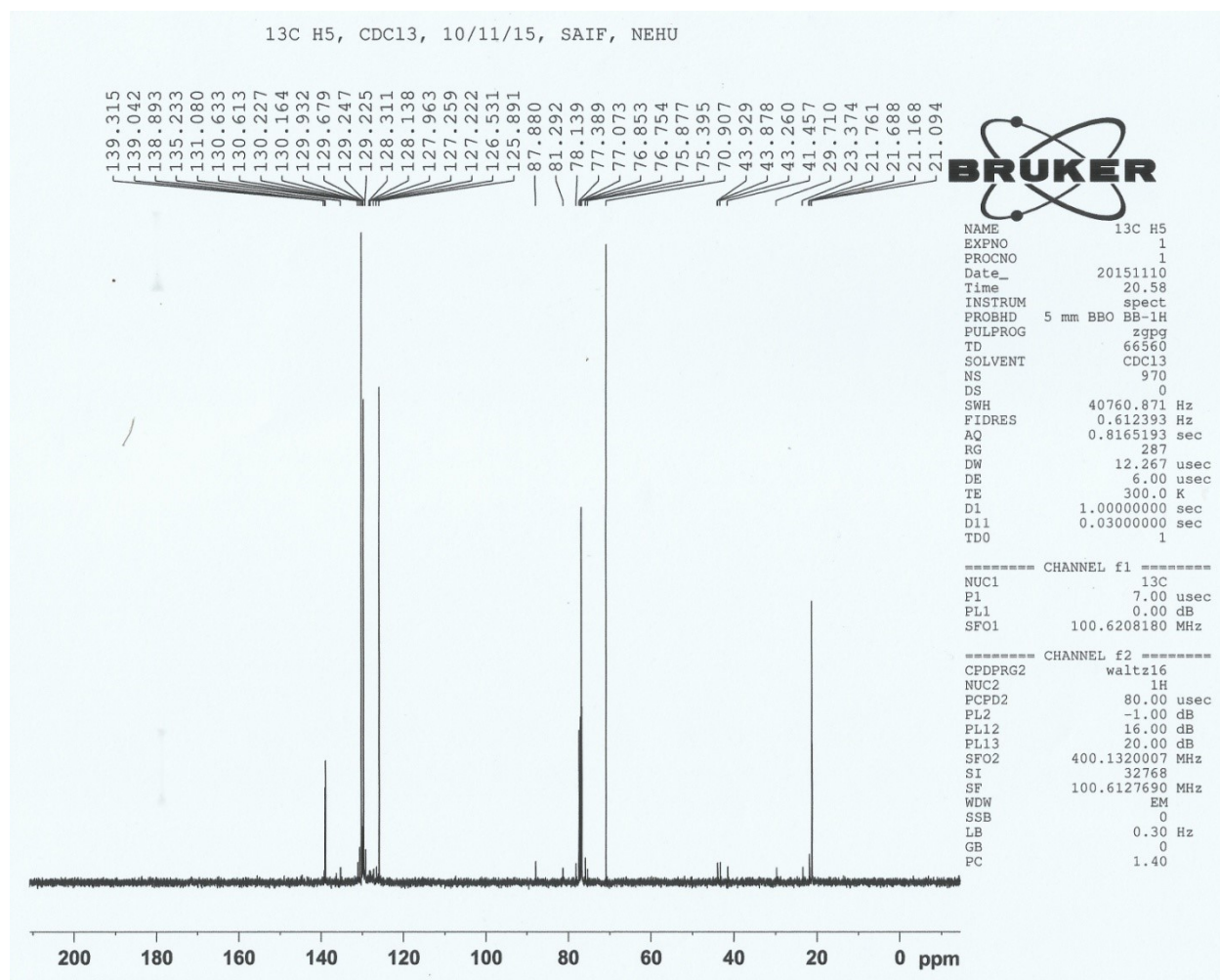
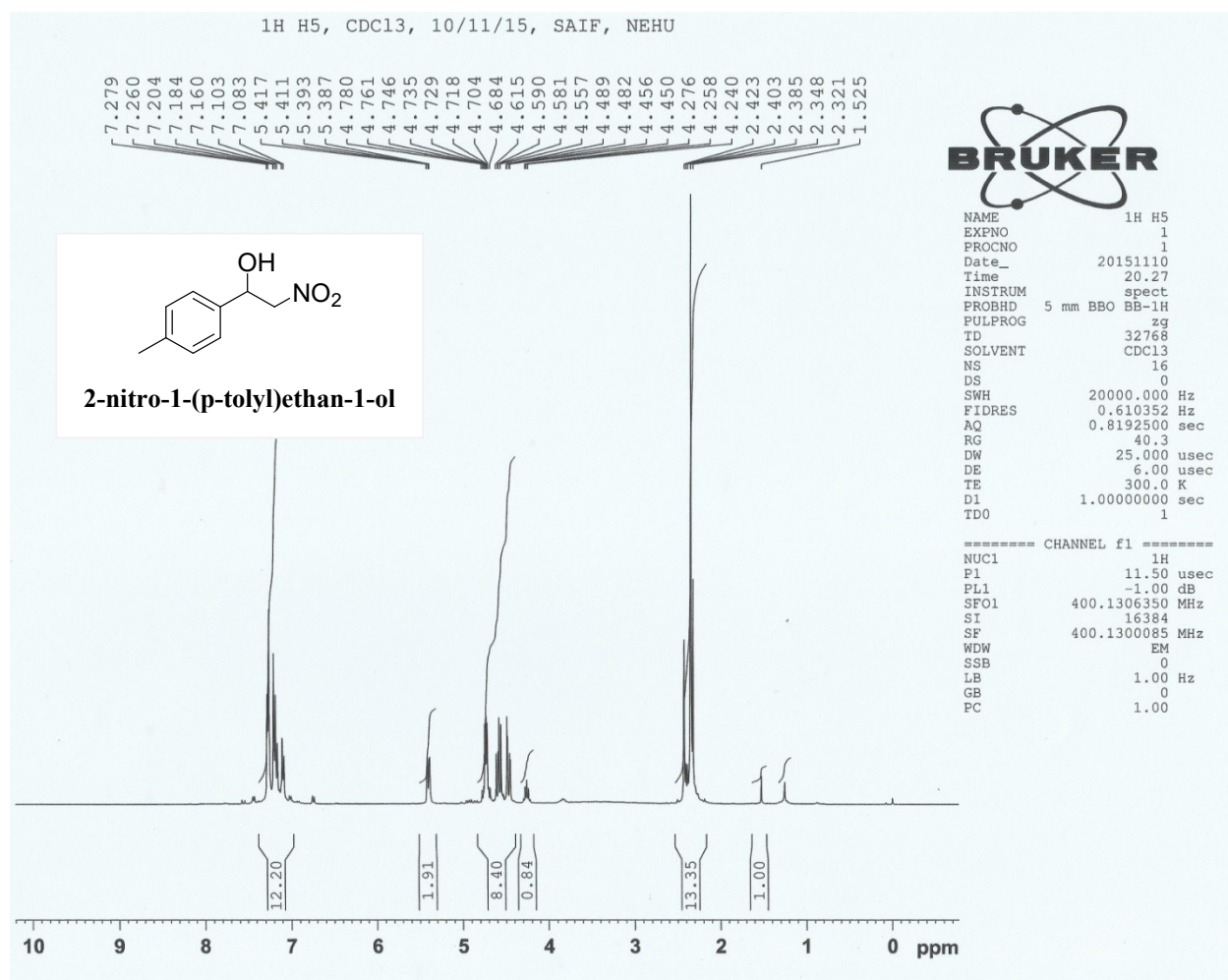


Fig: ^1H and ^{13}C -NMR spectra of **2-nitro-1-(p-tolyl)ethan-1-ol** (Table 3, Entry 2)

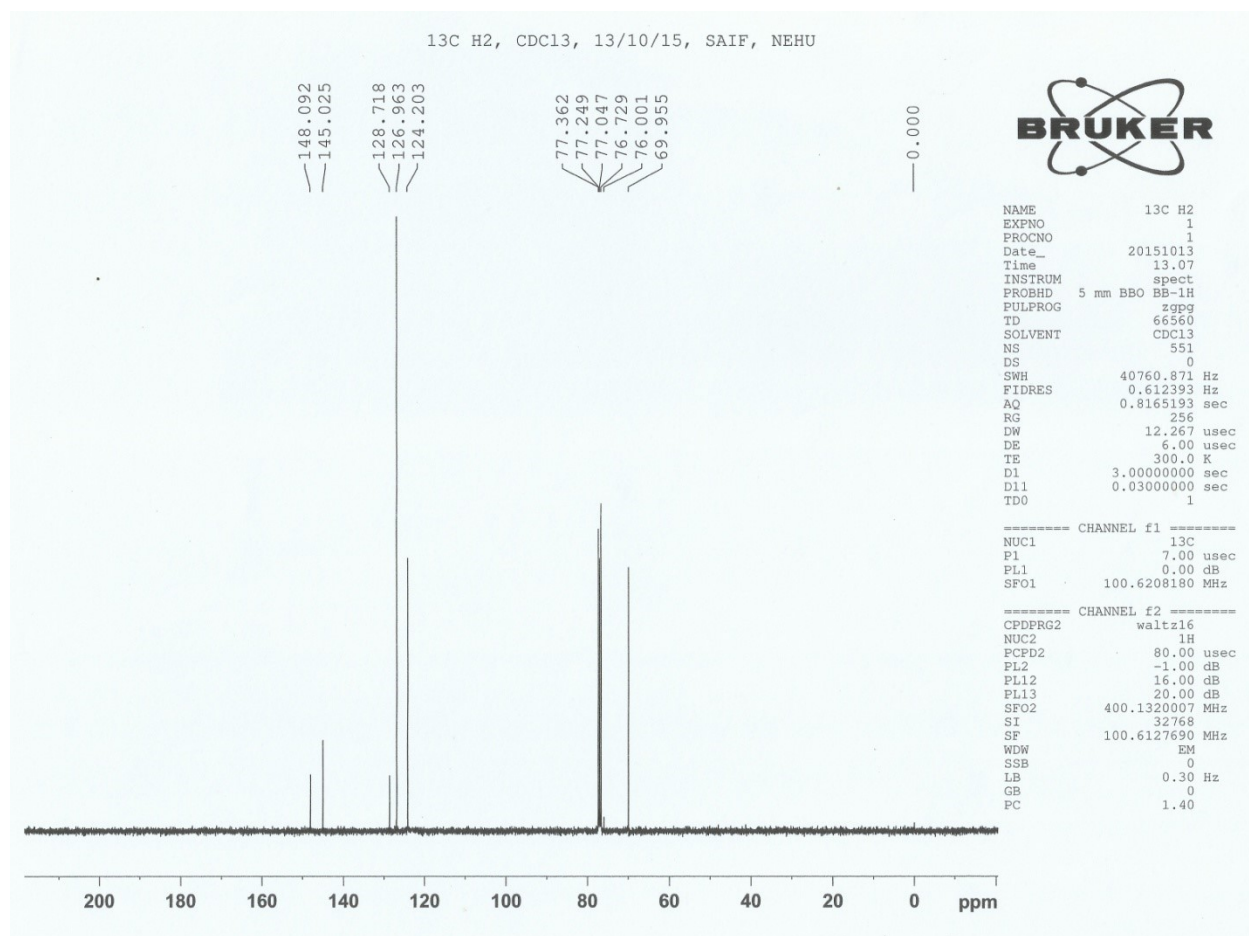
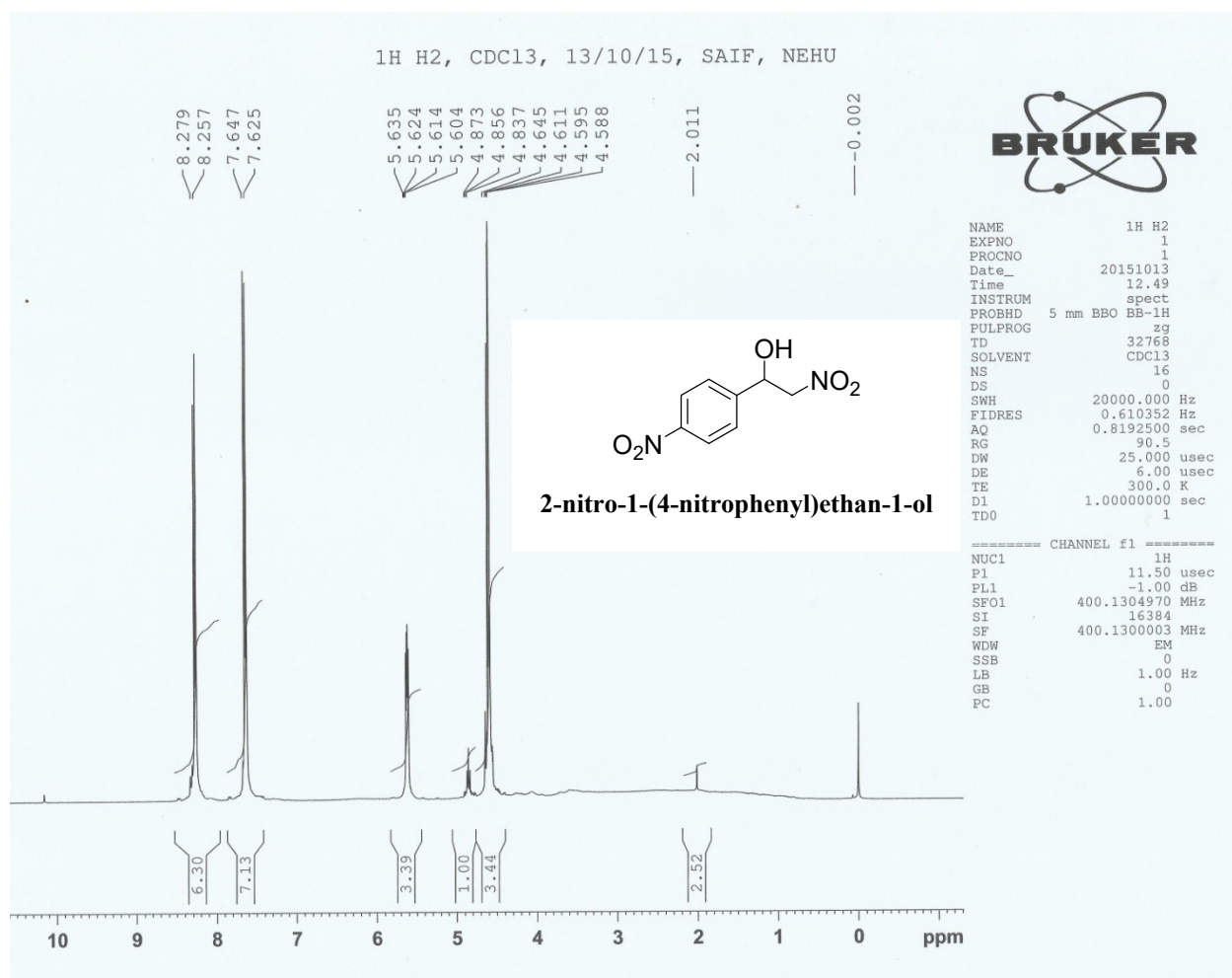
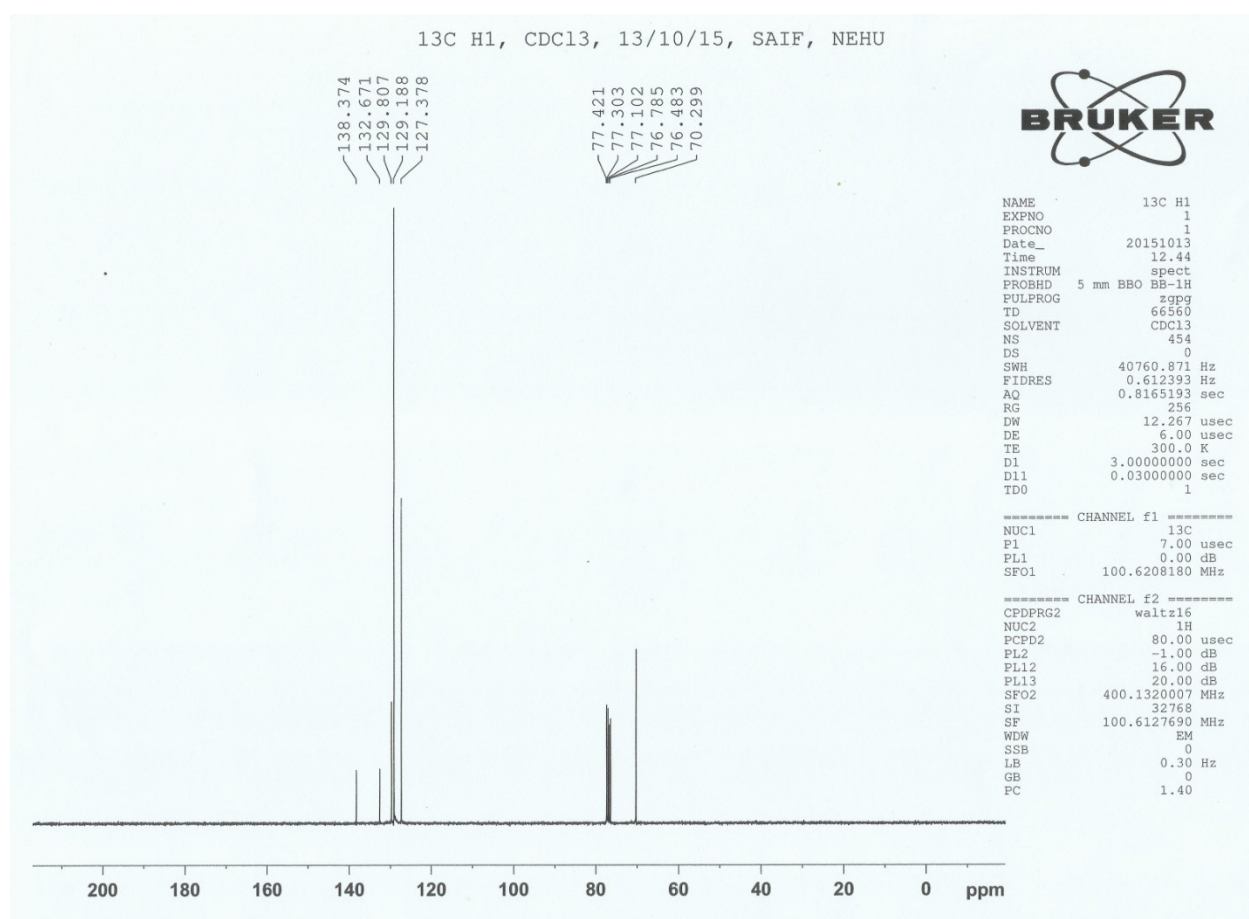
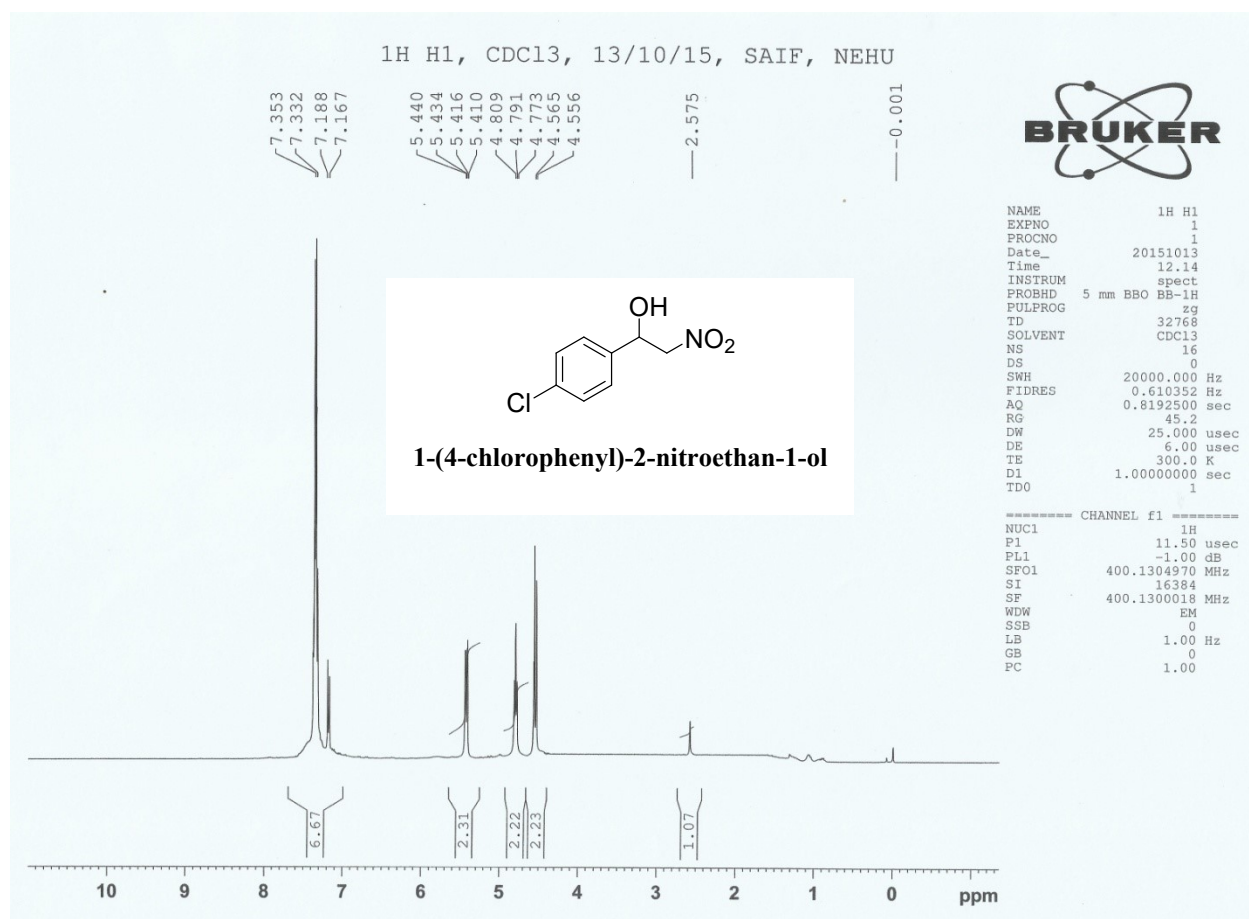


