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Hypervalent Iodine(III)-Mediated Cyclopropa(e)nation of Alkenes/Alkynes Under Mild Conditions

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Contents

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I. General information:

All reagents were purchased from commercial sources and used without further treatment, unless otherwise indicated. The products were purified by column chromatography over silica gel. ^{1}H NMR and ^{13}C NMR spectra were recorded at 25 ºC on a Varian 500 MHz and 125 MHz, respectively, with TMS as the internal standard. Melting points were obtained with a micro melting point XT4A Beijing Keyi electrooptic apparatus and are uncorrected. High resolution mass spectra were recorded on Bruck microtof. All reactions were monitored by TLC with Taizhou GF254 silica gel coated plates. Flash column chromatography was carried out using 200-300 mesh silica gel at increased pressure.

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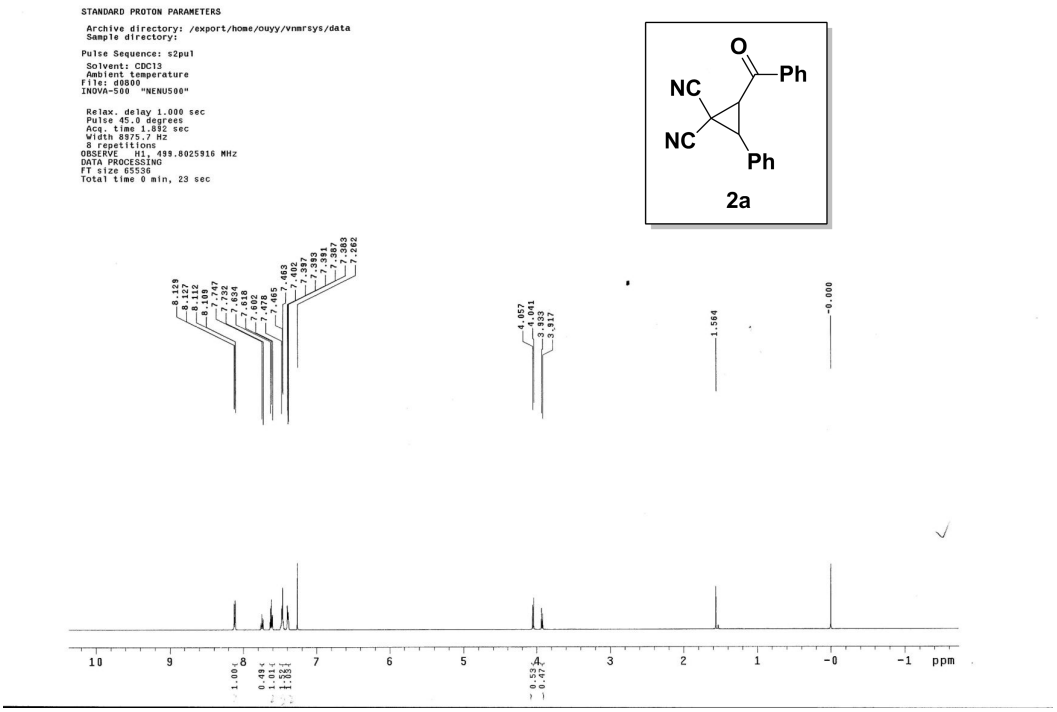
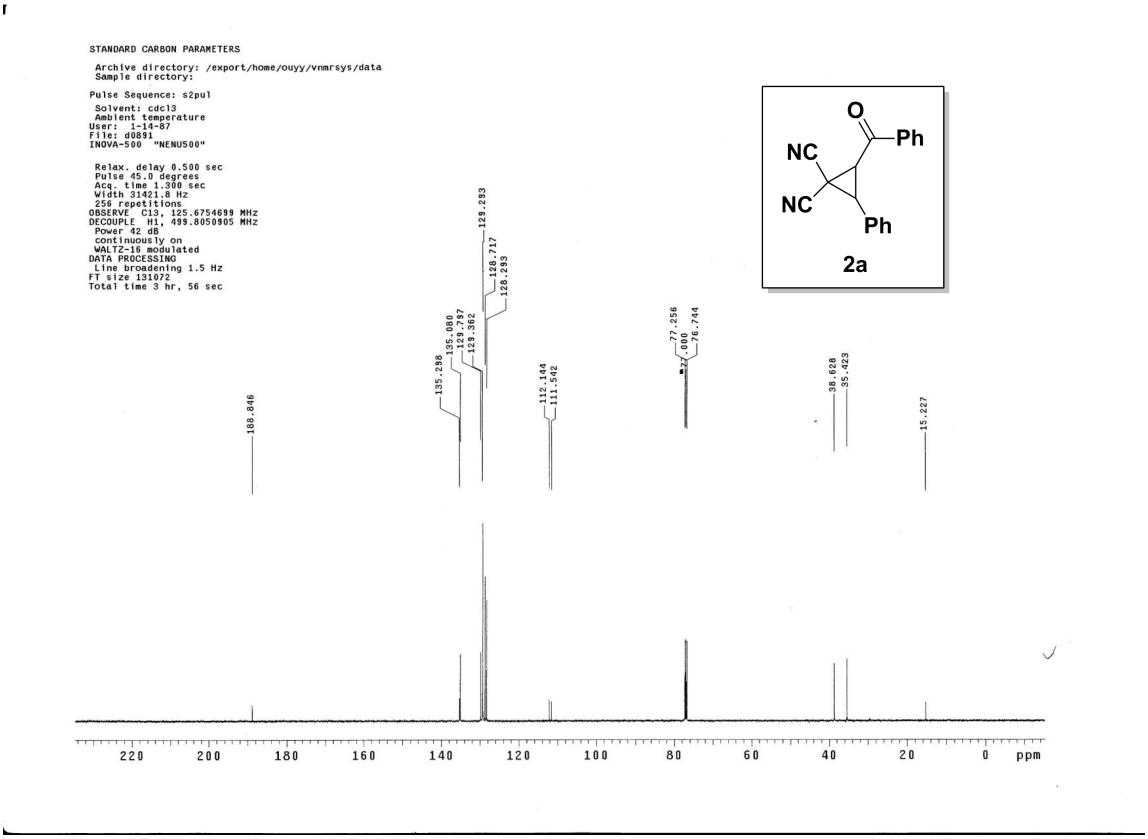
II. ^{1}H and ^{13}C NMR spectra of compounds 2, 3, 5,6 and 7





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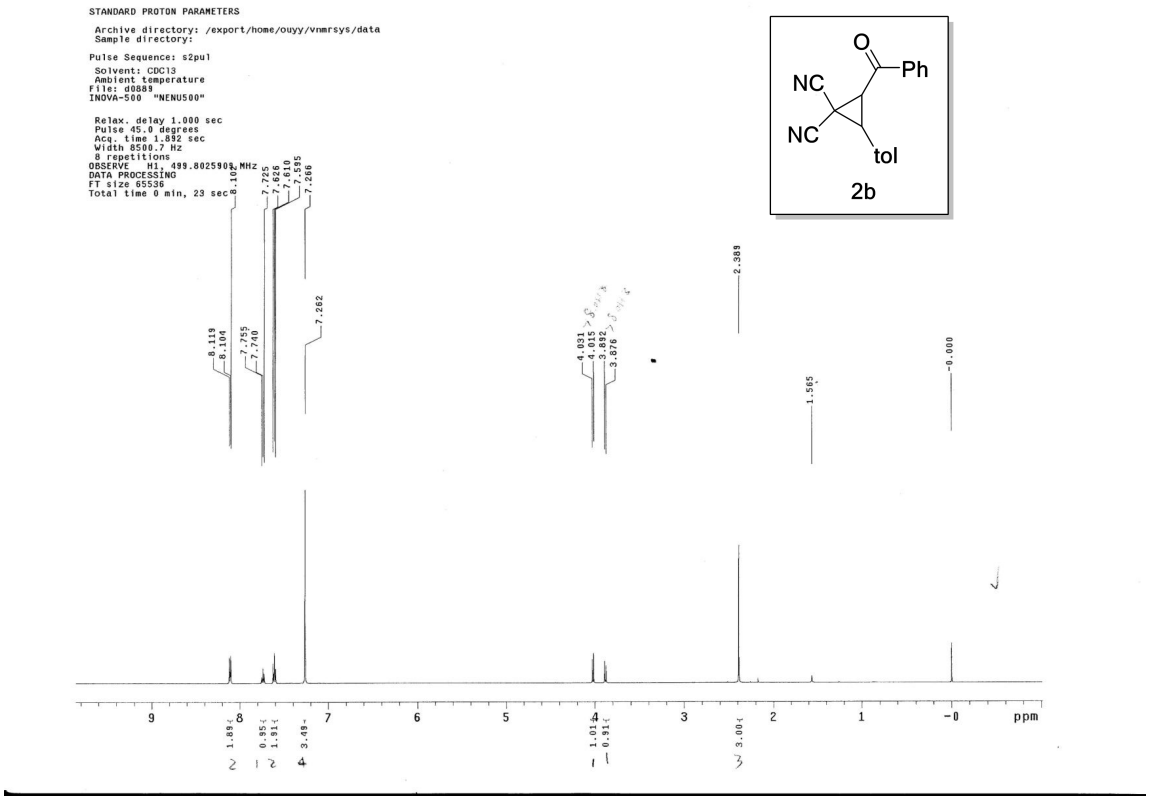