Fig: ^1H and ^{13}C -NMR spectra of 2-nitro-1-(4-nitrophenyl)ethan-1-ol (Table 3, Entry 3)



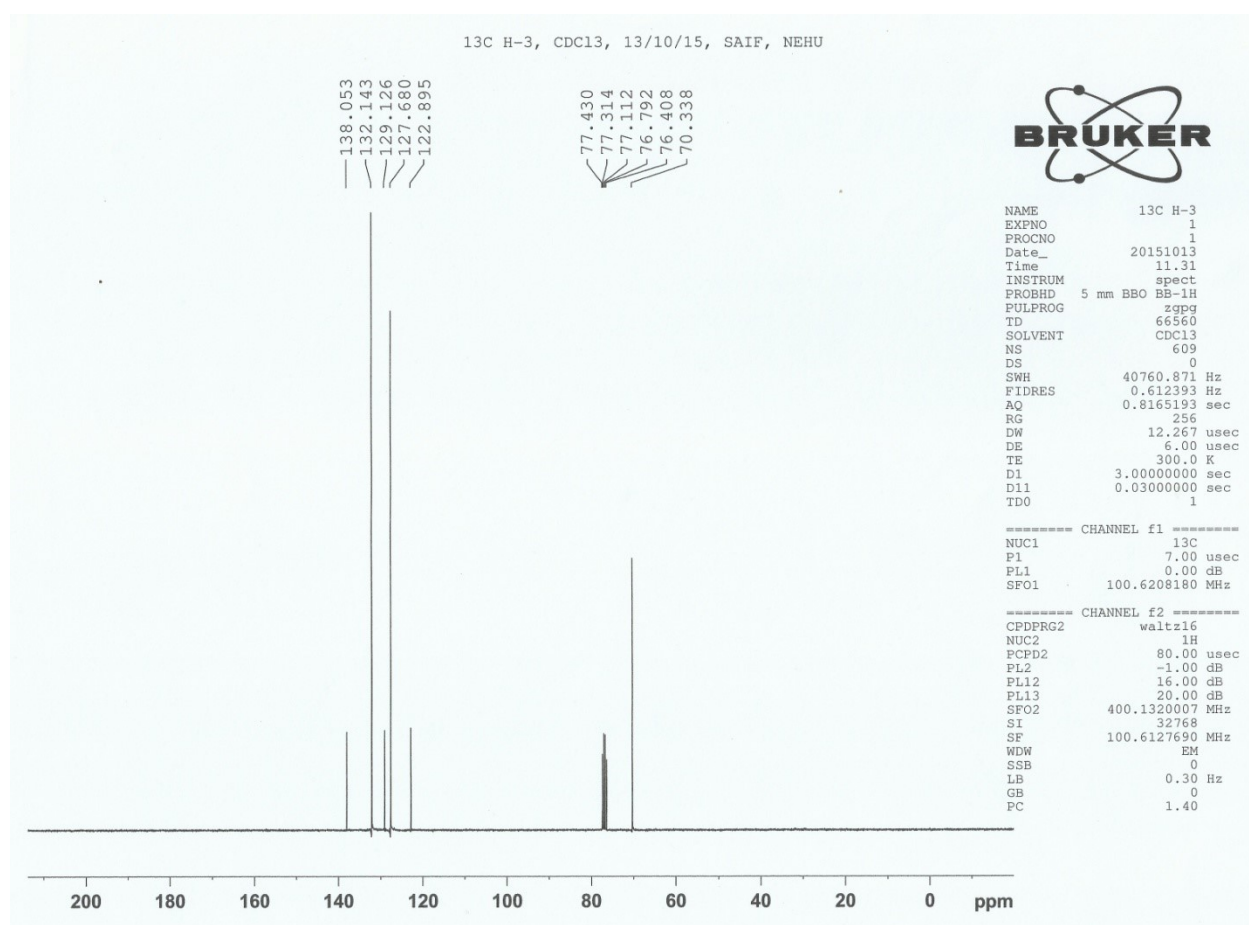
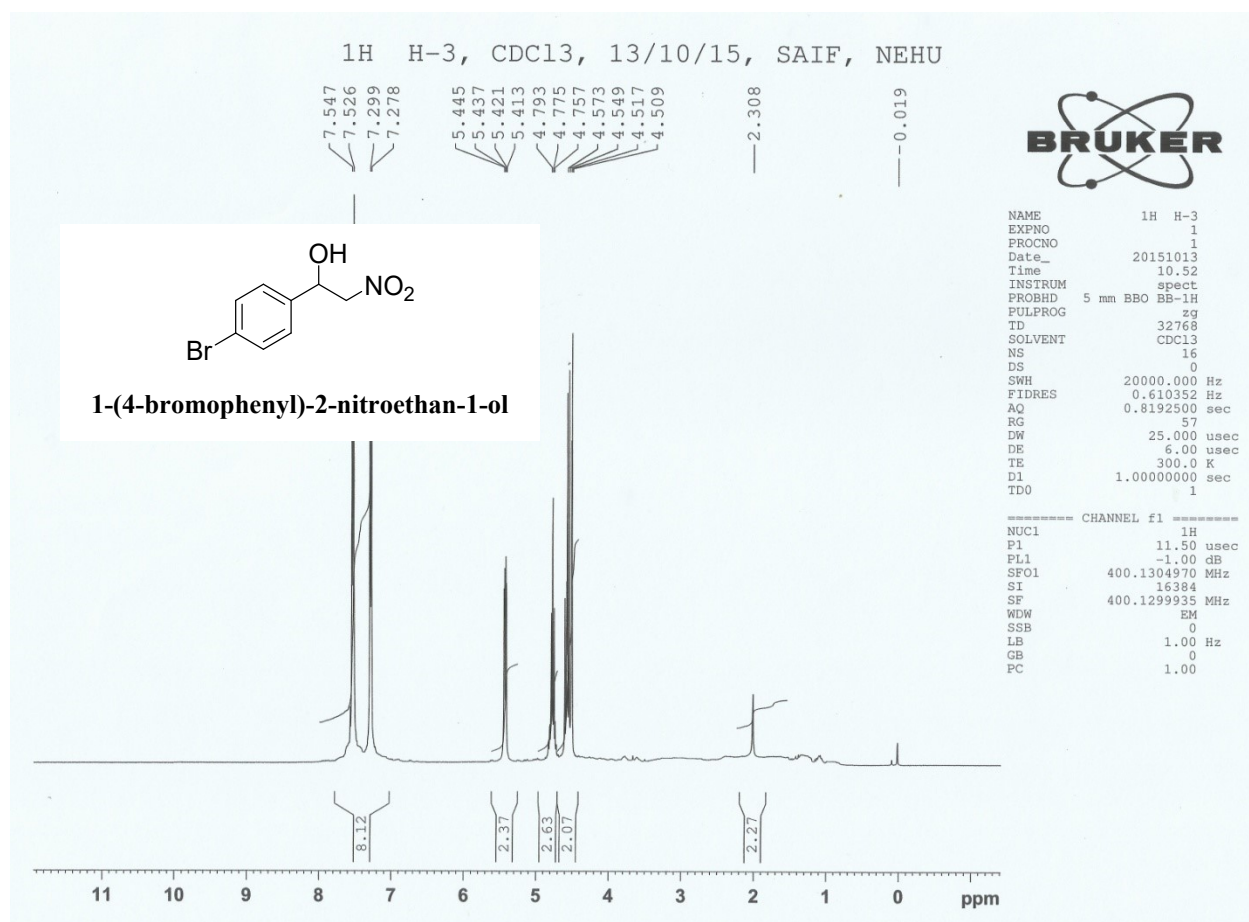
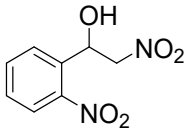
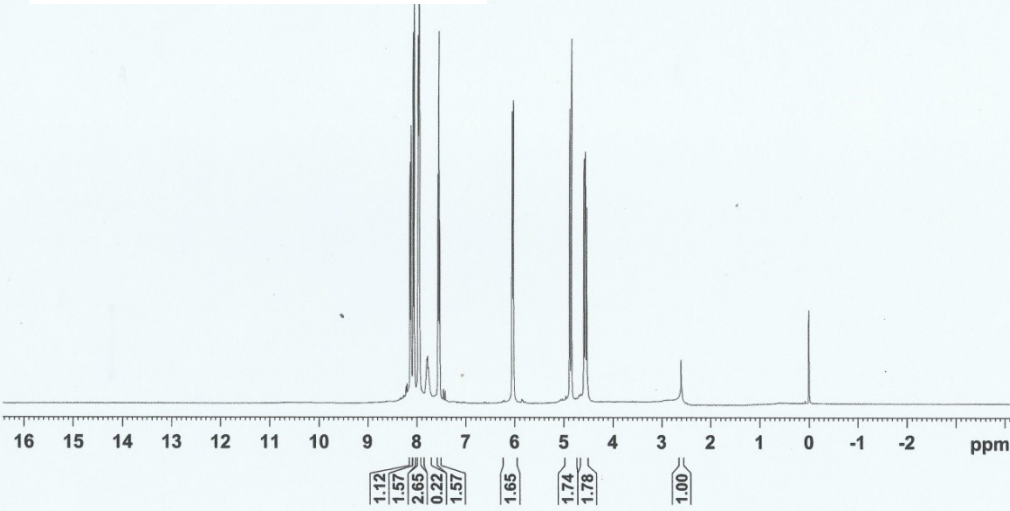