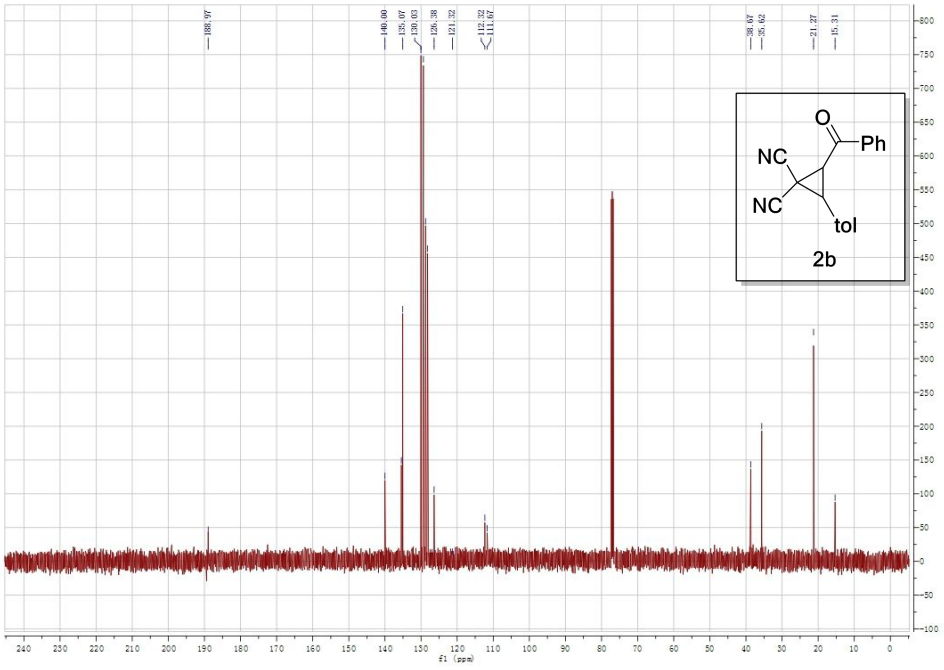

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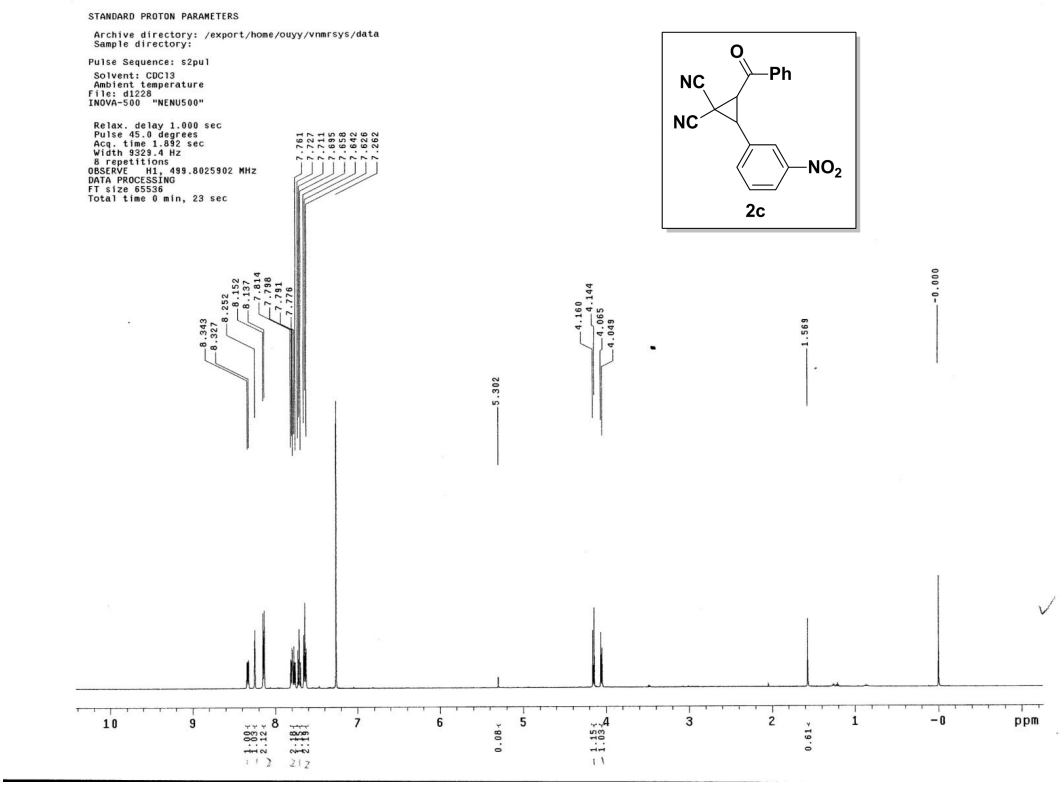

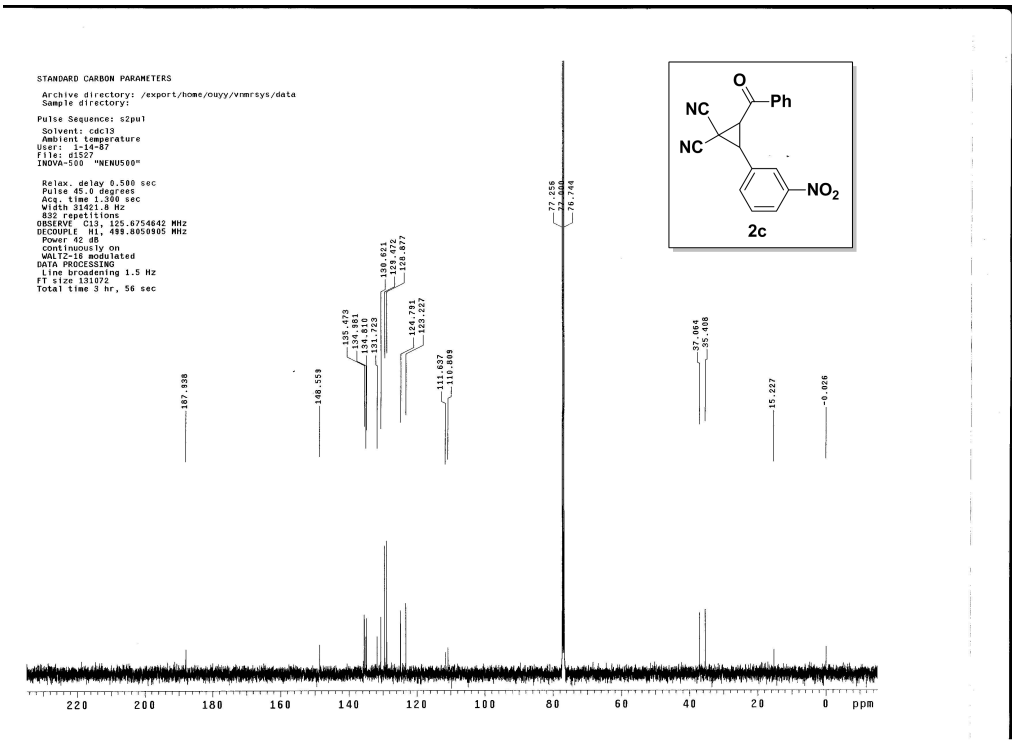

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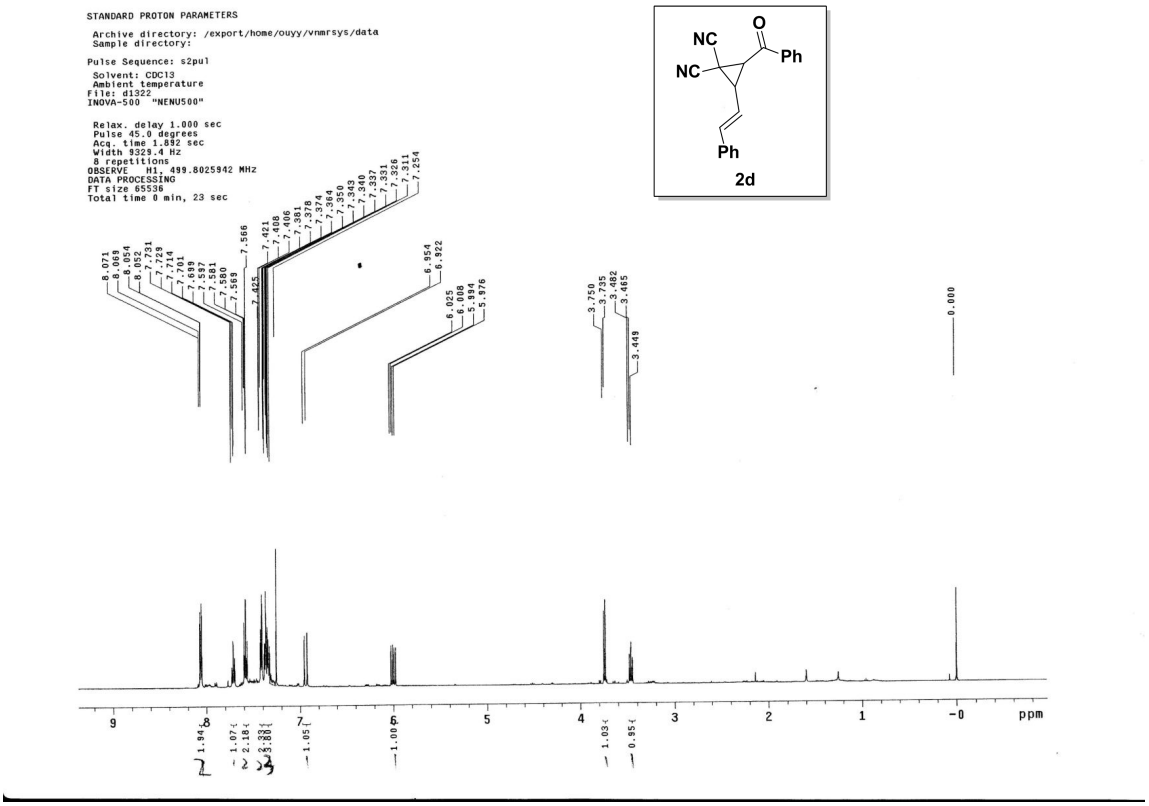

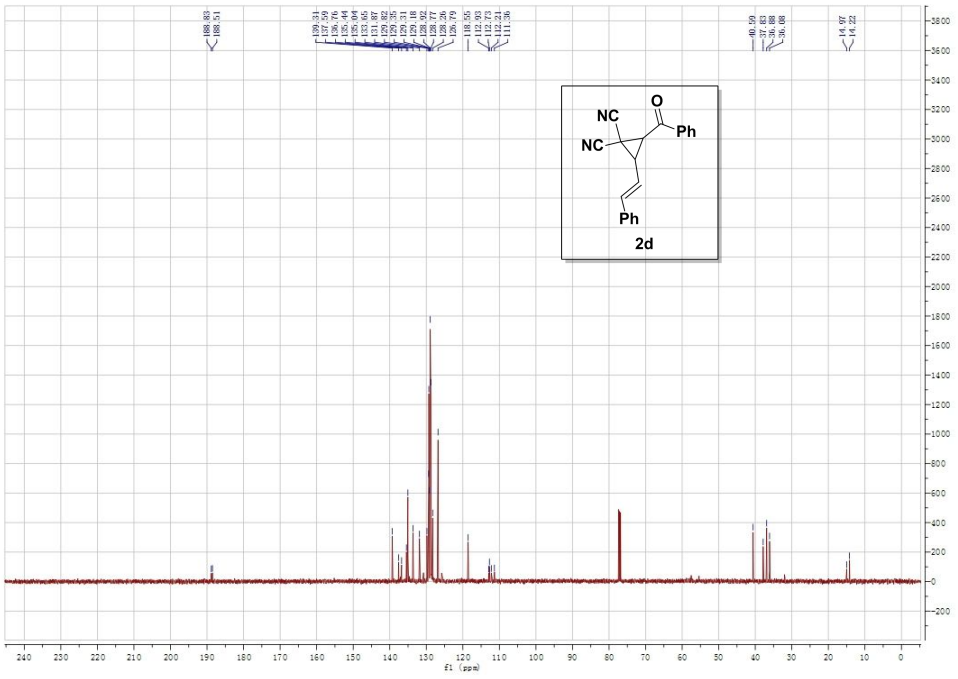

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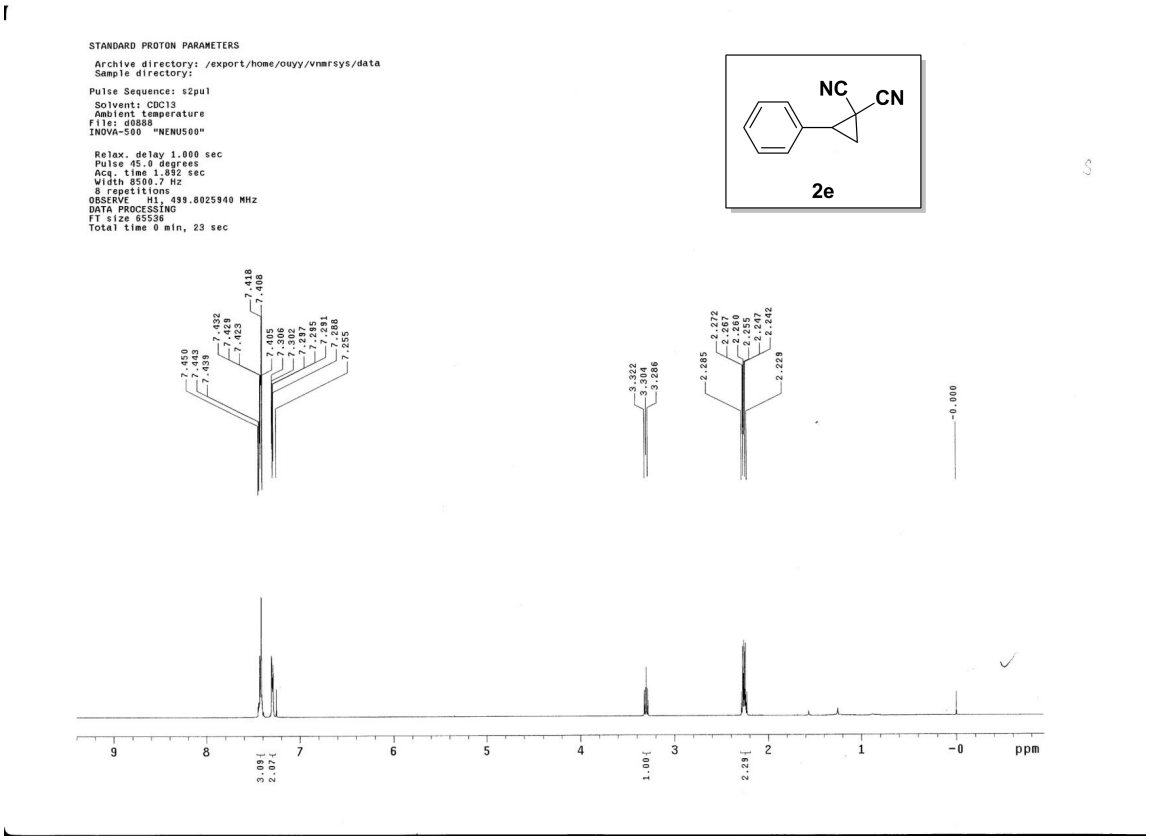