Fig: ¹H and ¹³C-NMR spectra of **1-(4-bromophenyl)-2-nitroethan-1-ol** (Table 3, Entry 5)

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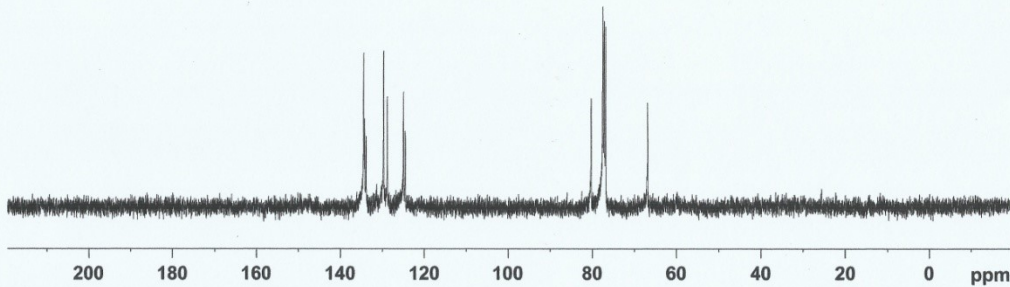


2-nitro-1-(2-nitrophenyl)ethan-1-ol



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Fig: ¹H and ¹³C-NMR spectra of 2-nitro-1-(2-nitrophenyl)ethan-1-ol (Table 3, Entry 8)

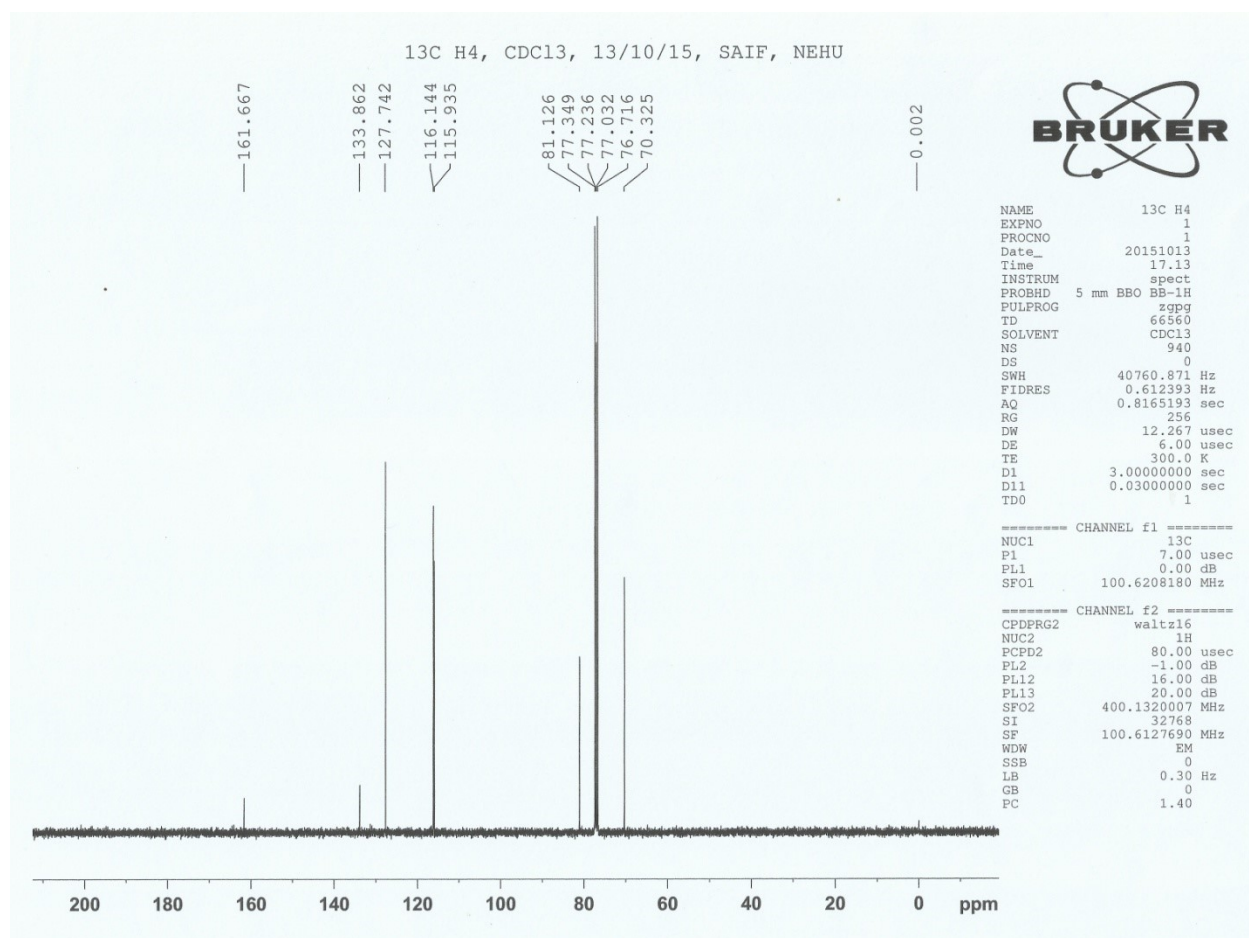
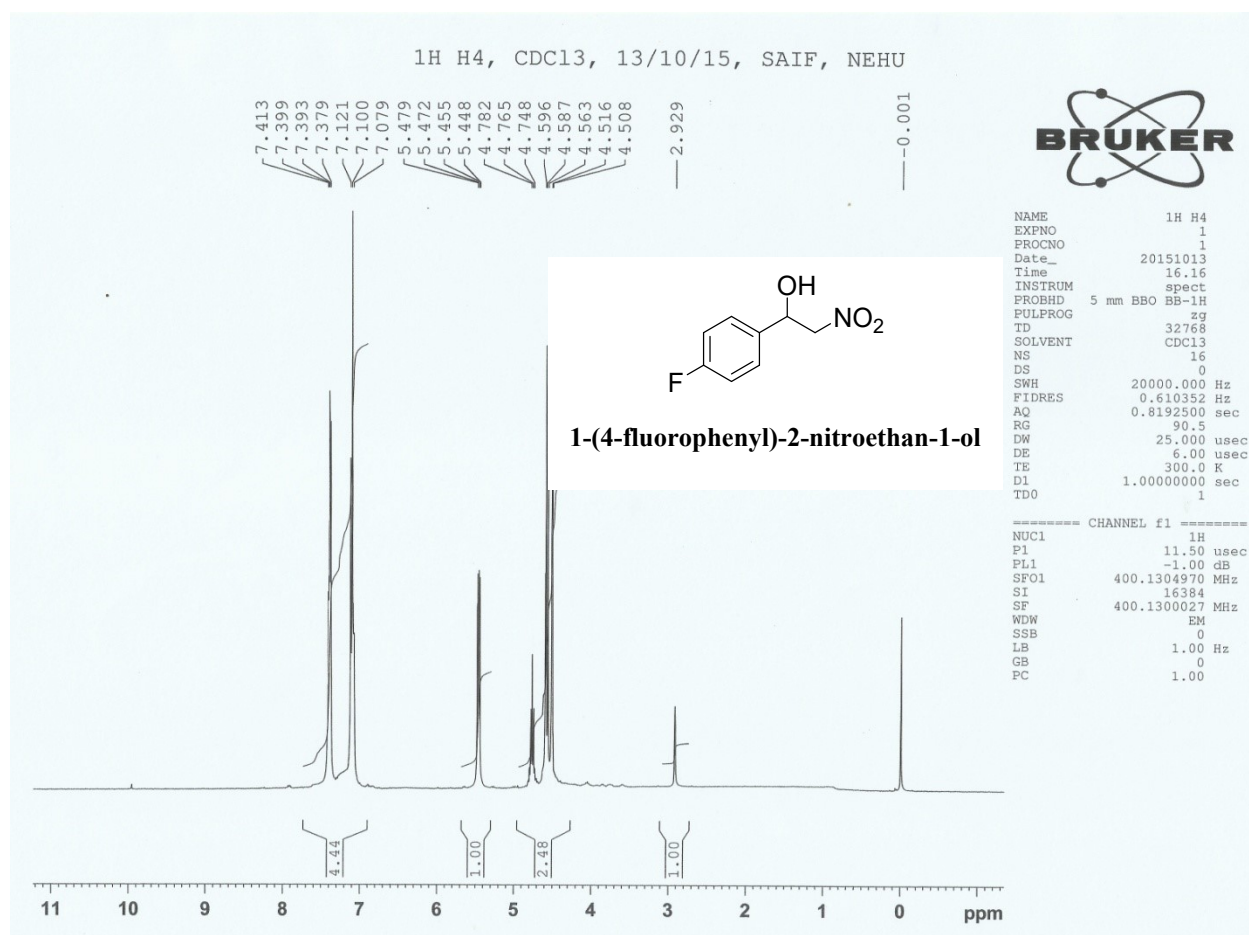
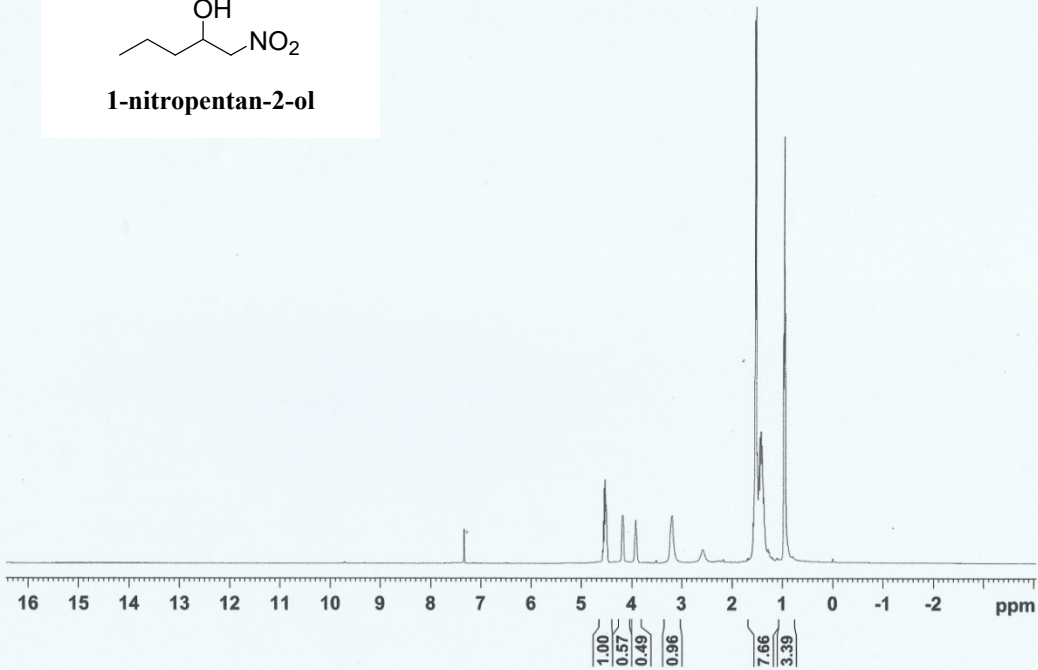
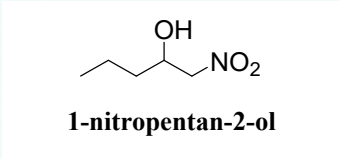


Fig: ¹H and ¹³C-NMR spectra of 1-(4-fluorophenyl)-2-nitroethan-1-ol (Table 3, Entry 11)

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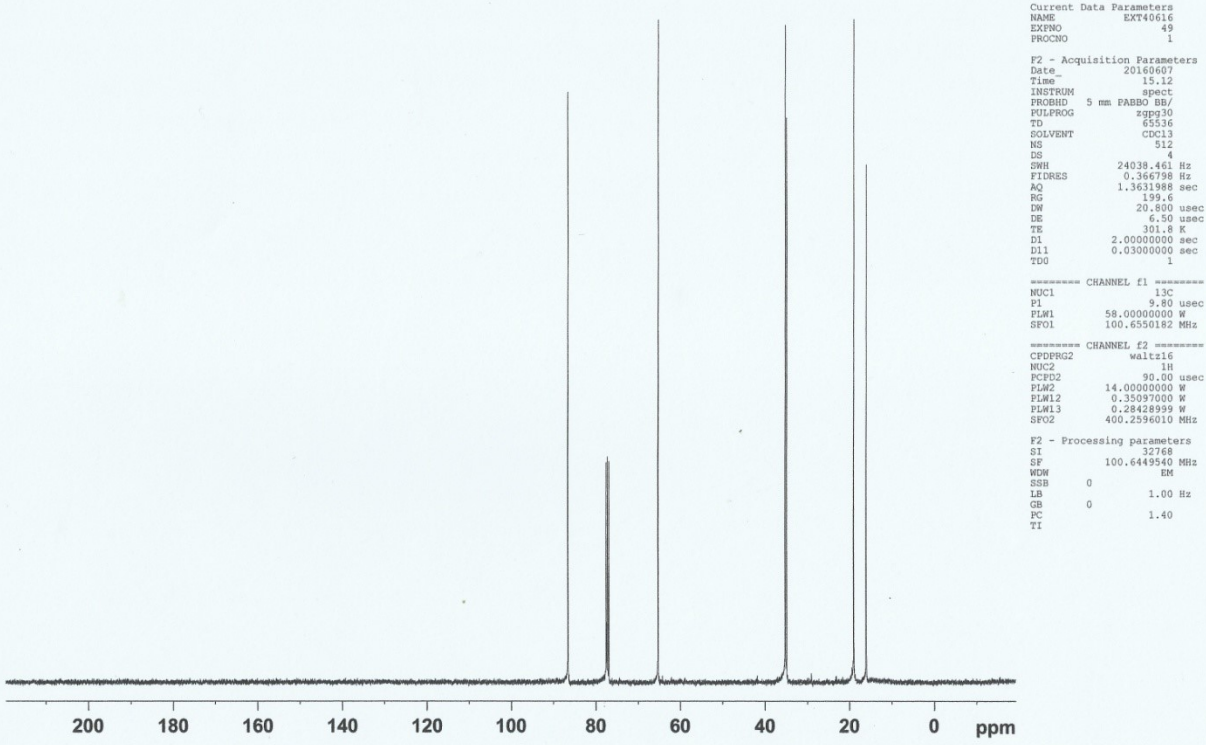


Fig: ¹H and ¹³C-NMR spectra of 1-nitropentan-2-ol (Table 3, Entry 14)

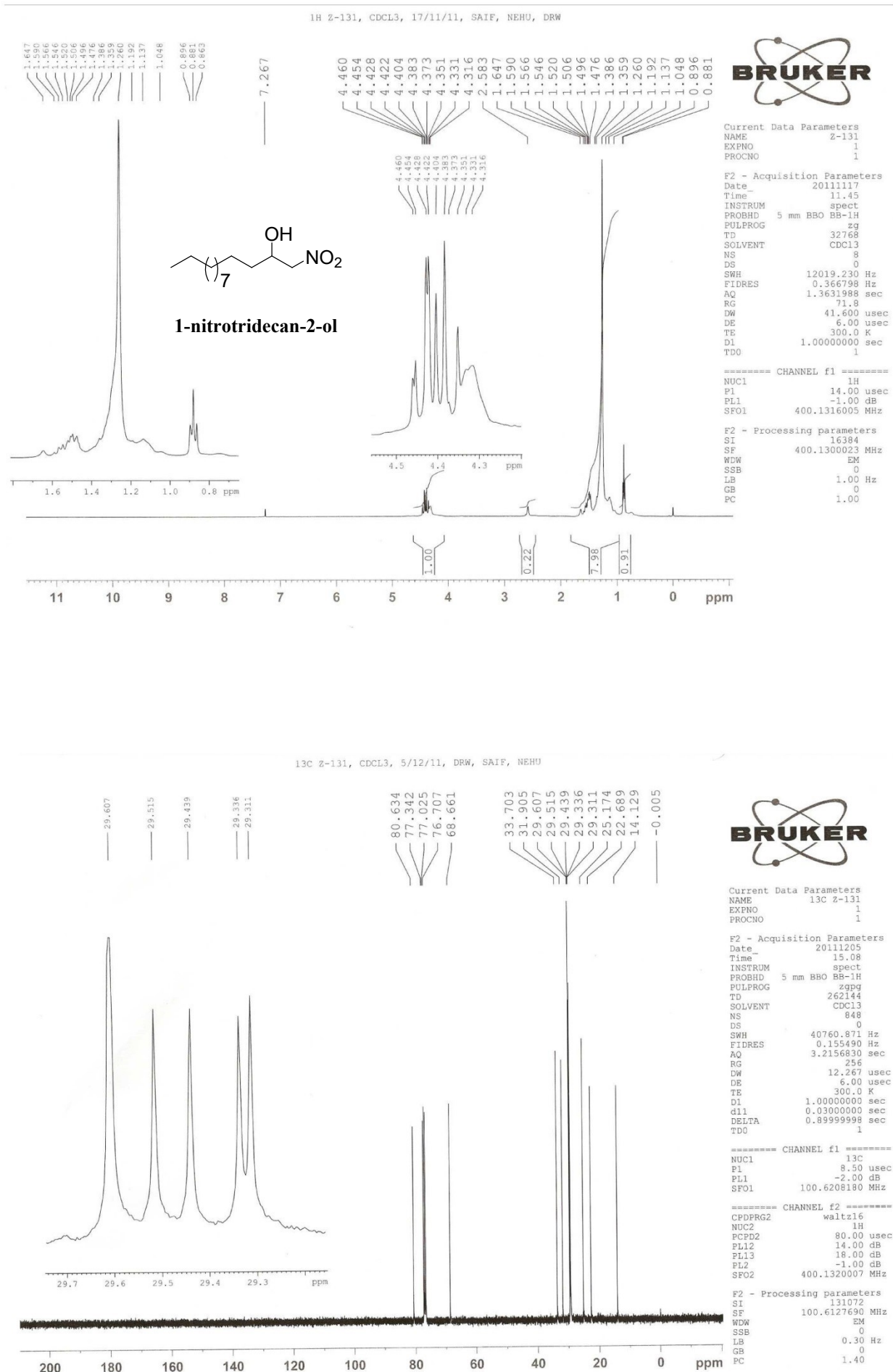


Fig: ¹H and ¹³C-NMR spectra of 1-nitrotridecan-2-ol (Table 3, Entry 16)

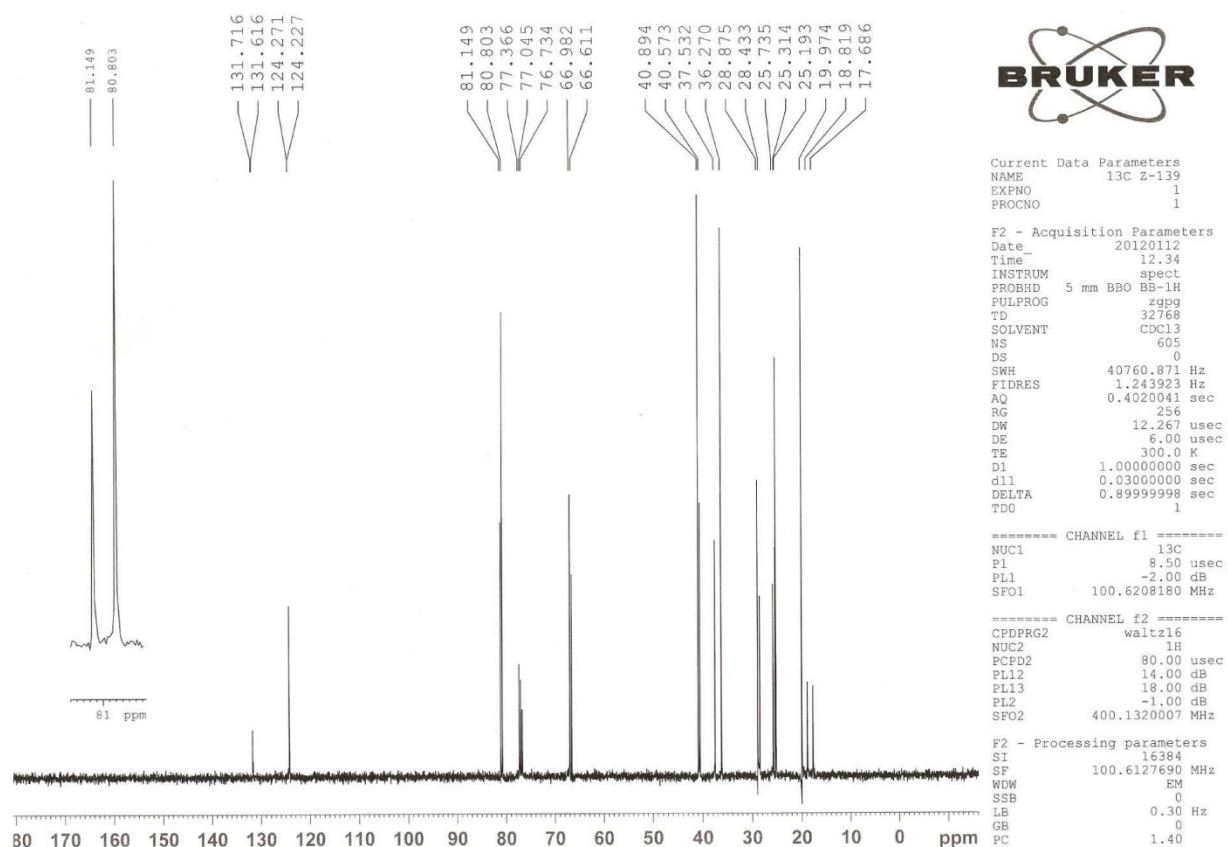
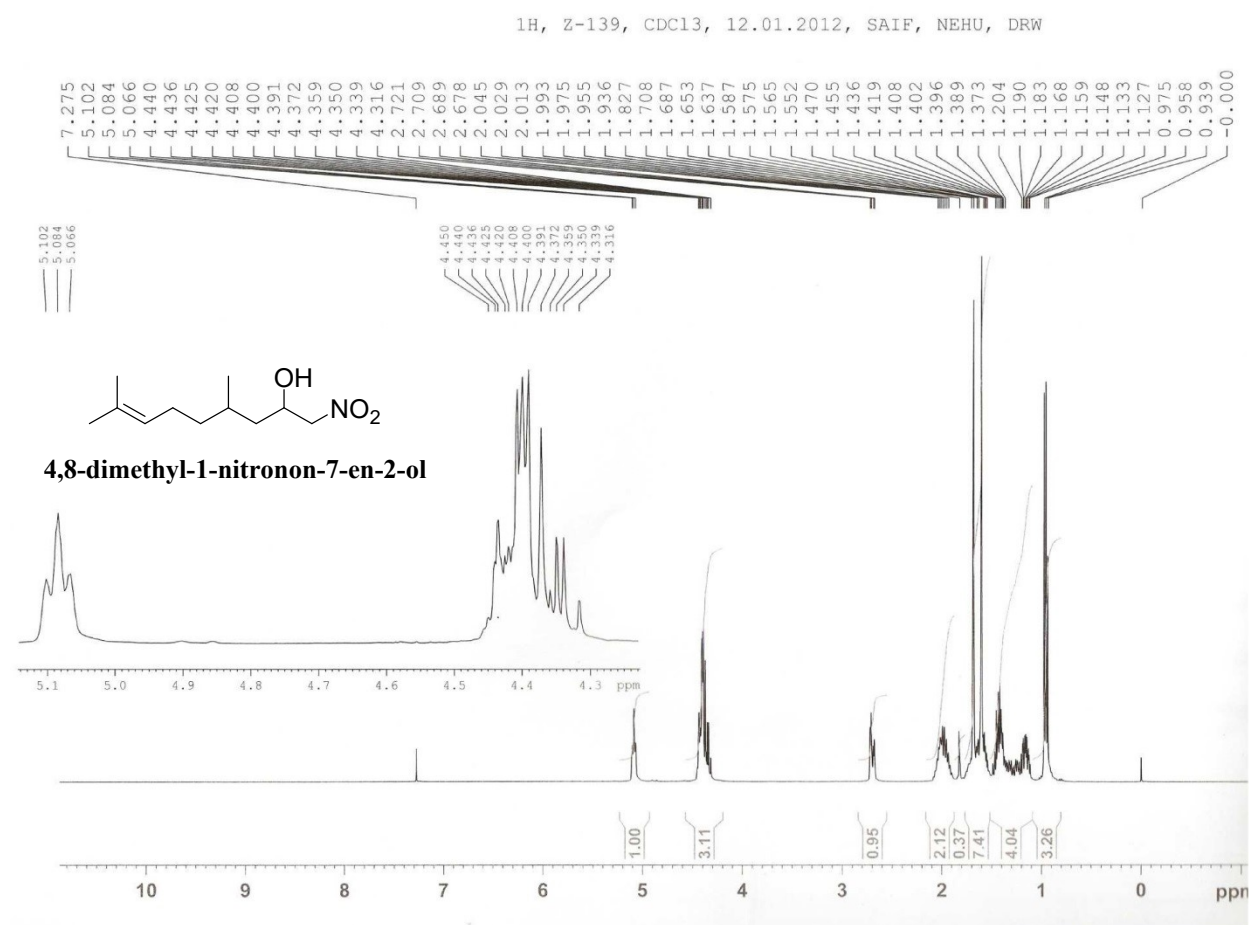


Fig: ¹H and ¹³C-NMR spectra of **4,8-dimethyl-1-nitronon-7-en-2-ol**(Table 3, Entry 17)

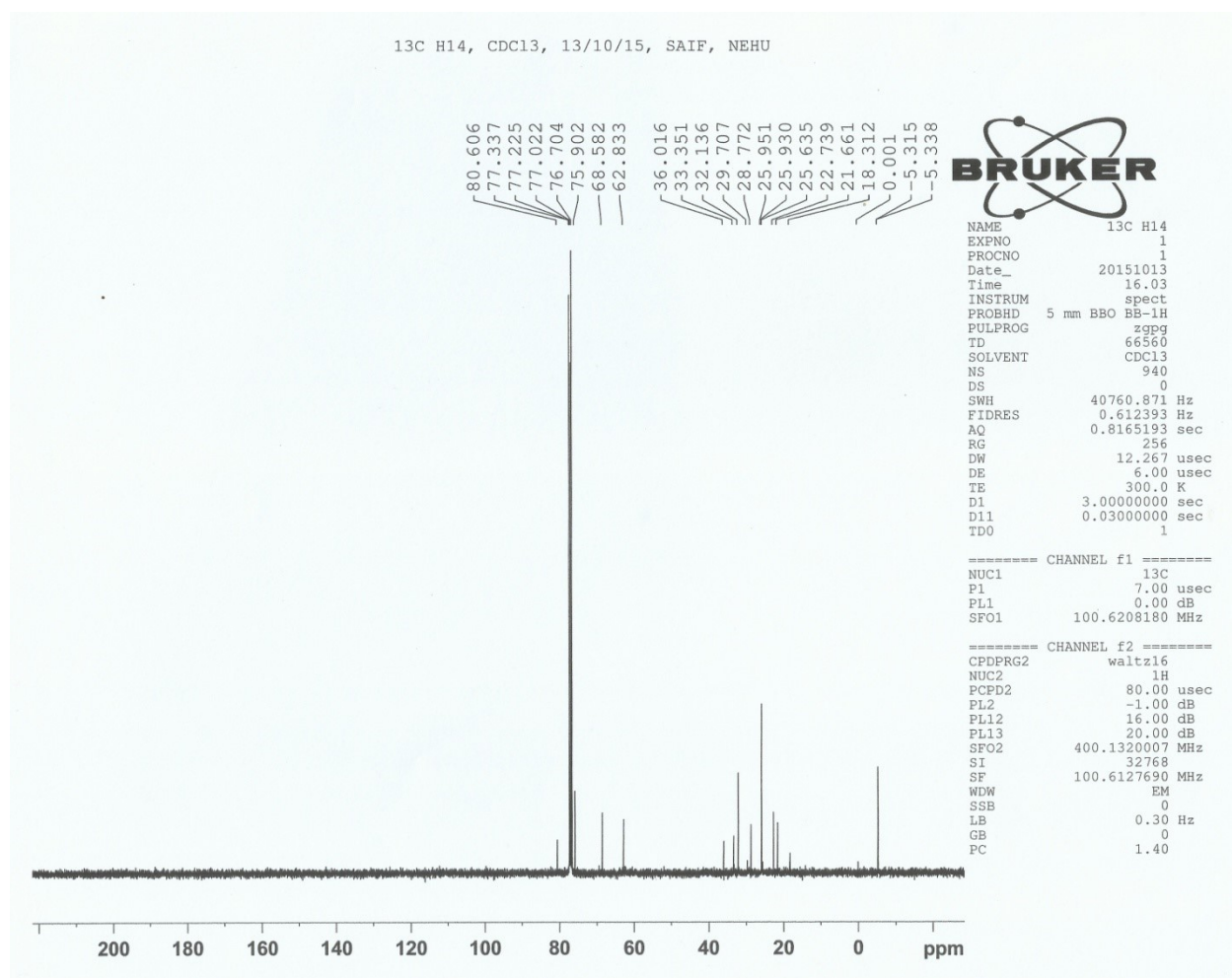
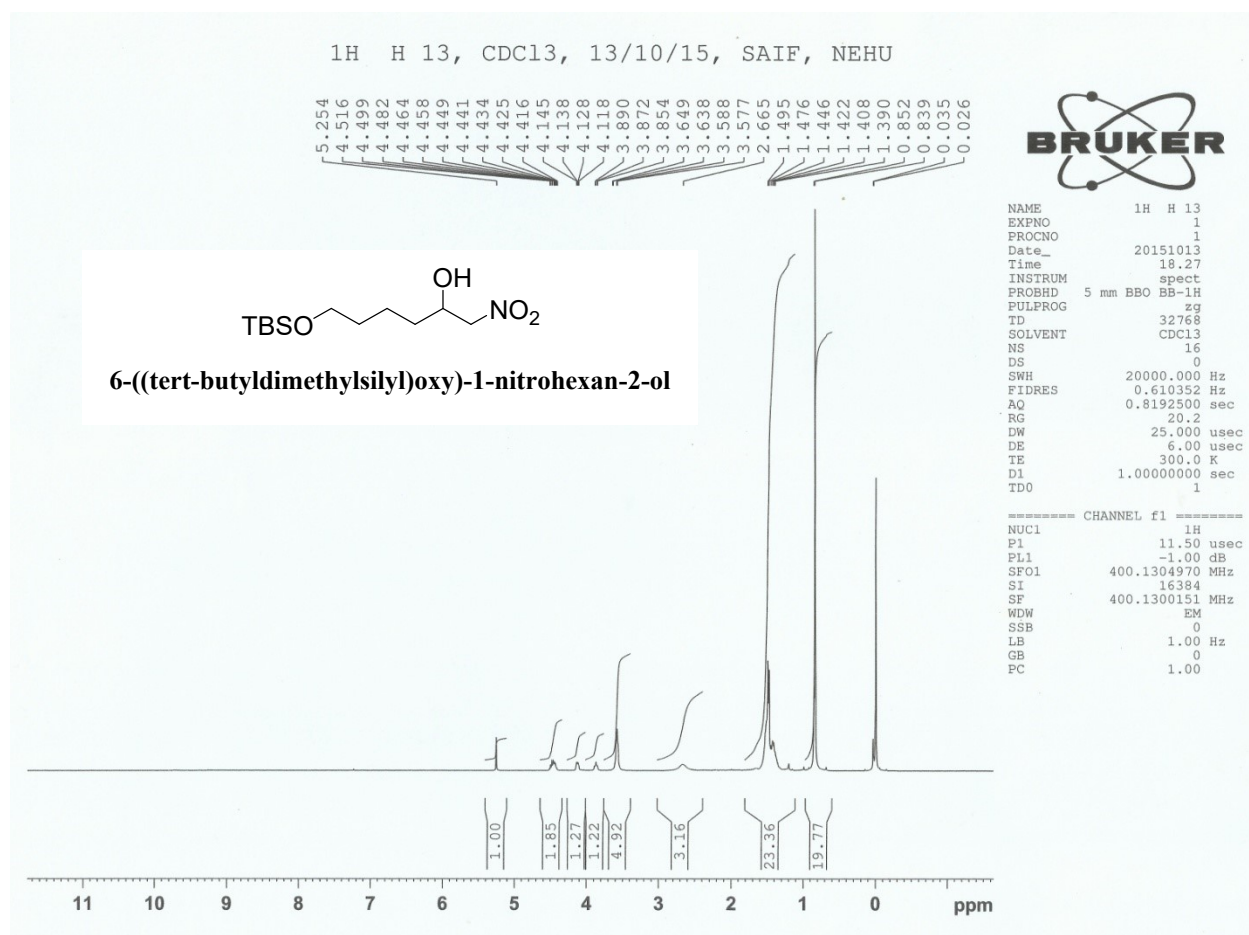