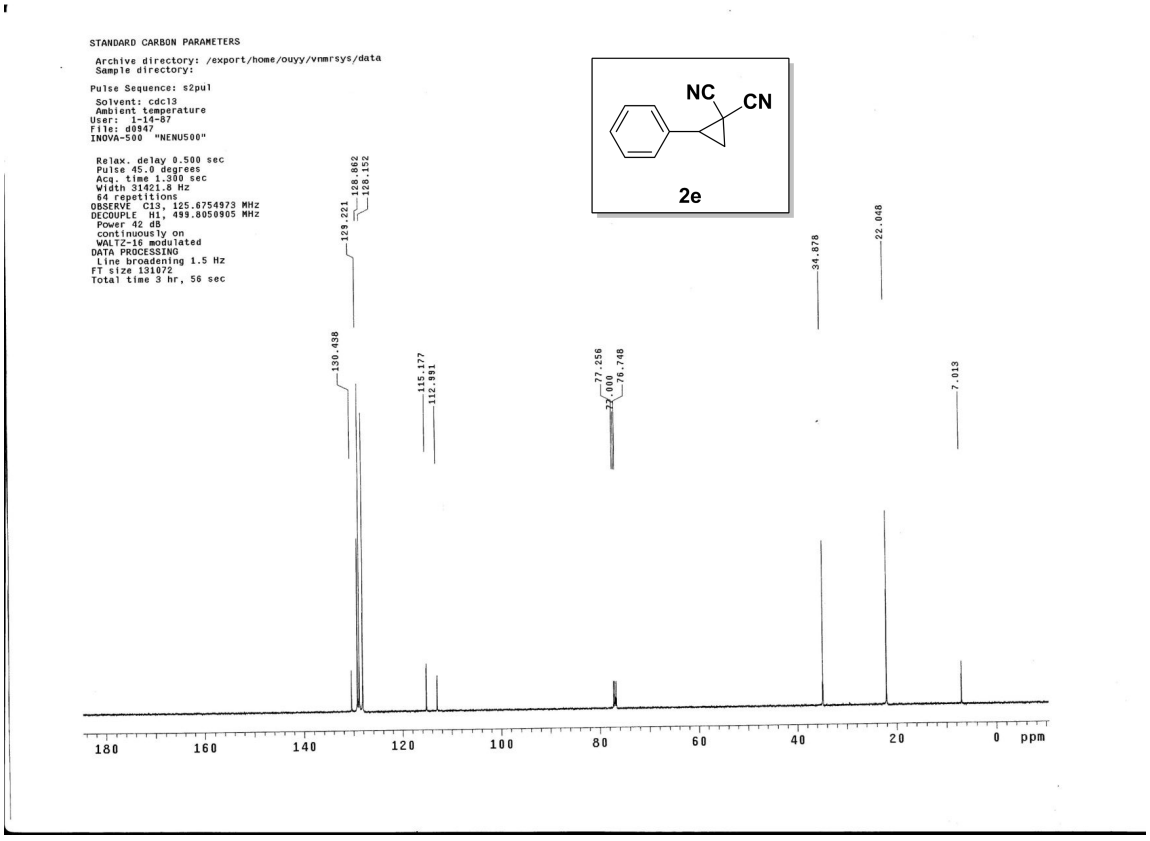

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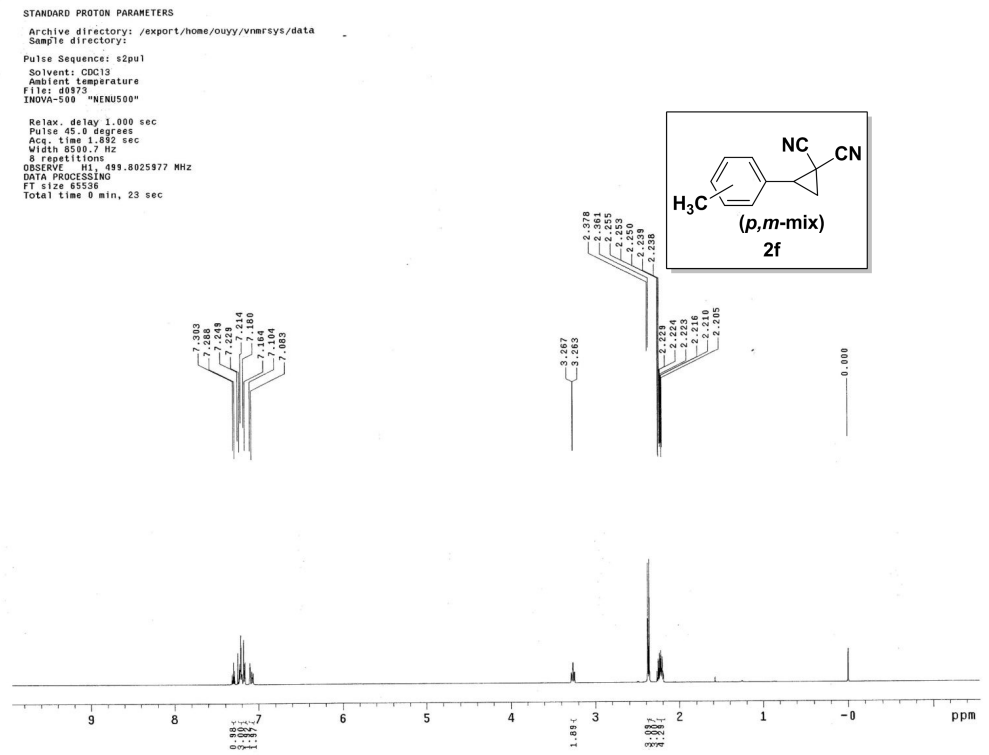

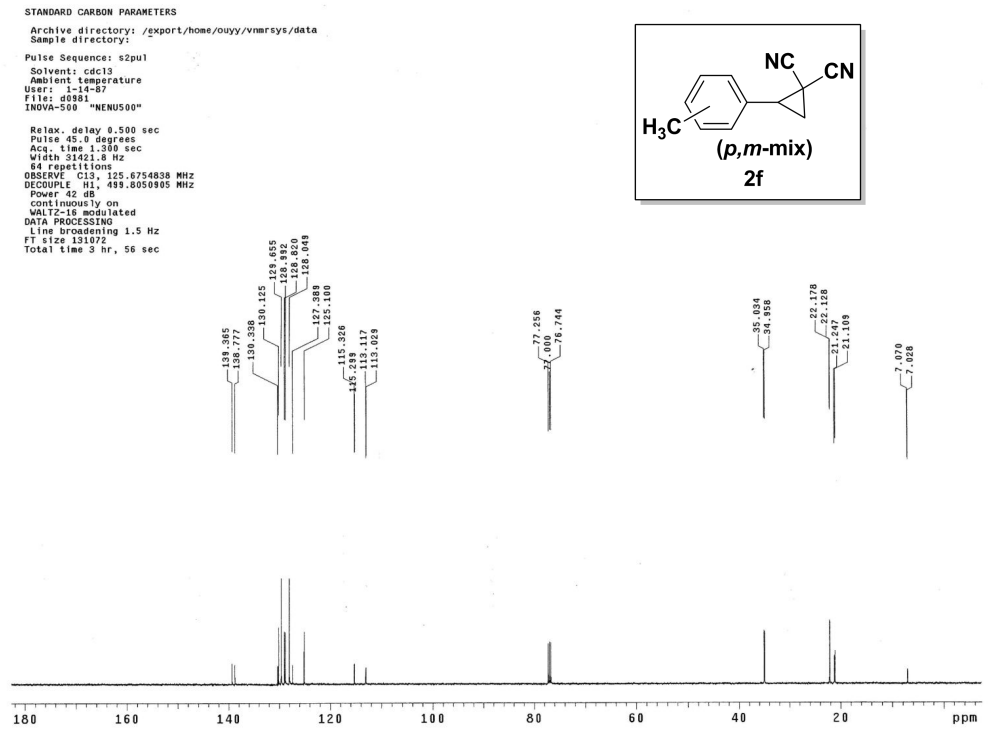

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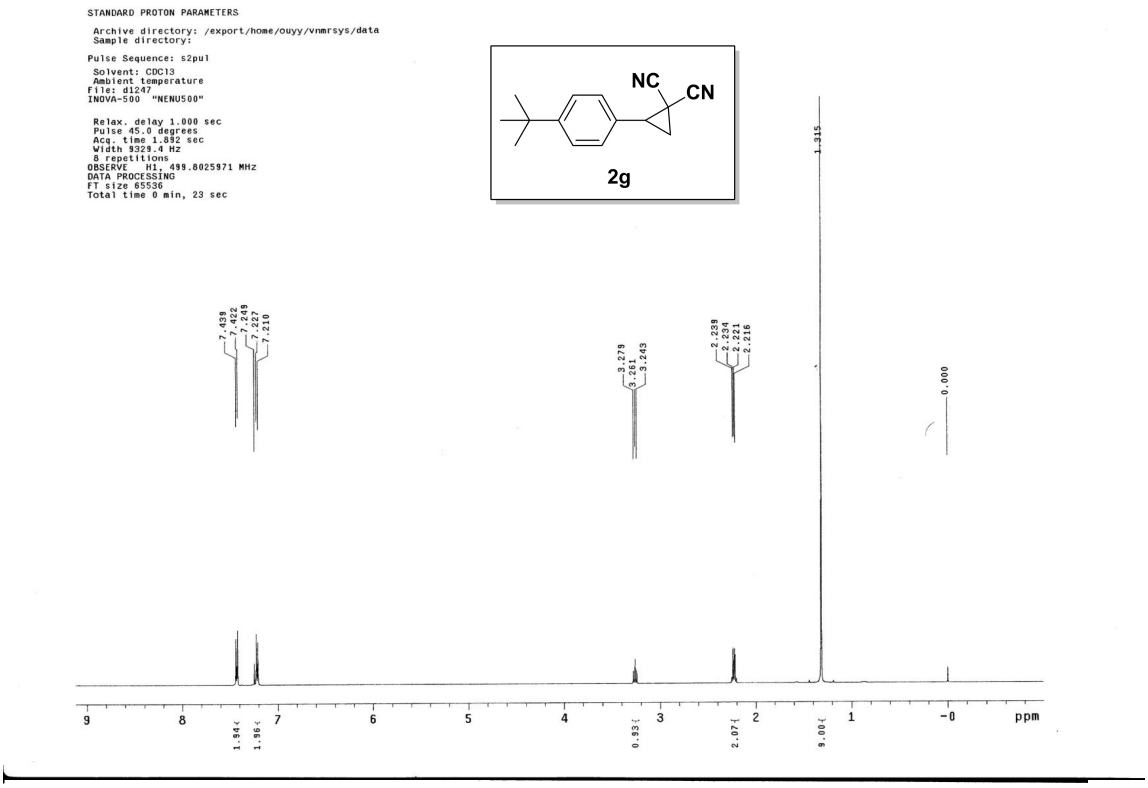