Fig: ^1H and ^{13}C -NMR spectra of 6-((tert-butyldimethylsilyl)oxy)-1-nitrohexan-2-ol (Table 3, Entry 18)

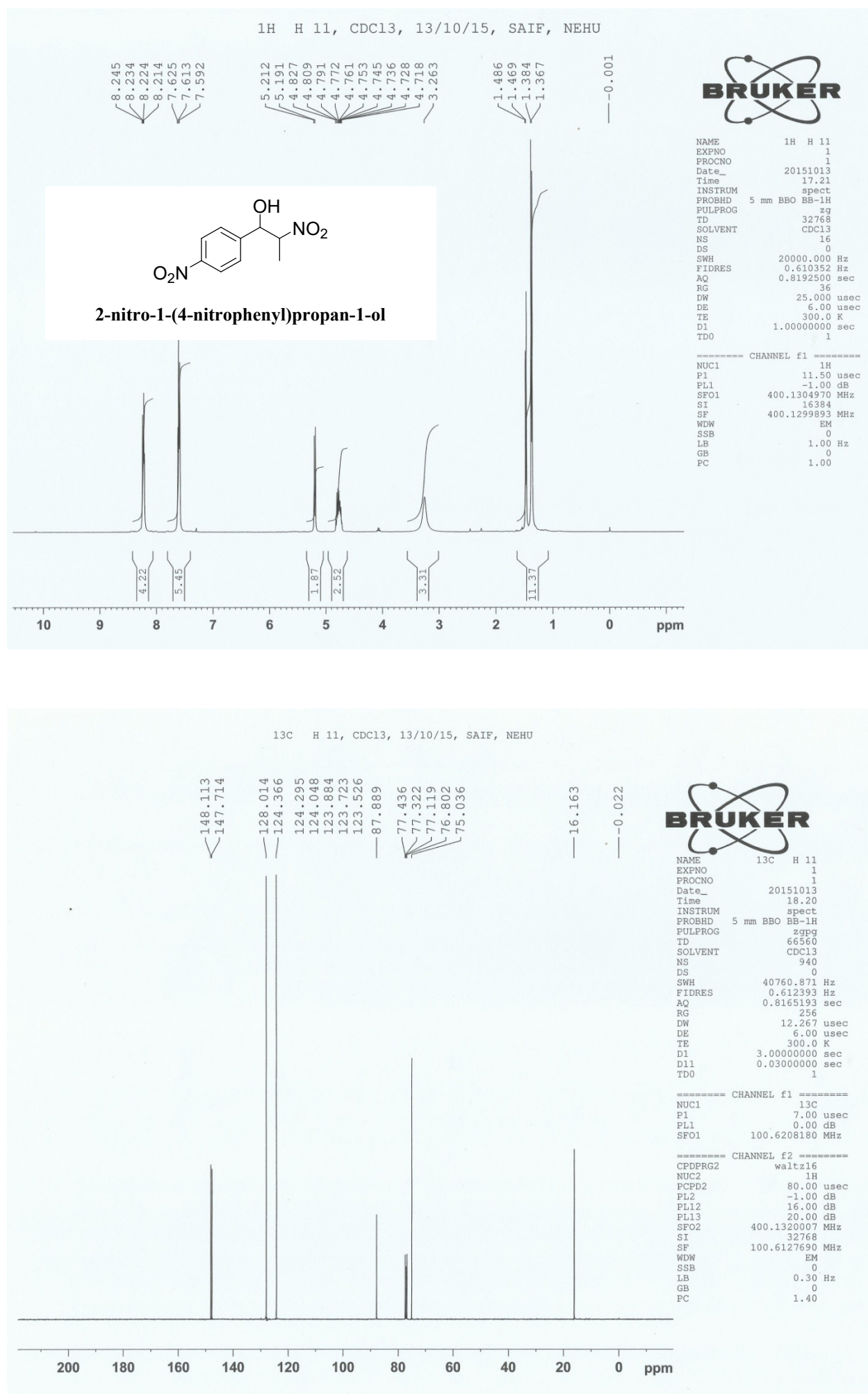


Fig: ¹H and ¹³C-NMR spectra of **2-nitro-1-(4-nitrophenyl)propan-1-ol** (Table 4, Entry 1)

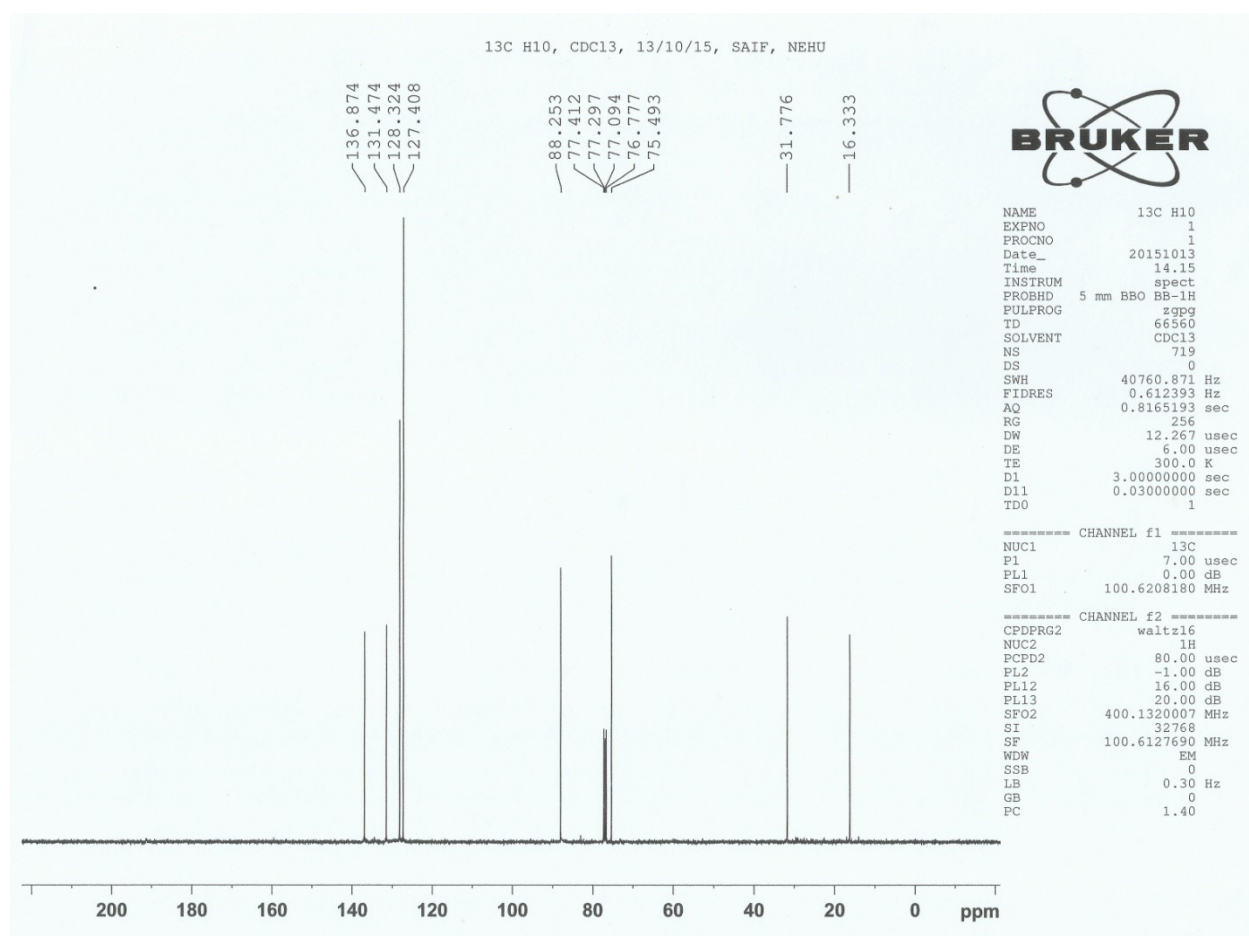
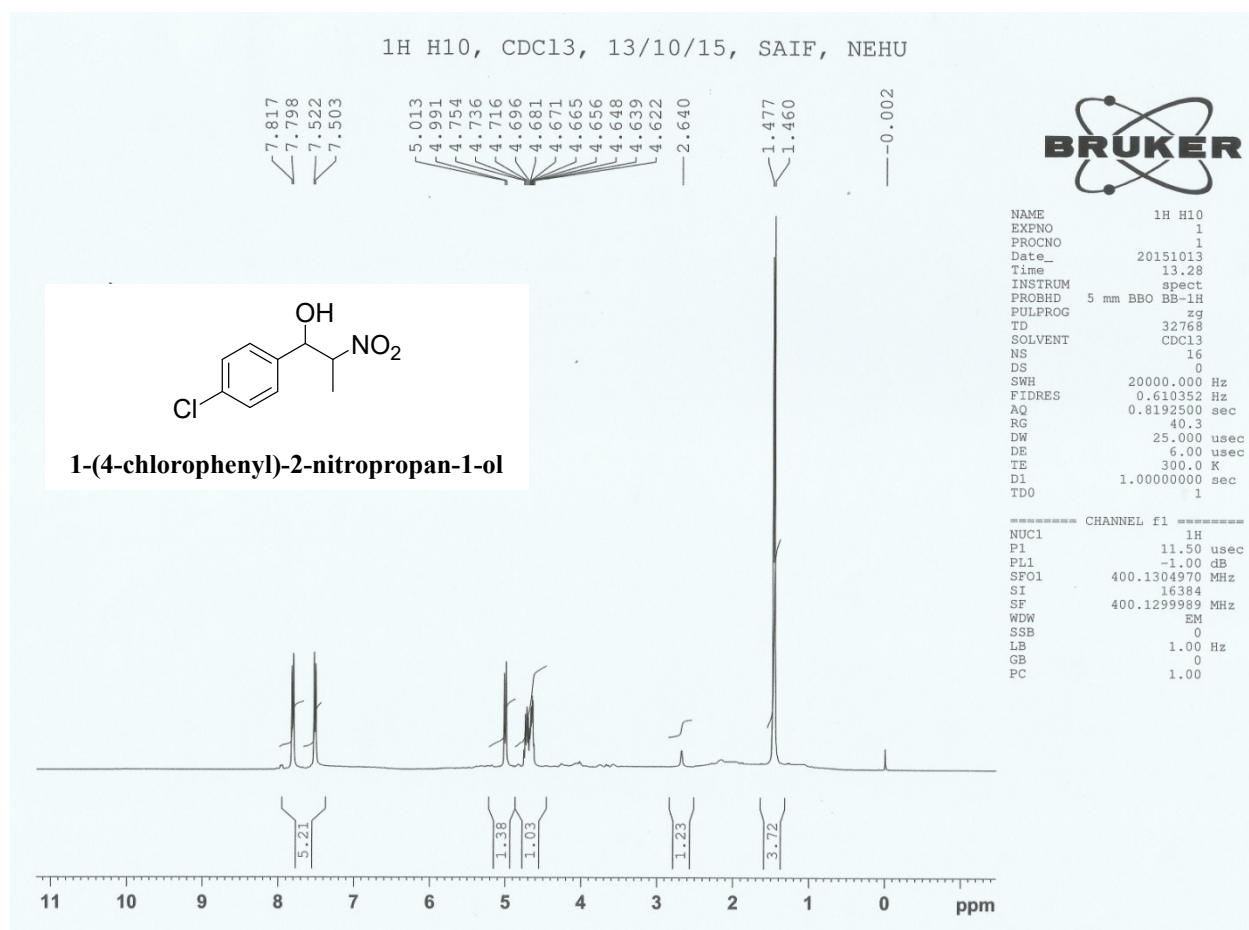


Fig: ^1H and ^{13}C -NMR spectra of 1-(4-chlorophenyl)-2-nitropropan-1-ol (Table 4, Entry 2)

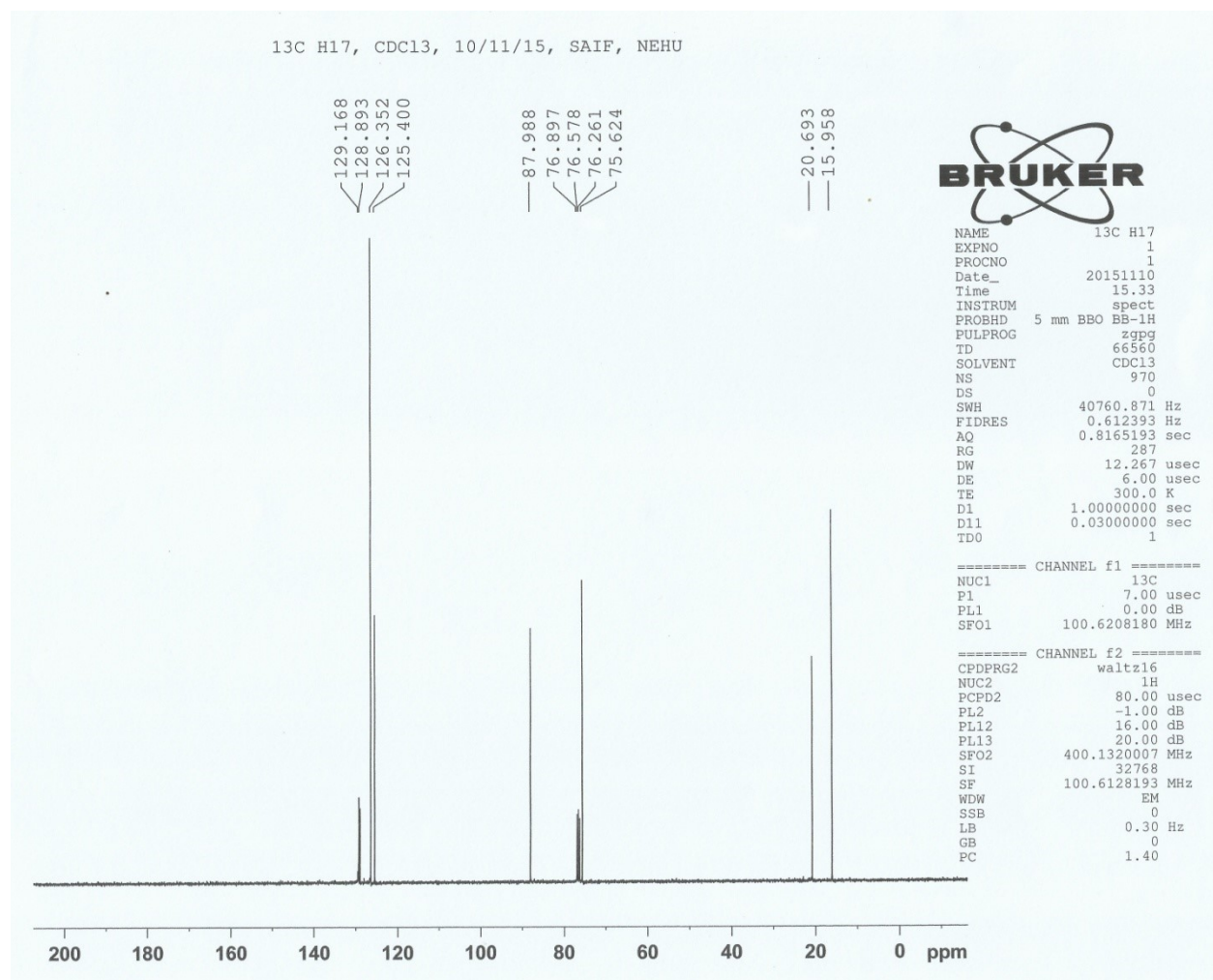
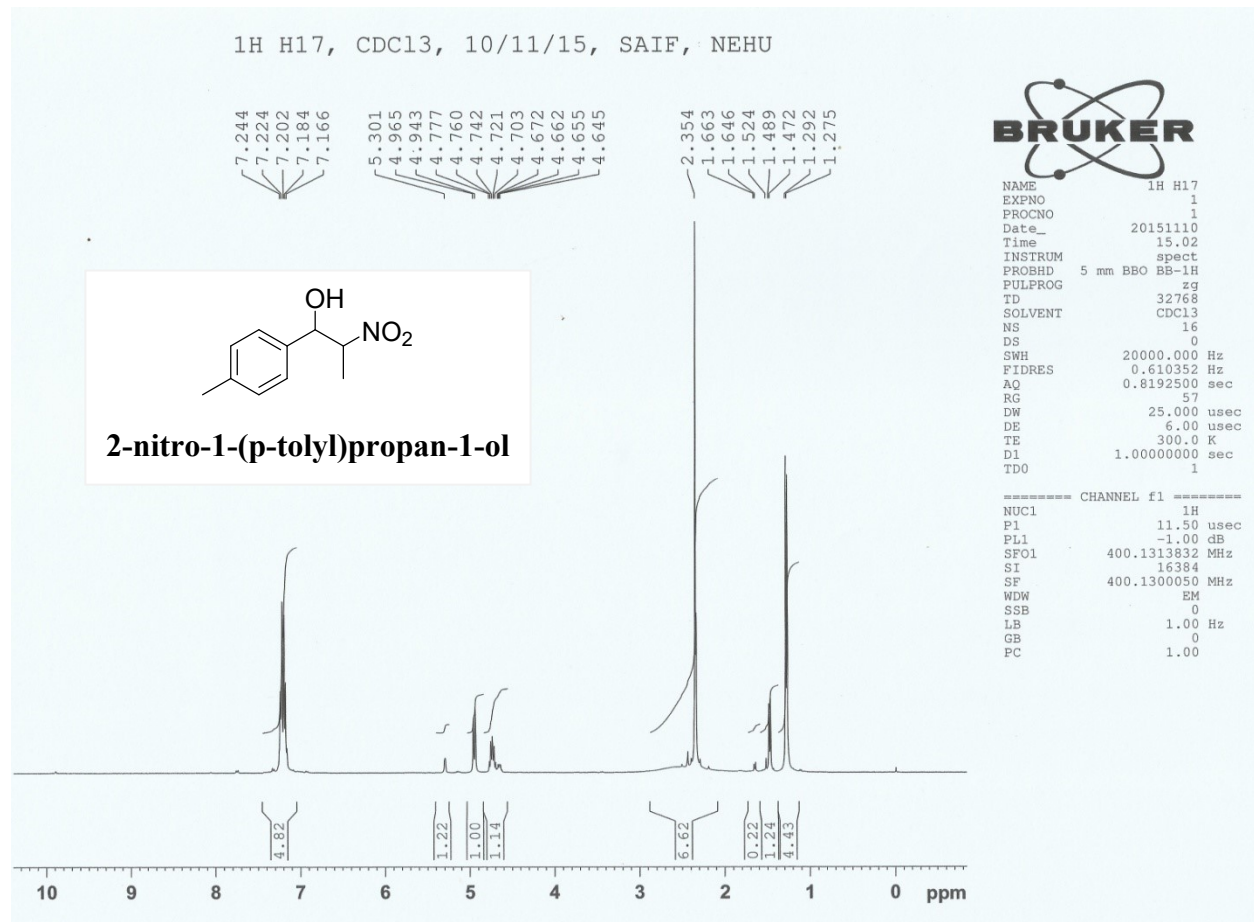
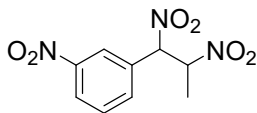
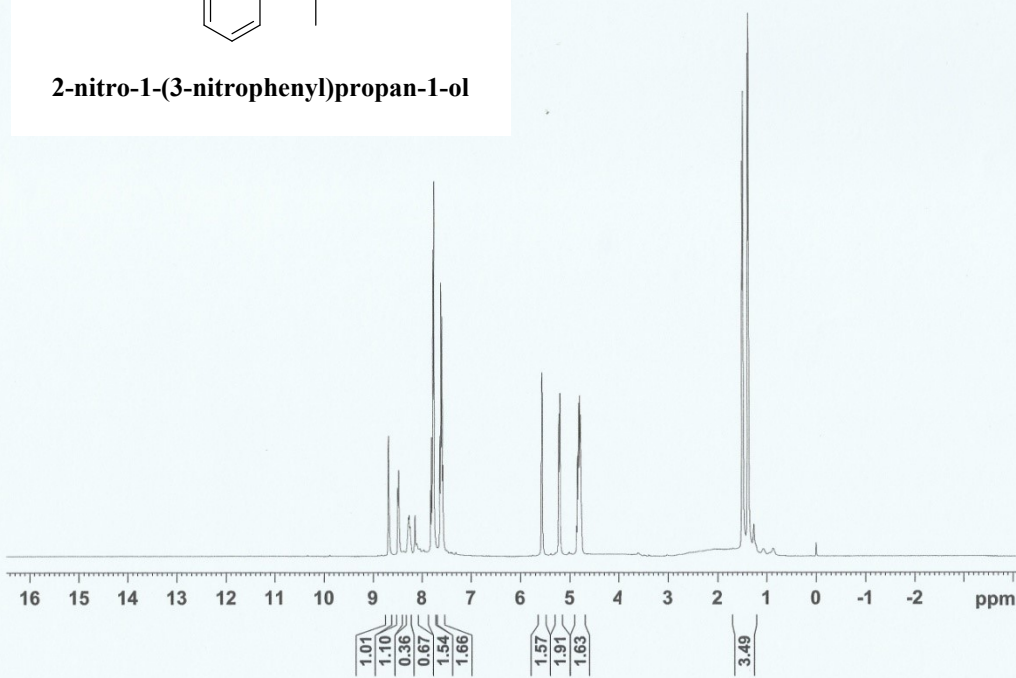


Fig: ¹H and ¹³C-NMR spectra of 2-nitro-1-(p-tolyl)propan-1-ol (Table 4, Entry 3)

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2-nitro-1-(3-nitrophenyl)propan-1-ol



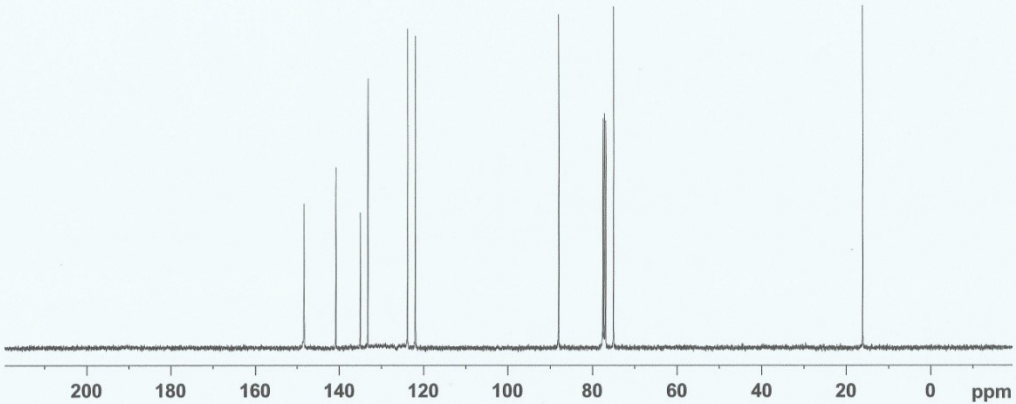
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Fig: ¹H and ¹³C-NMR spectra of 2-nitro-1-(3-nitrophenyl)propan-1-ol (Tbale 4, Entry 4)

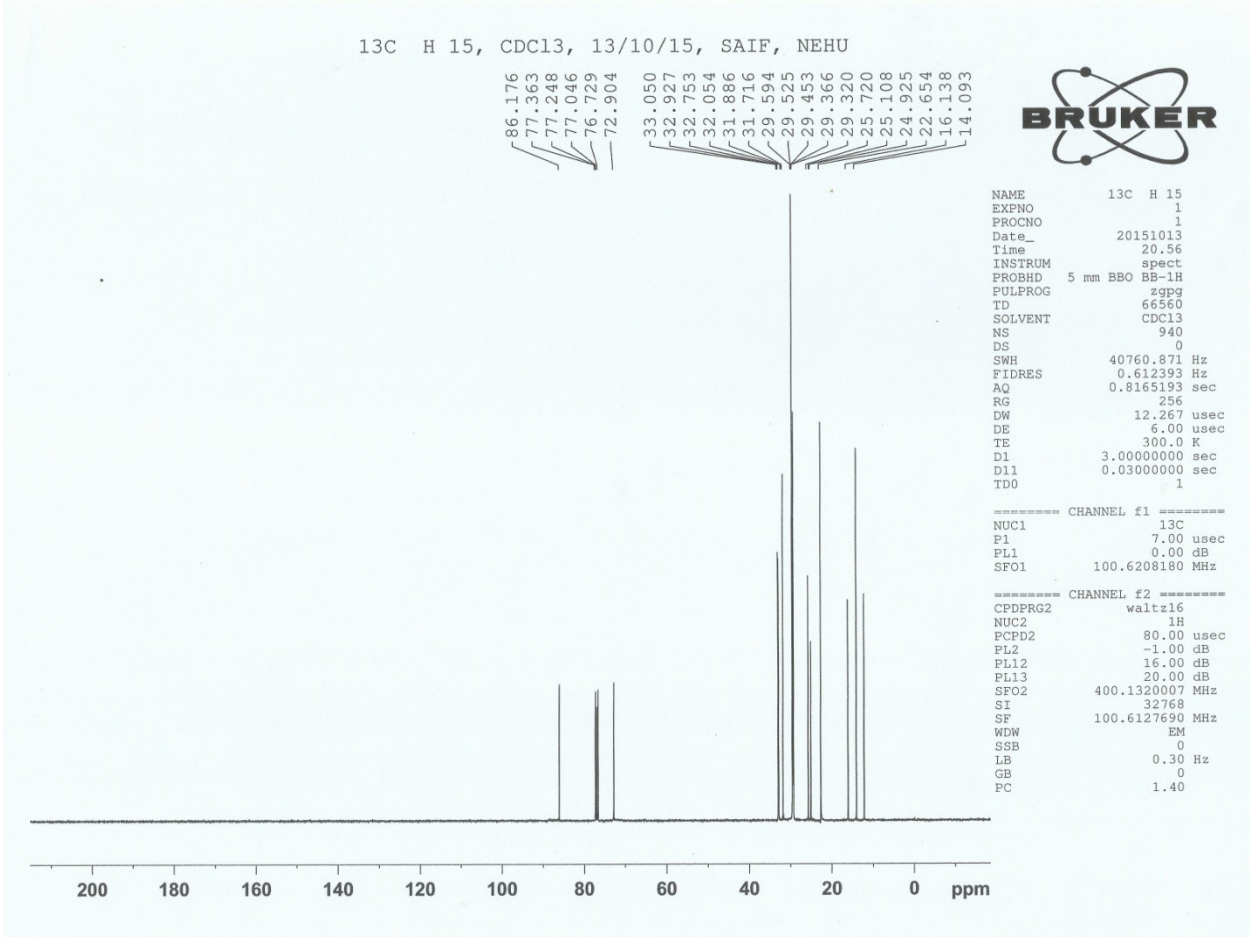
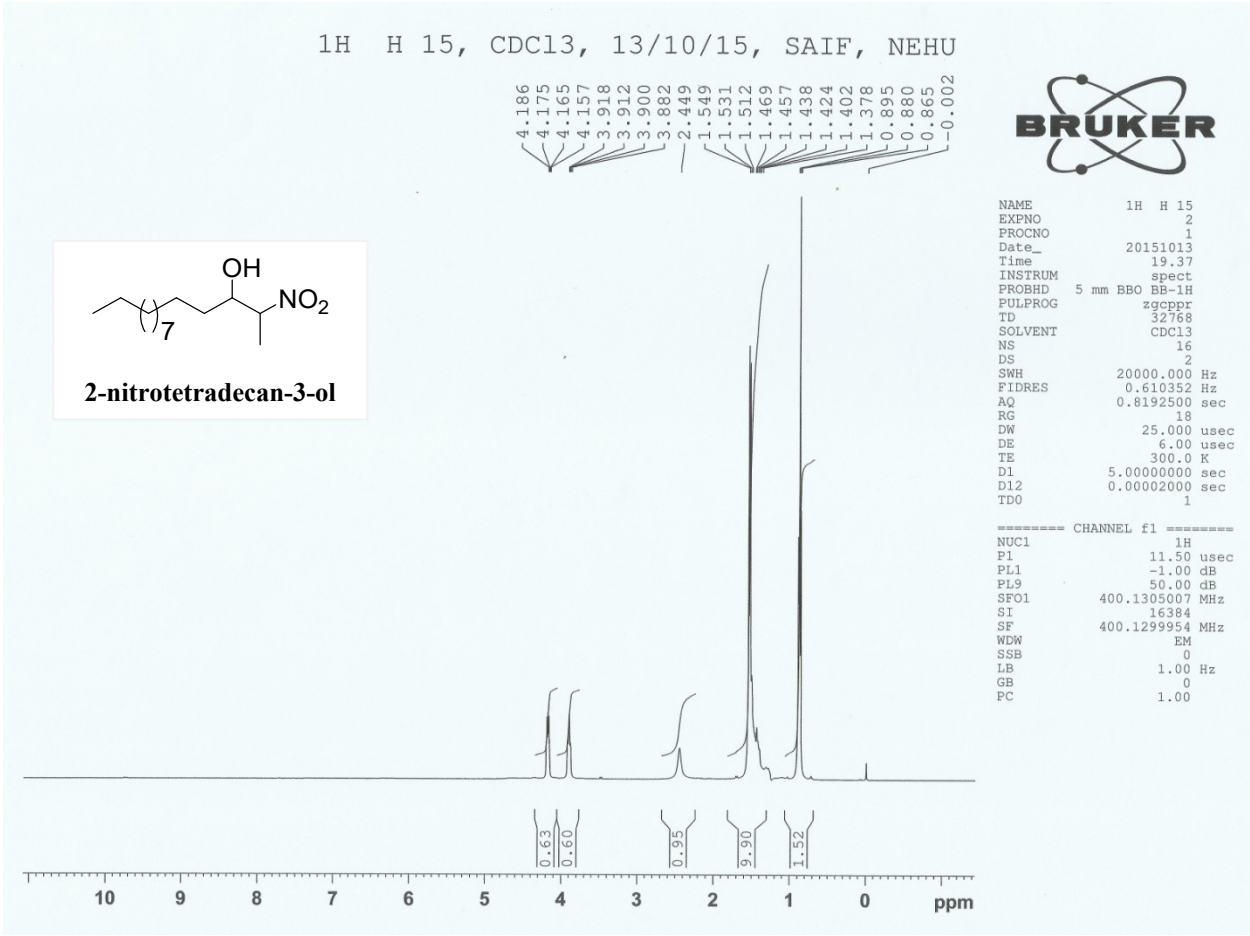