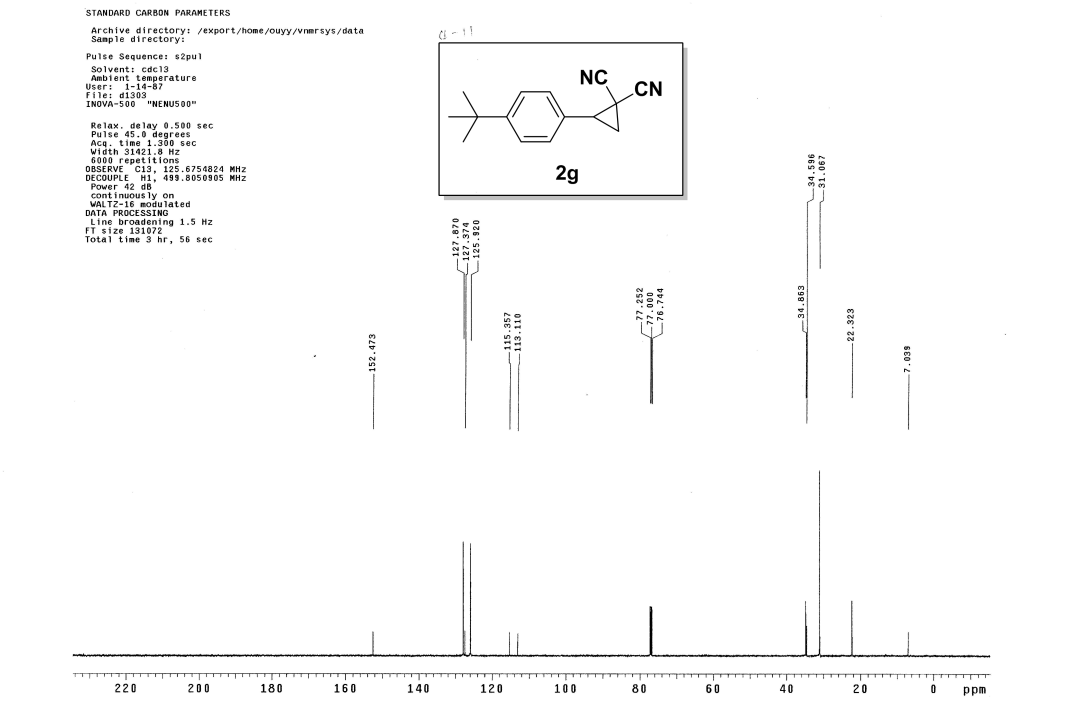

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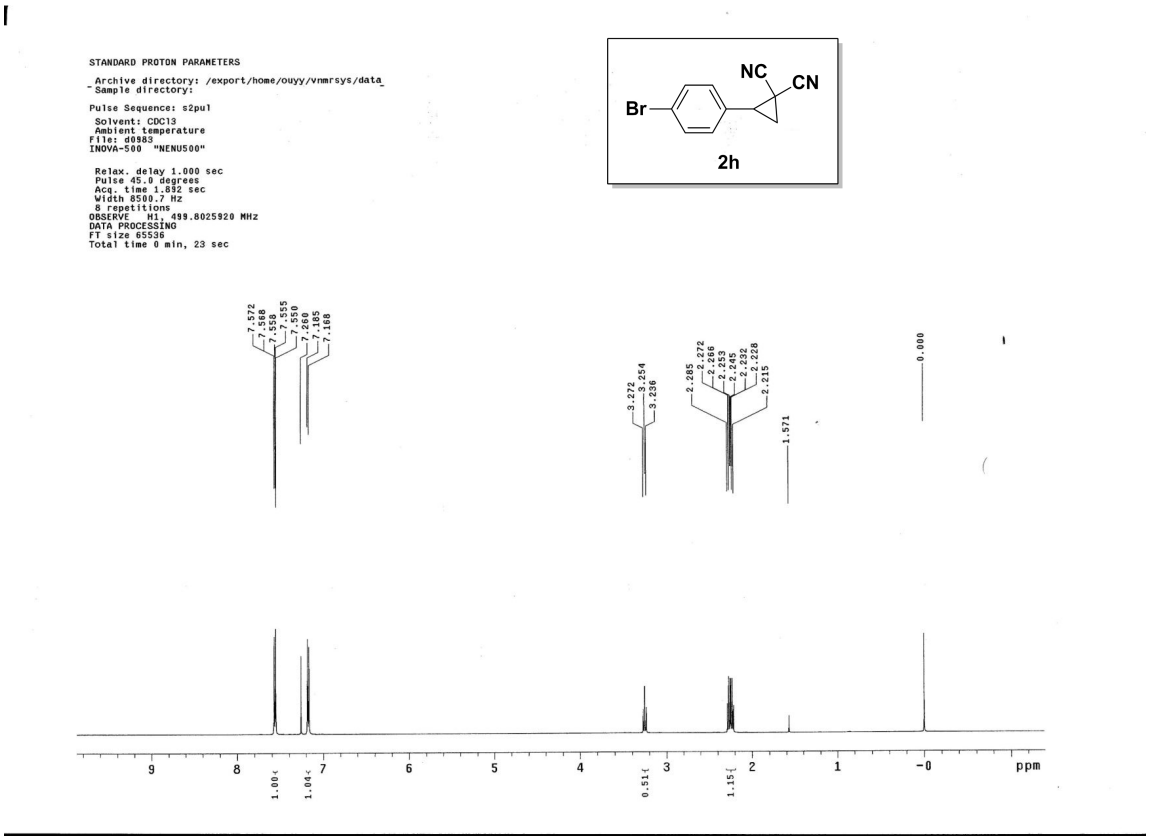

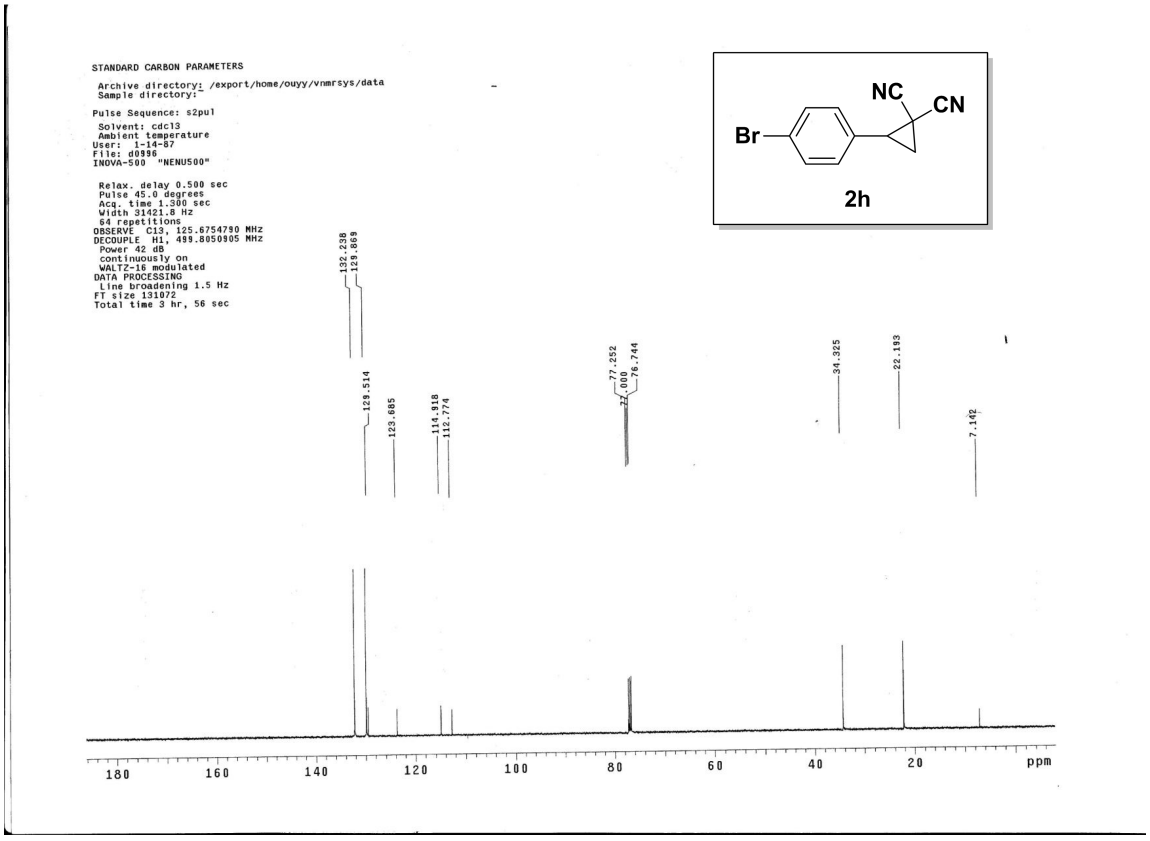

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 Ambient temperature
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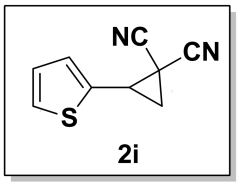

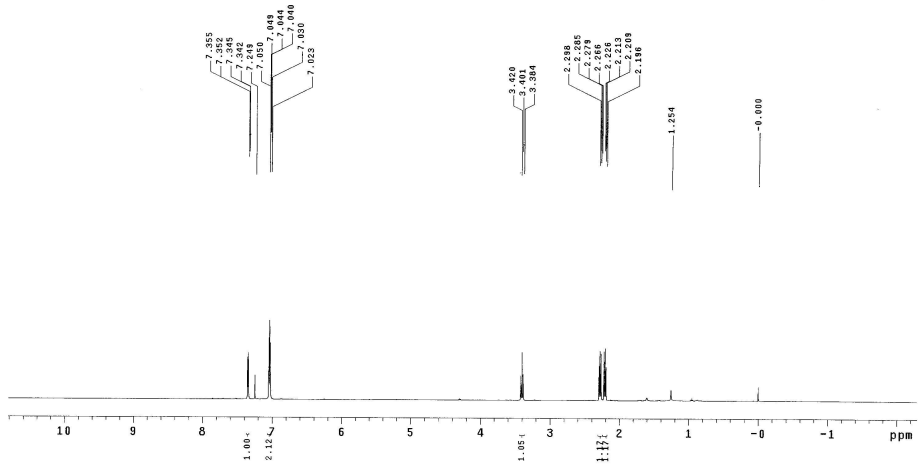


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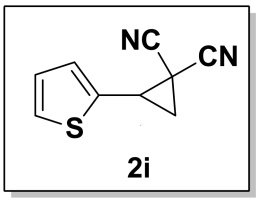

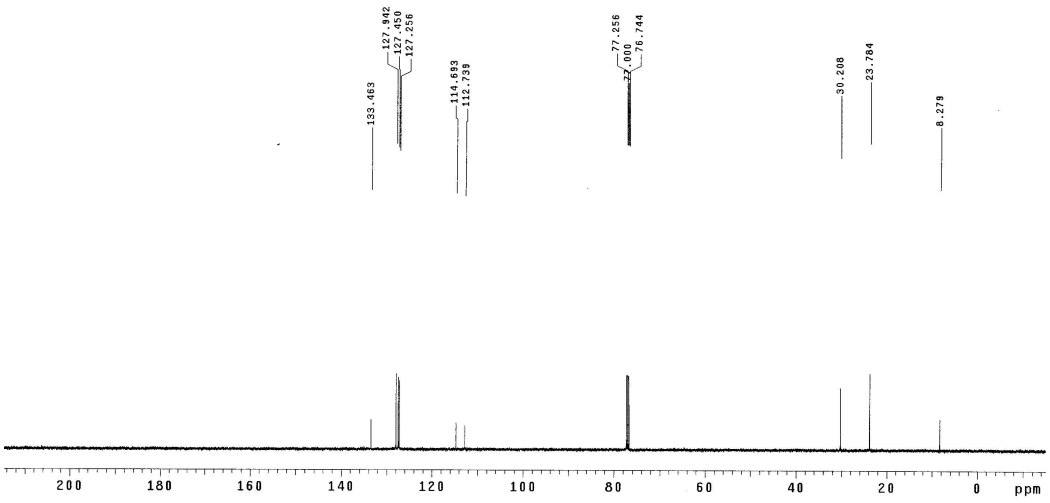

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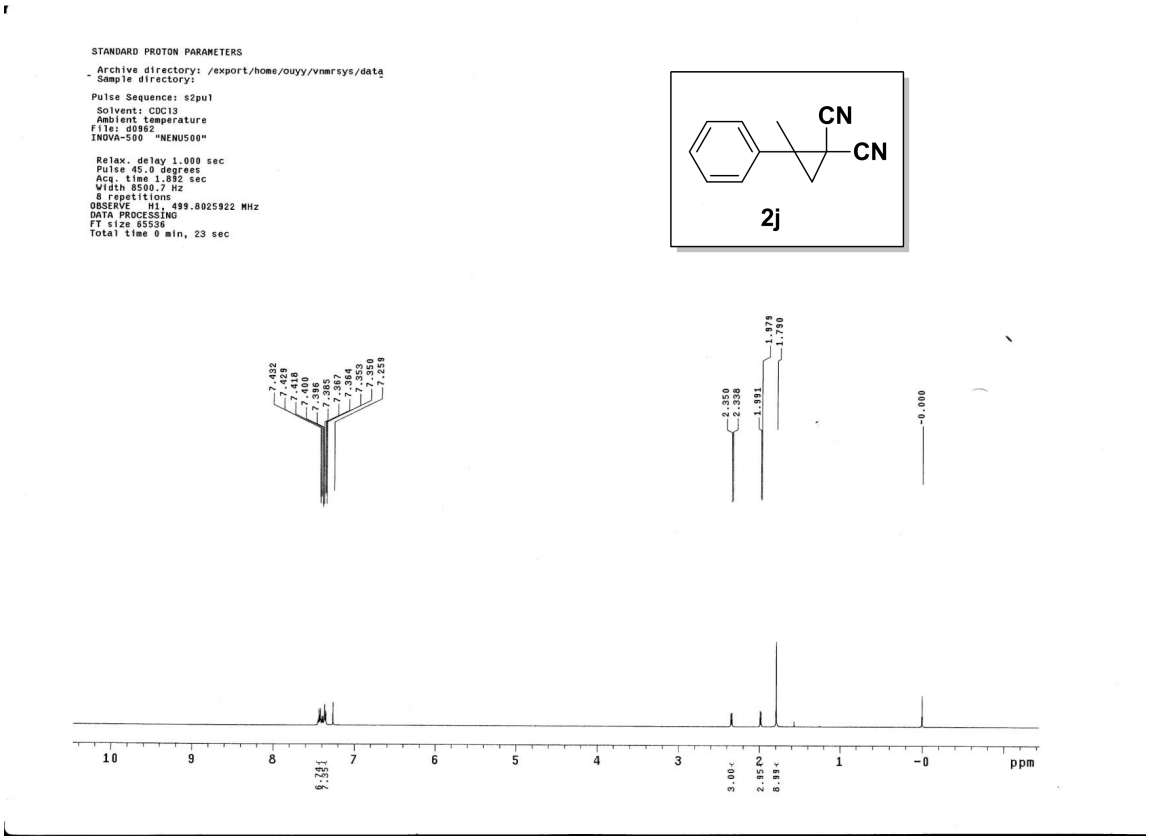

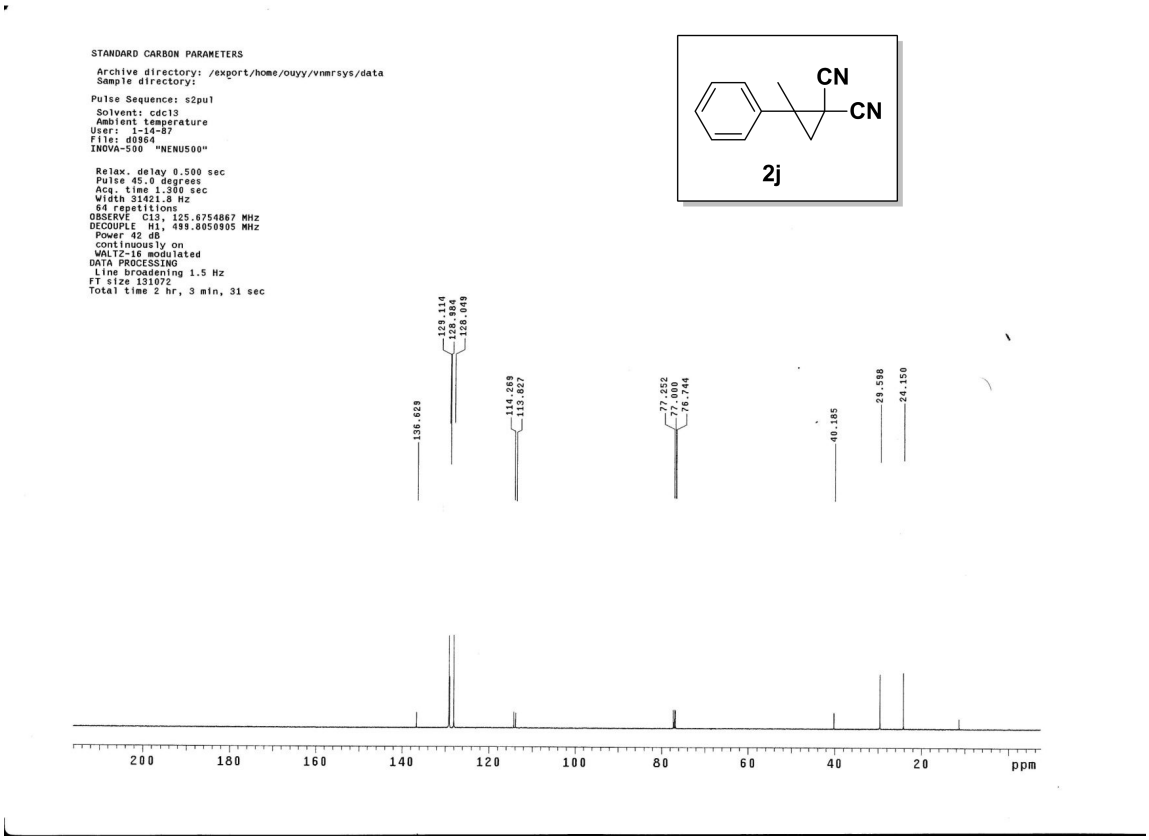

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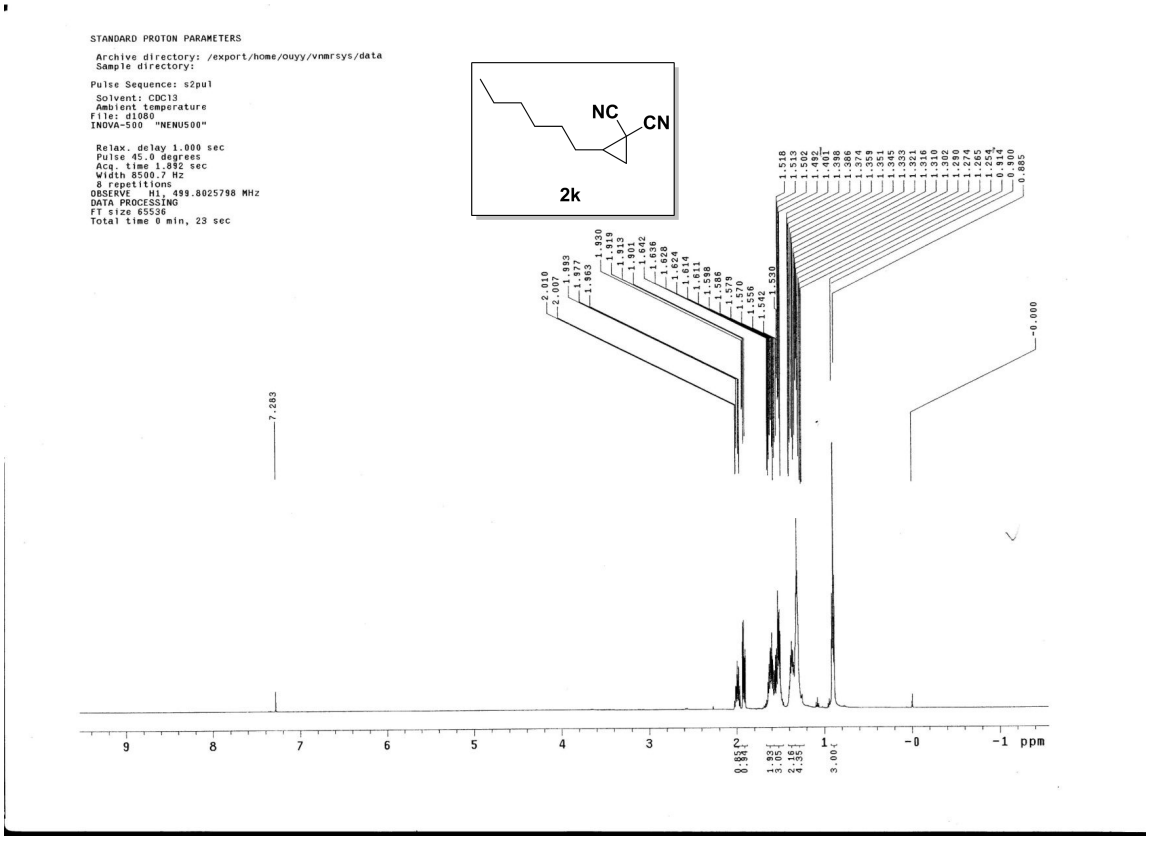