Fig: ¹H and ¹³C-NMR spectra of **2-nitrotetradecan-3-ol** (Table 4, Entry 5)

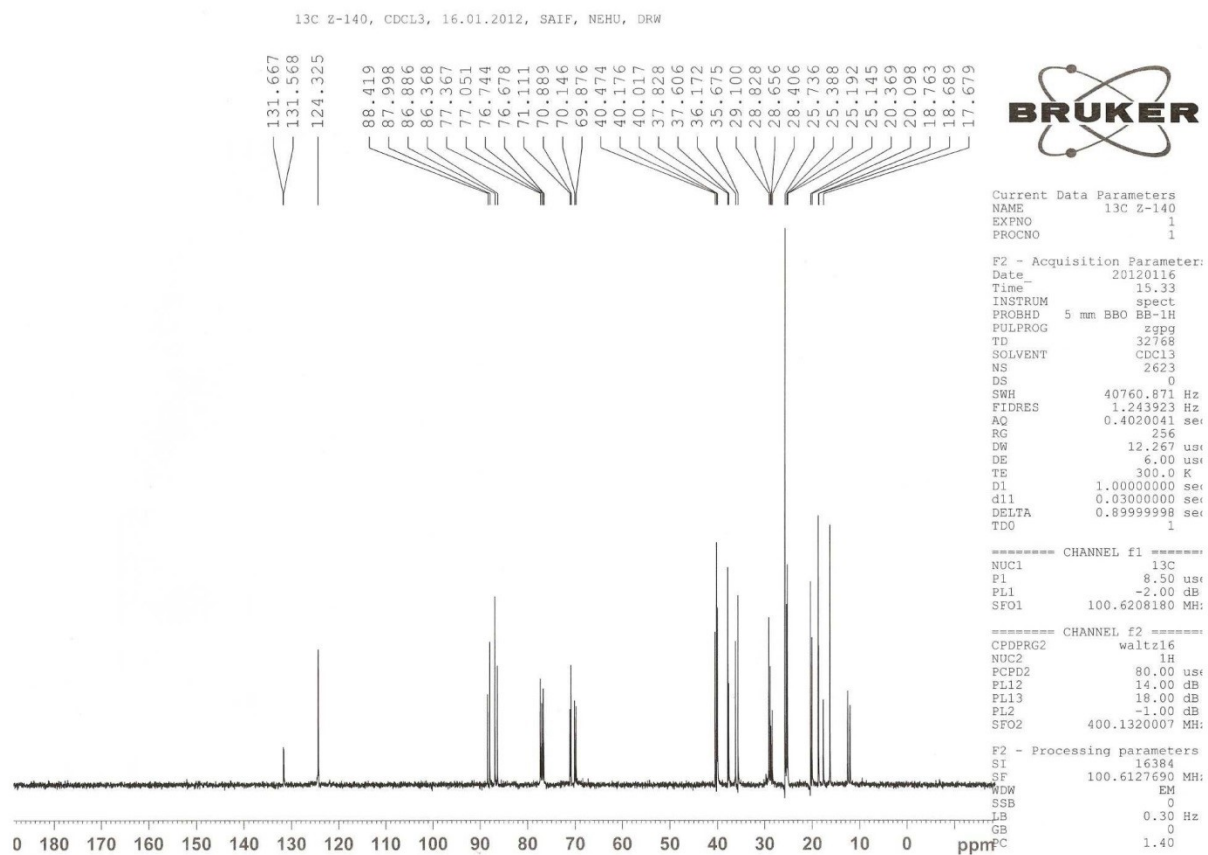
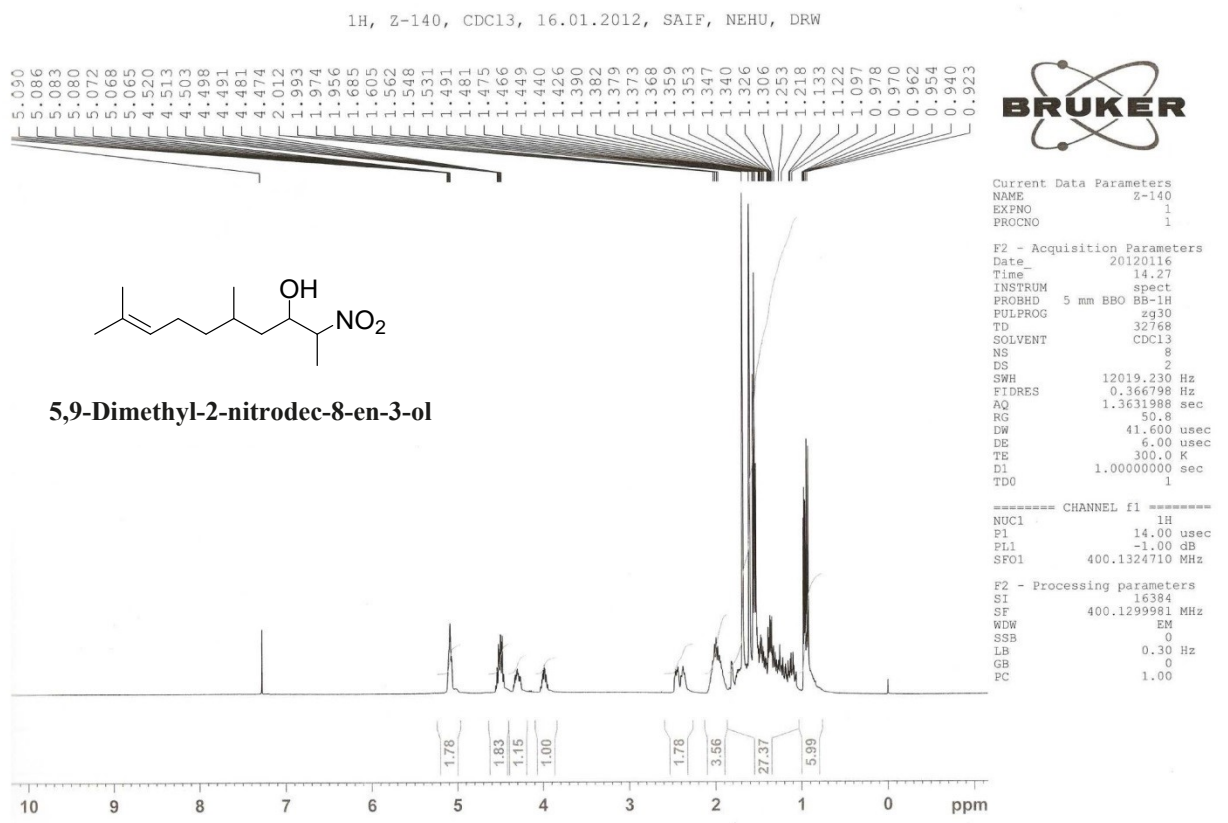
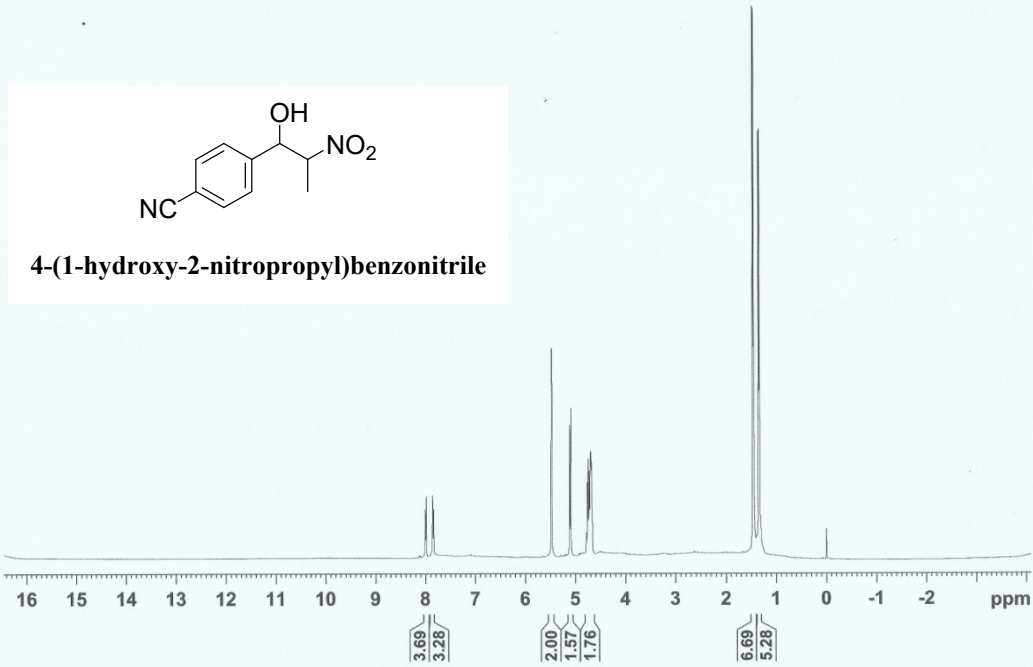
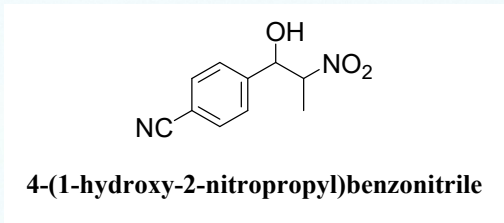


Fig: ¹H and ¹³C-NMR spectra of **5,9-Dimethyl-2-nitrodec-8-en-3-ol** (Table 4, Entry 6)

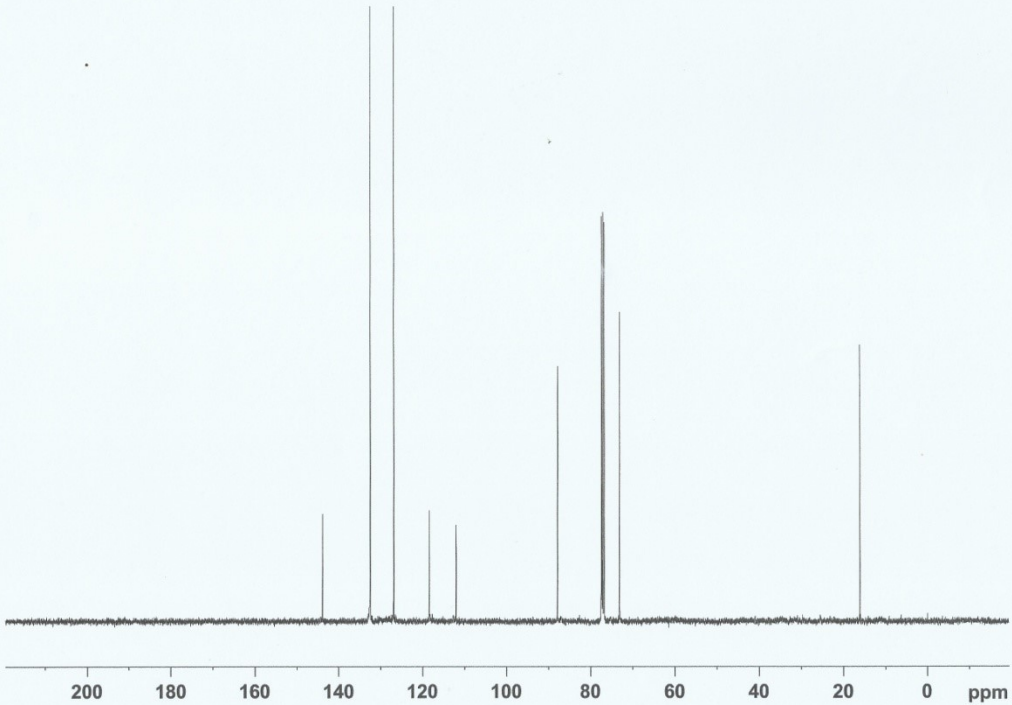


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TE 1.00000000 sec
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TDO

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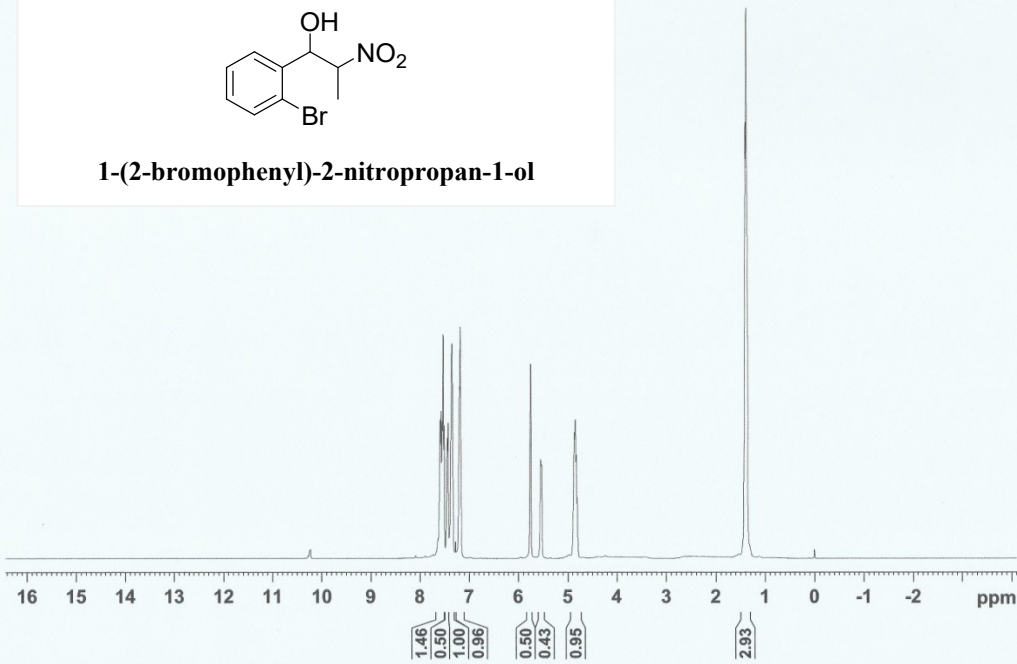
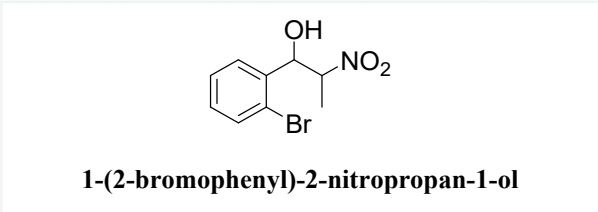
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F2 - Processing parameters
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GB 0
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Fig: ¹H and ¹³C-NMR spectra of **4-(1-hydroxy-2-nitropropyl)benzonitrile** (Table 4, Entry 9)