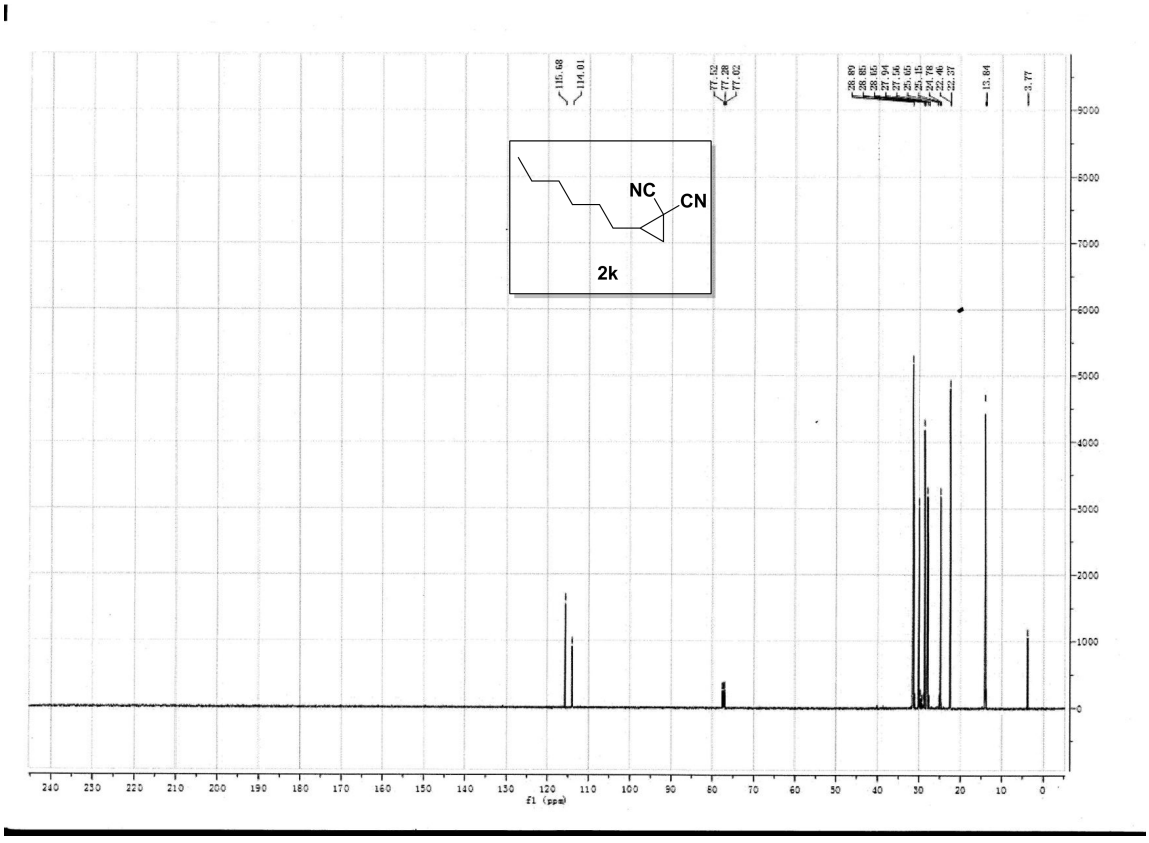

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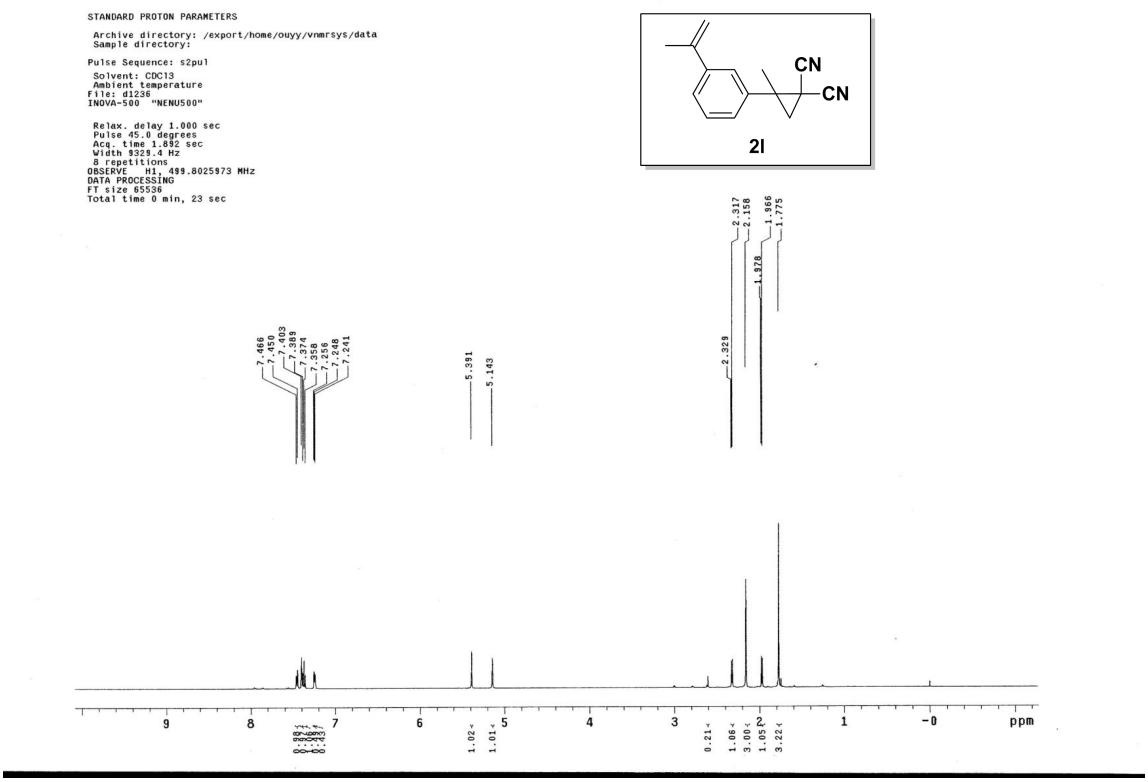

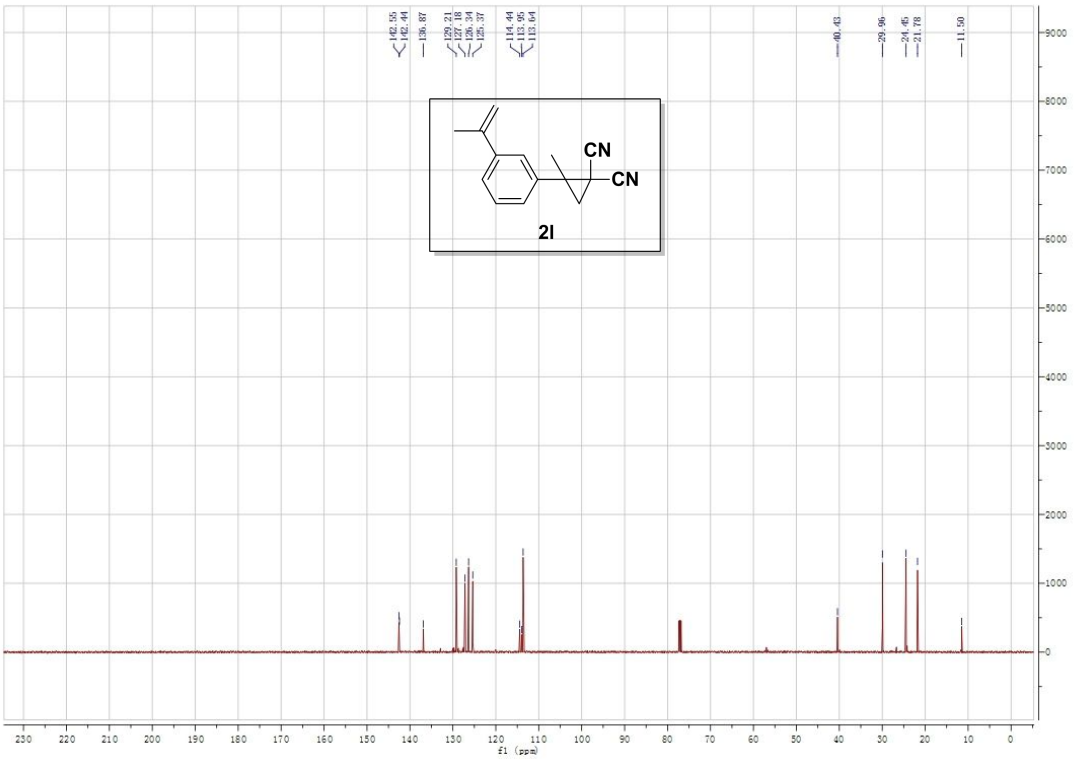

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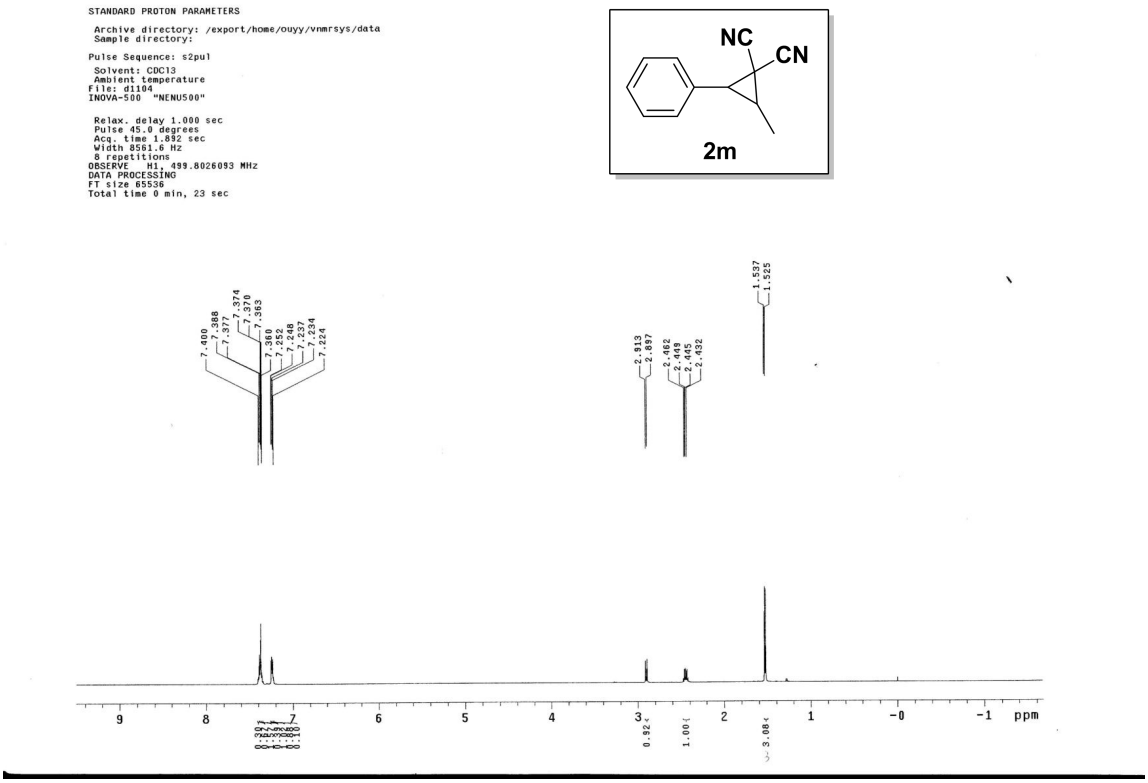

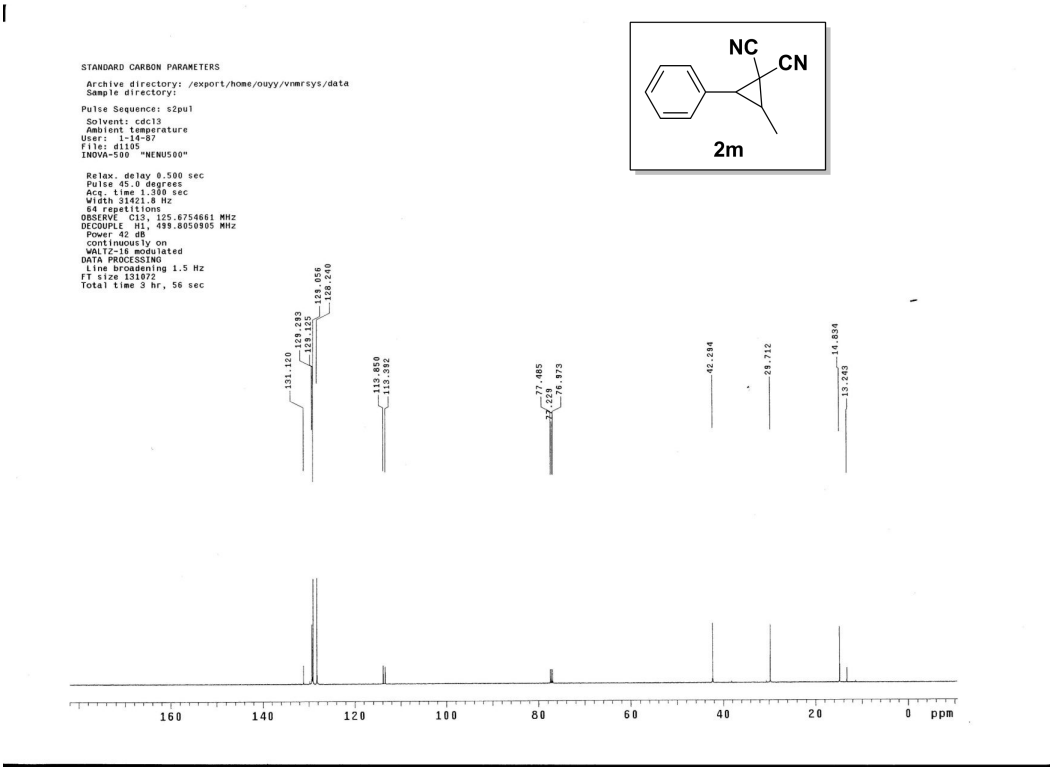

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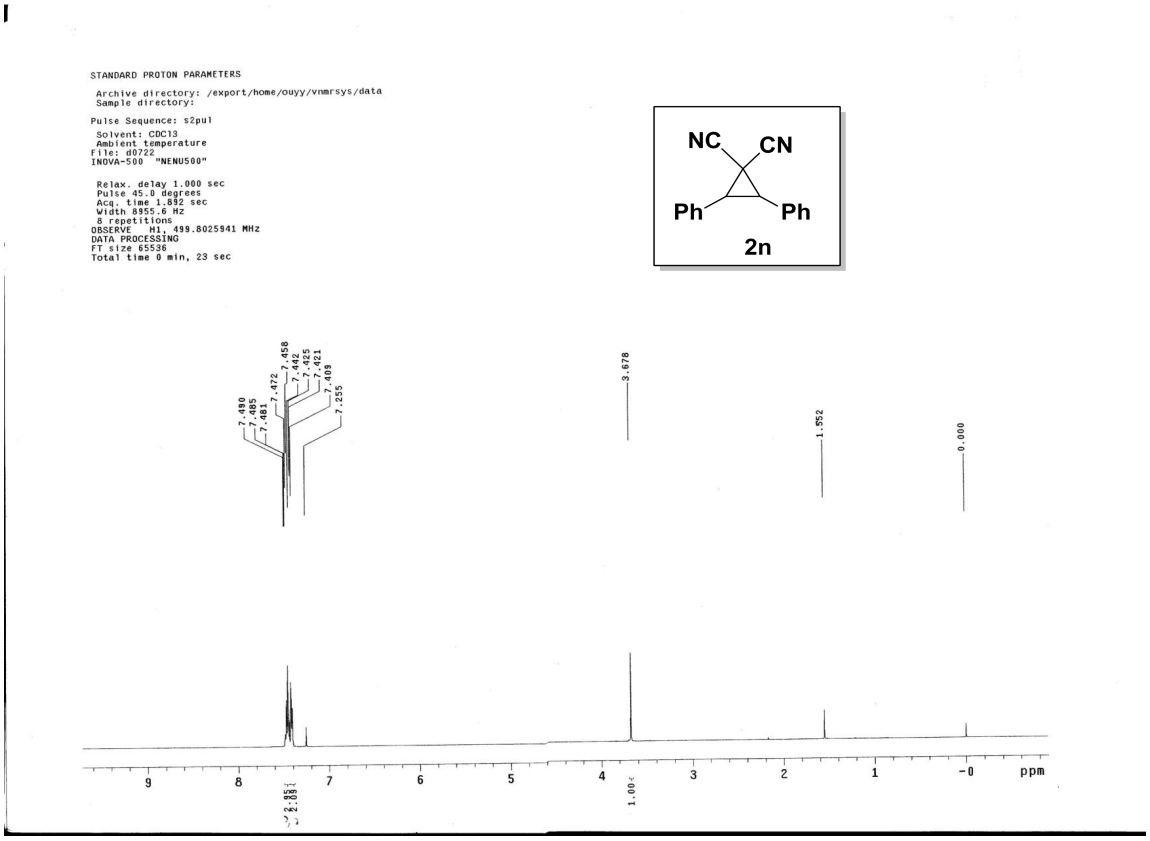

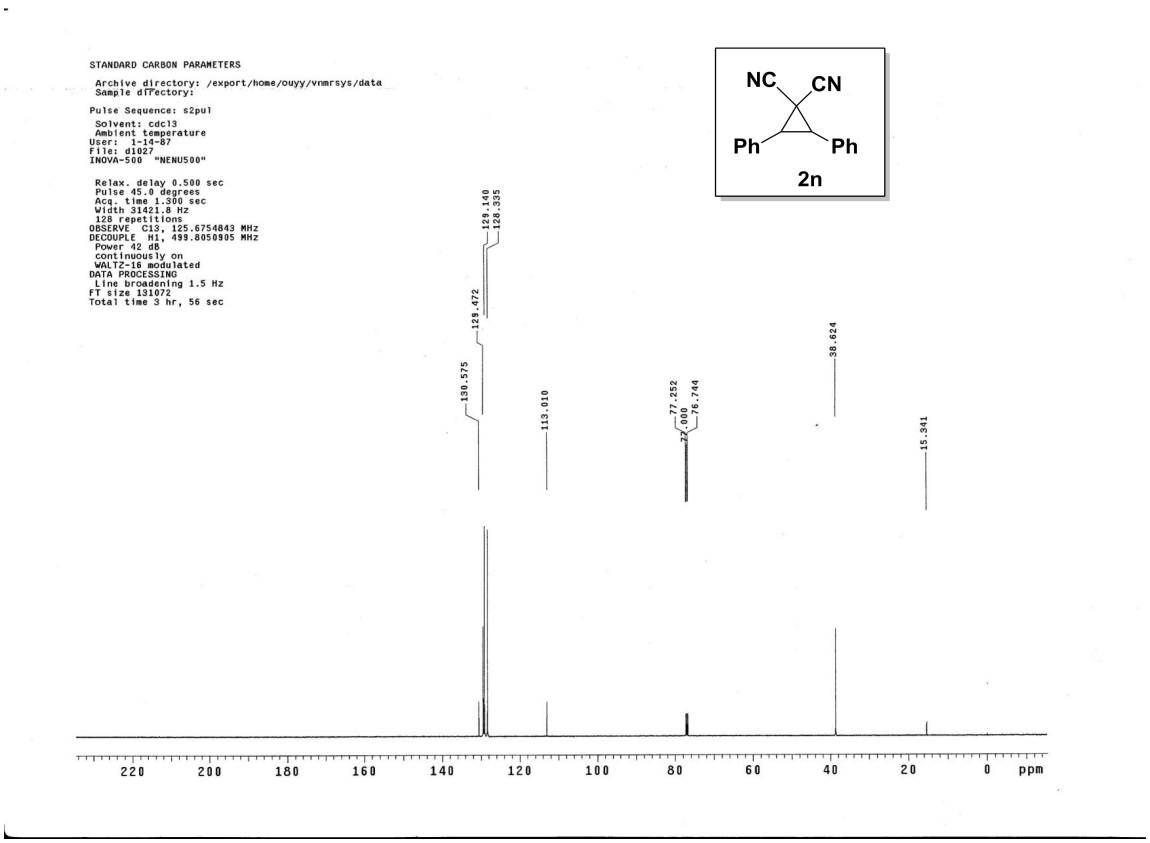

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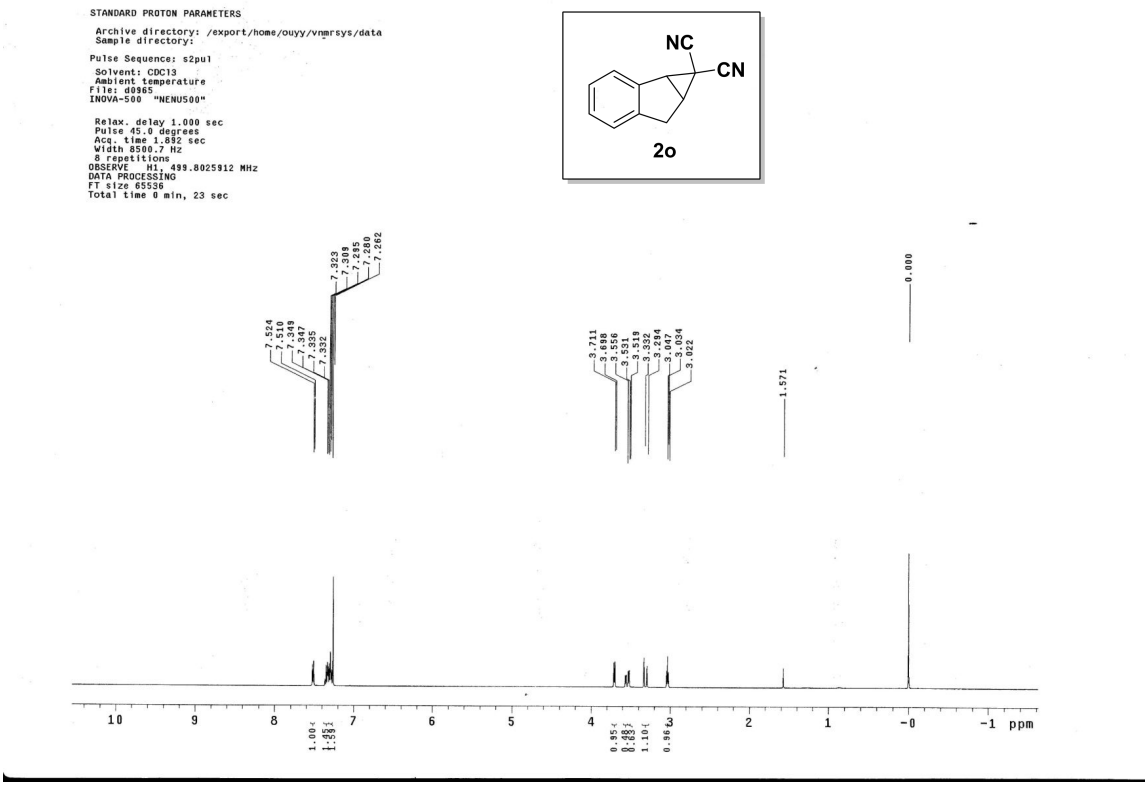