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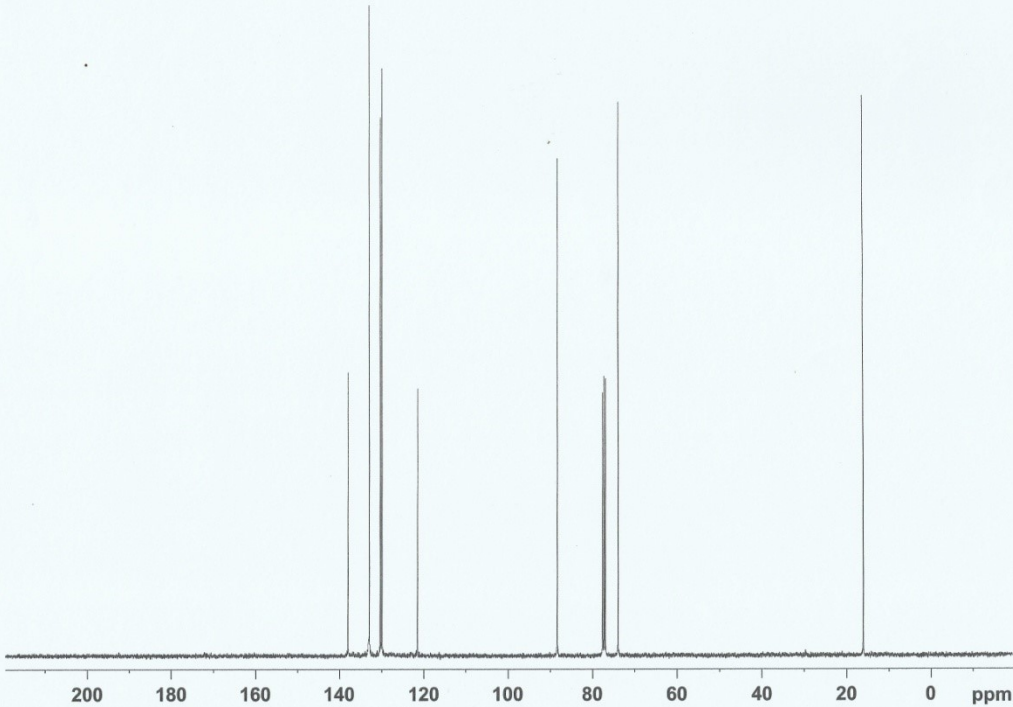
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Signature SIF VIT VELLORE
H40



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SFO2 400.2596010 MHz

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Fig: ¹H and ¹³C-NMR spectra of 1-(2-bromophenyl)-2-nitropropan-1-ol (Table 4, Entry 10)

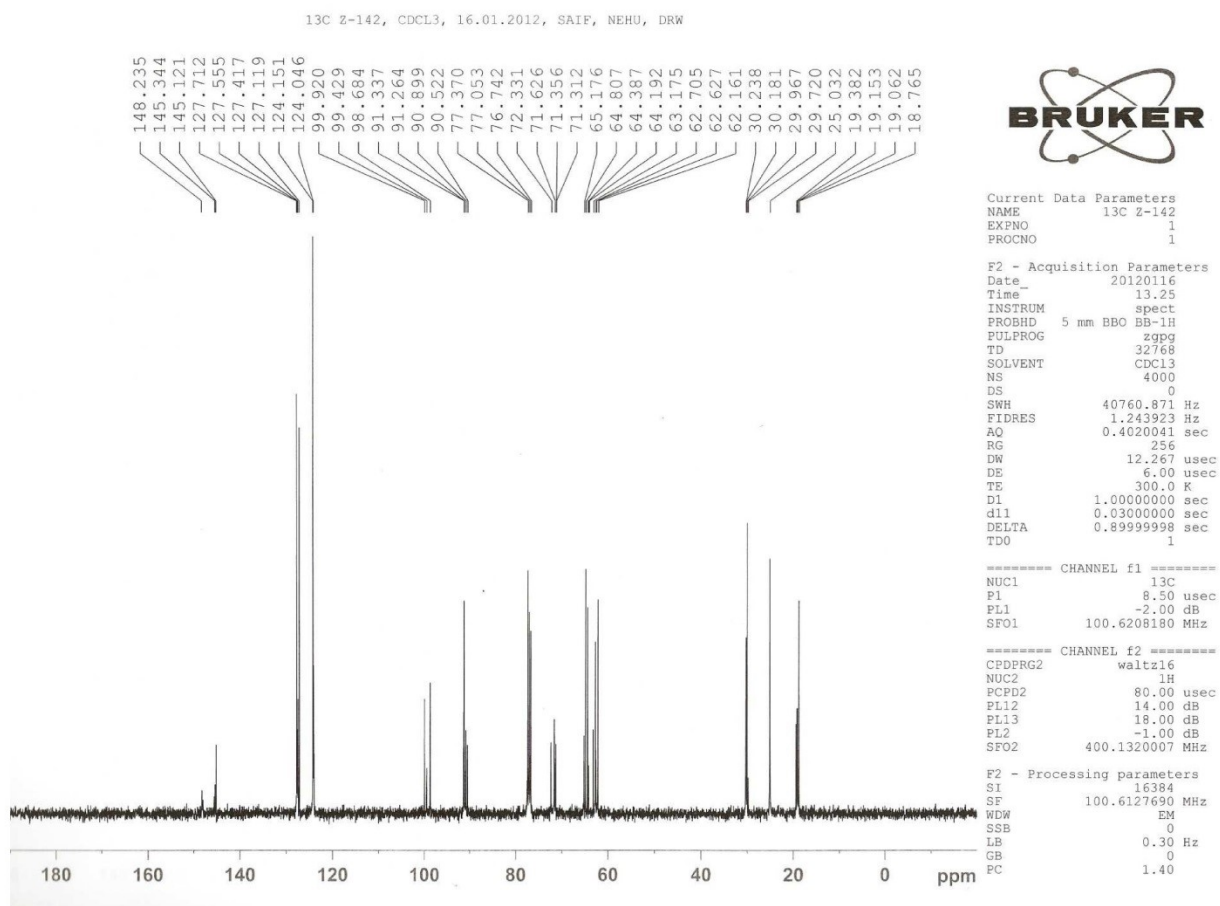
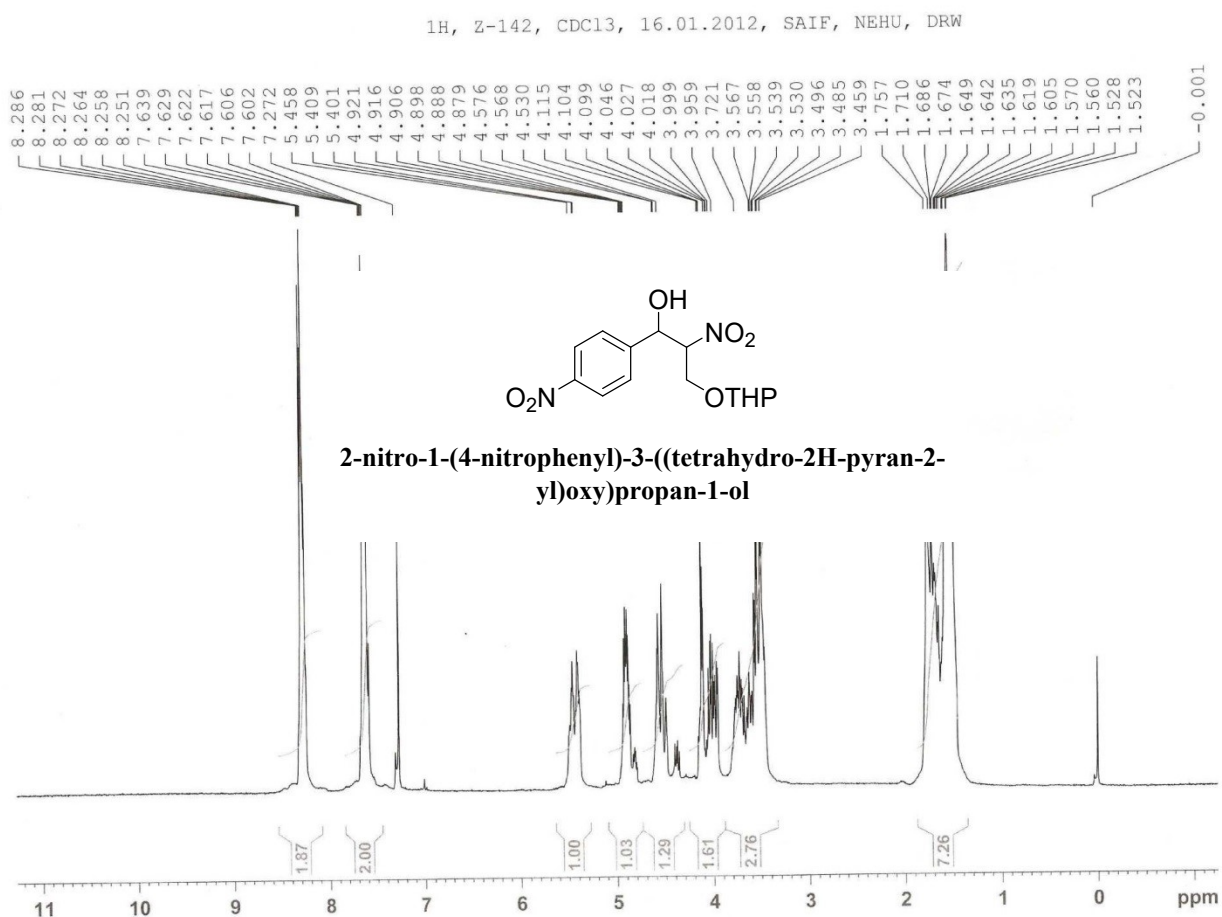


Fig: ¹H and ¹³C-NMR spectra of 2-nitro-1-(4-nitrophenyl)-3-((tetrahydro-2H-pyran-2-yl)oxy)propan-1-ol (Table, 4 Entry 12)

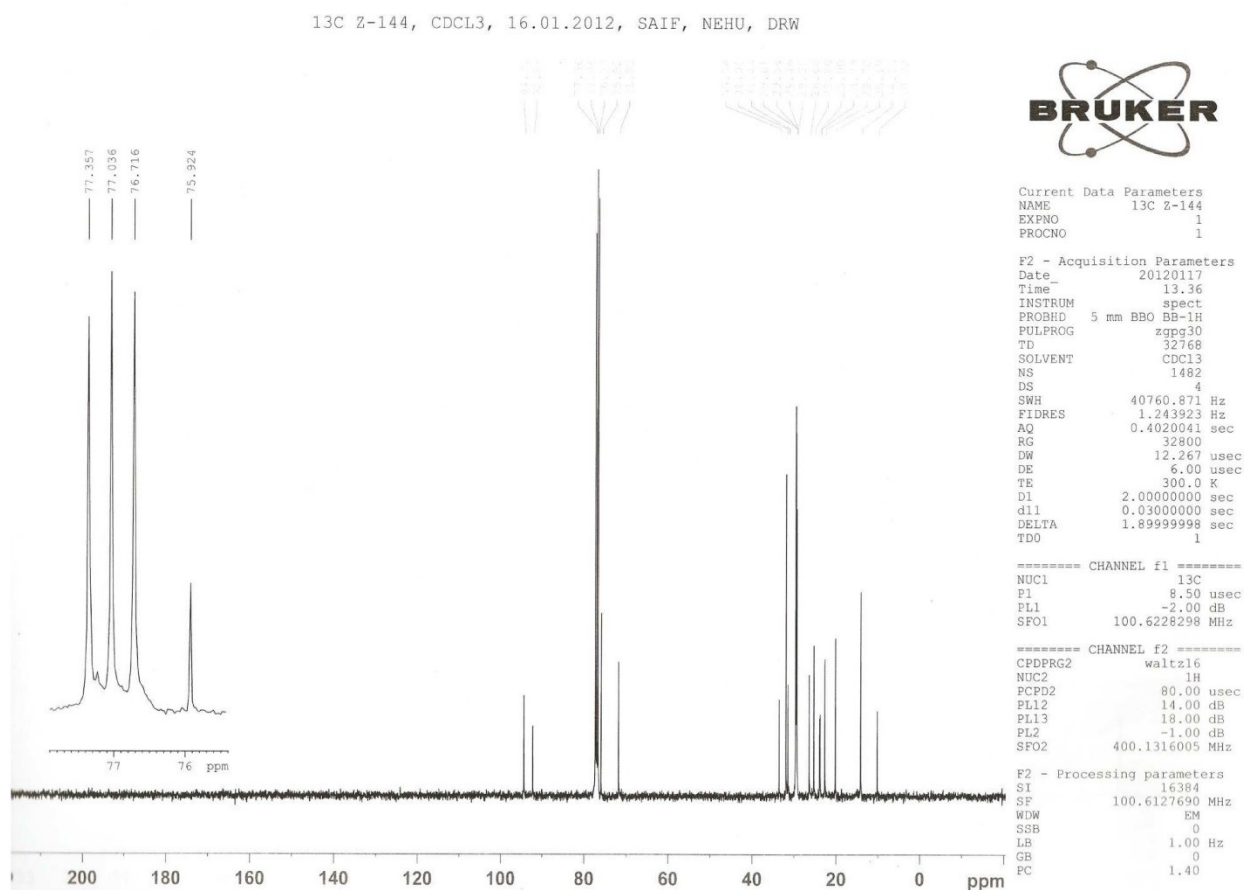
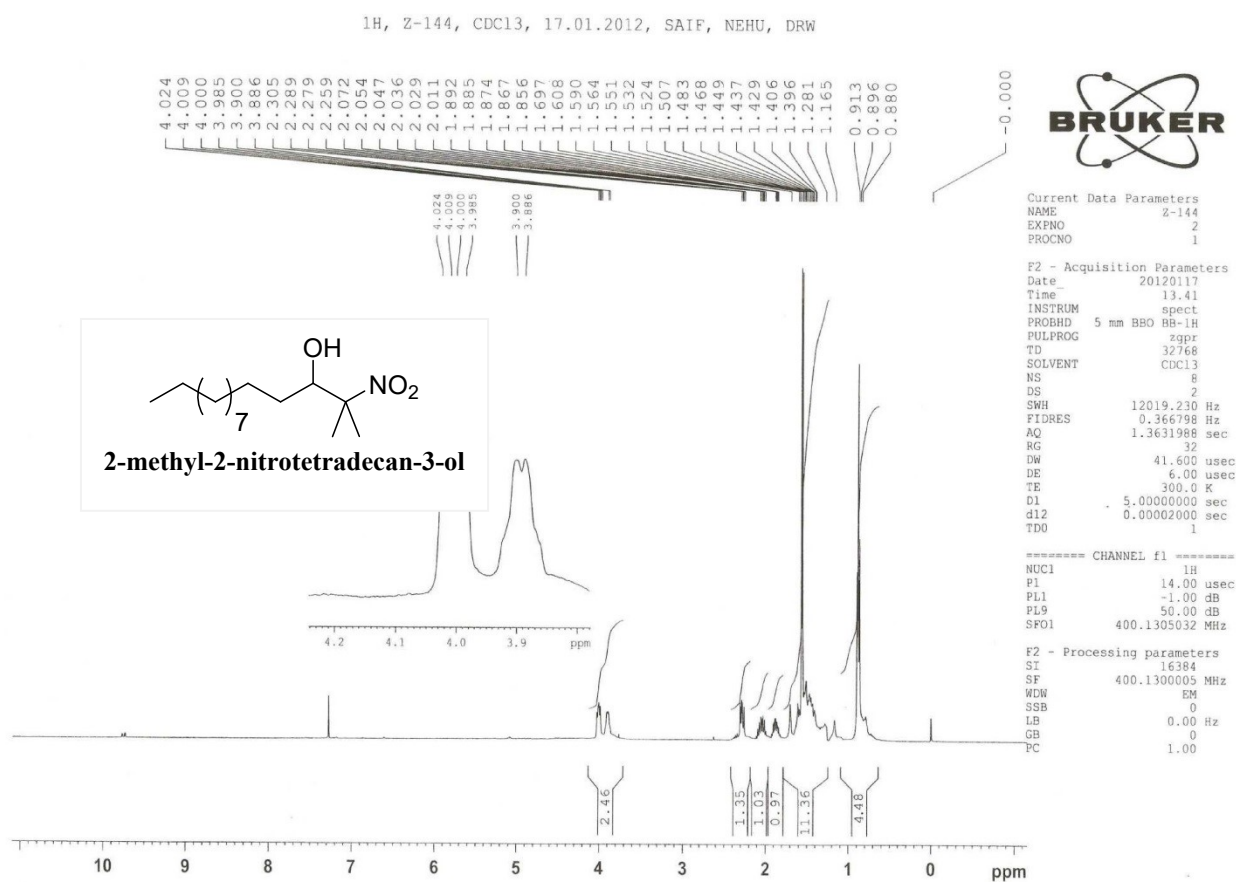


Fig: ¹H and ¹³C-NMR spectra of 2-methyl-2-nitrotetradecan-3-ol (Table 4, Entry 15)