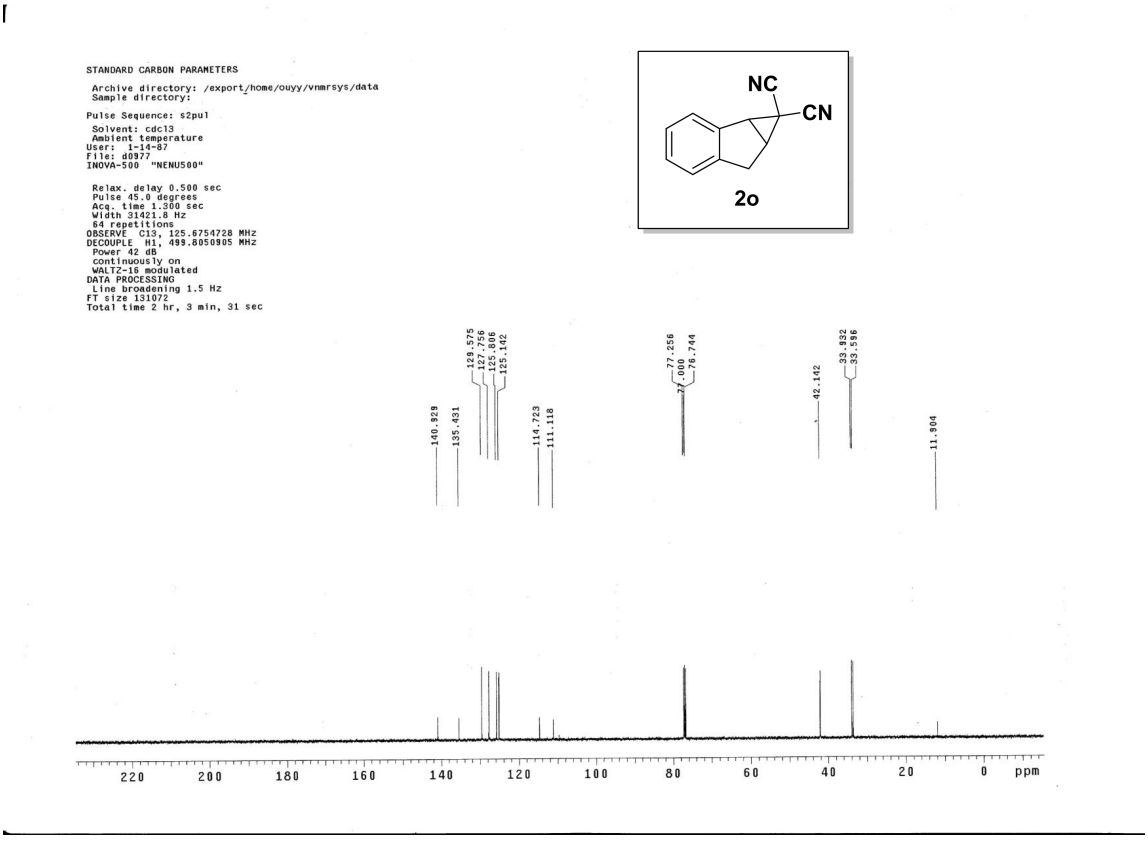

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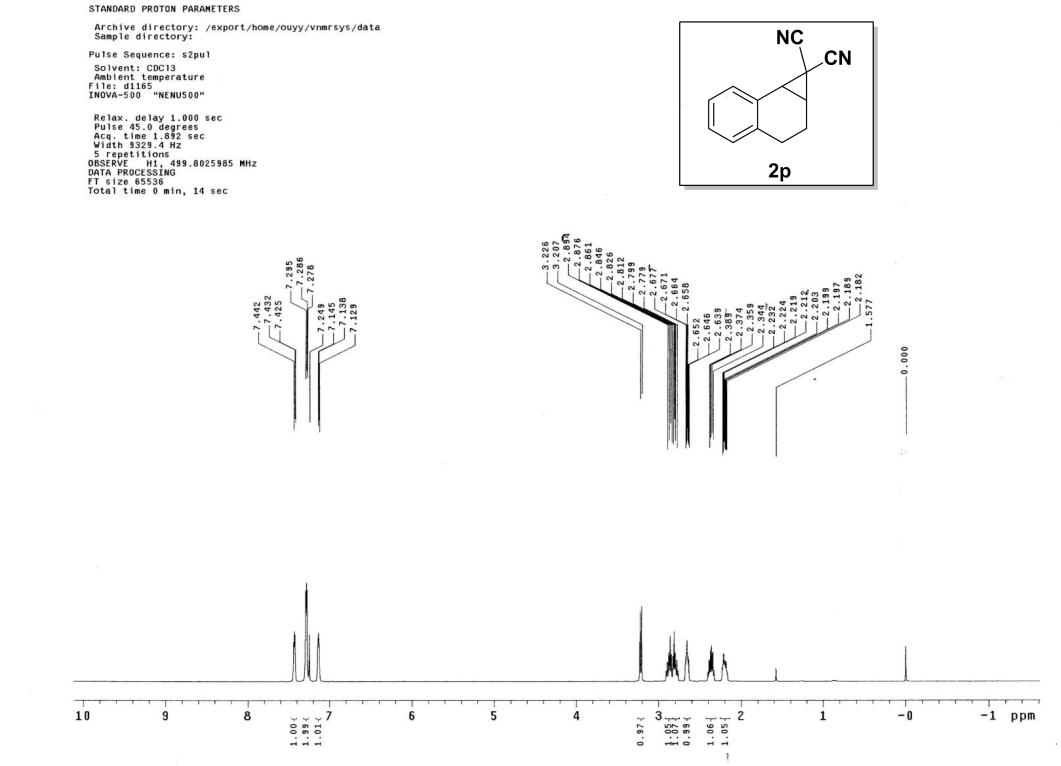

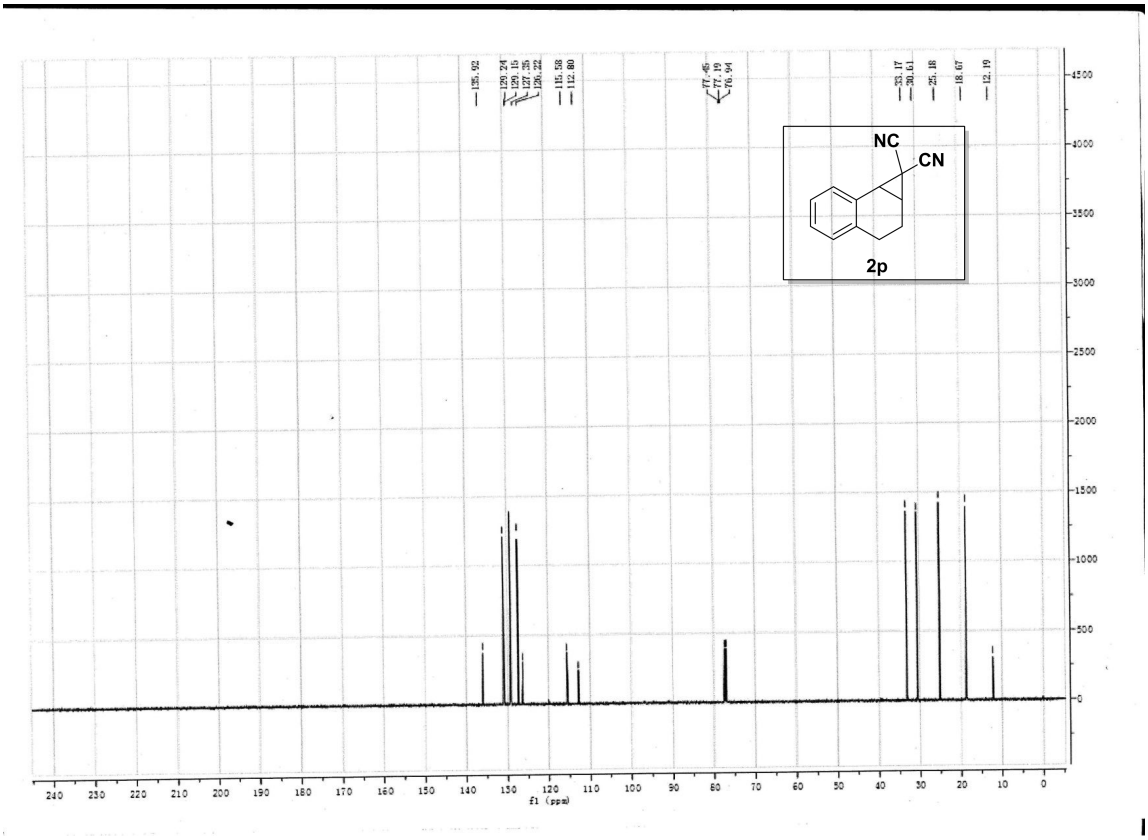

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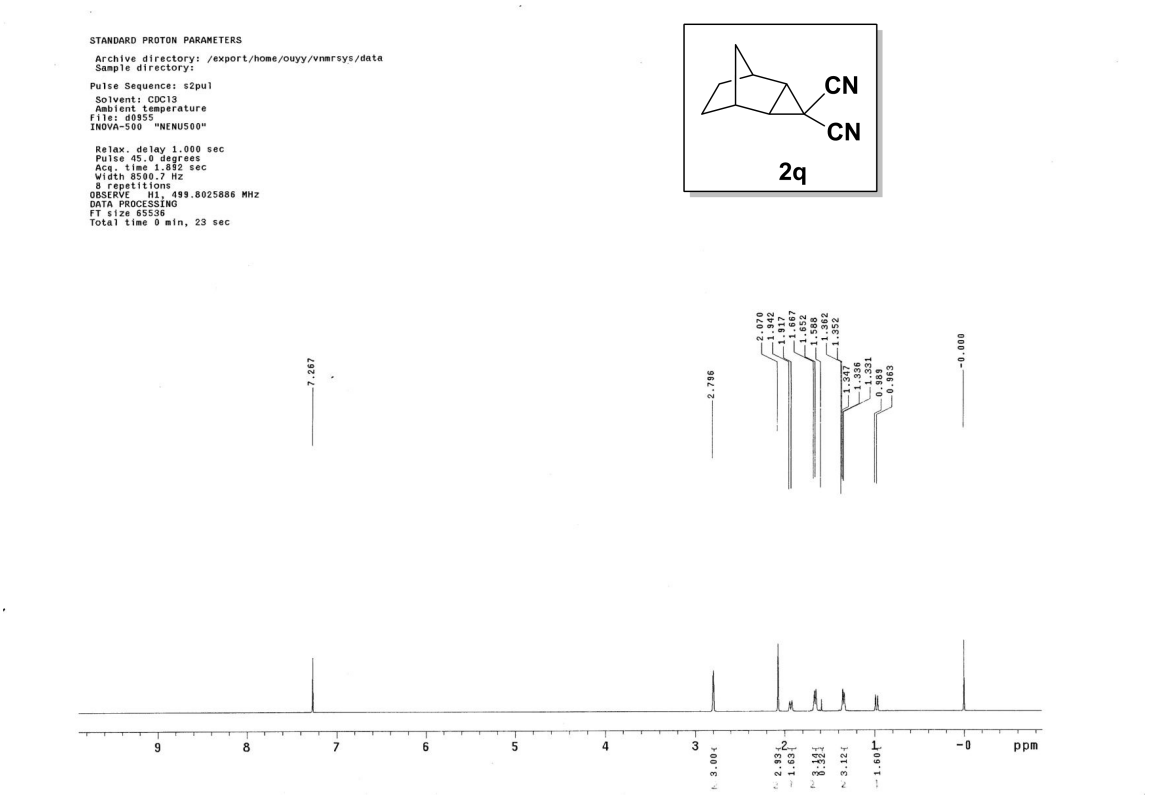

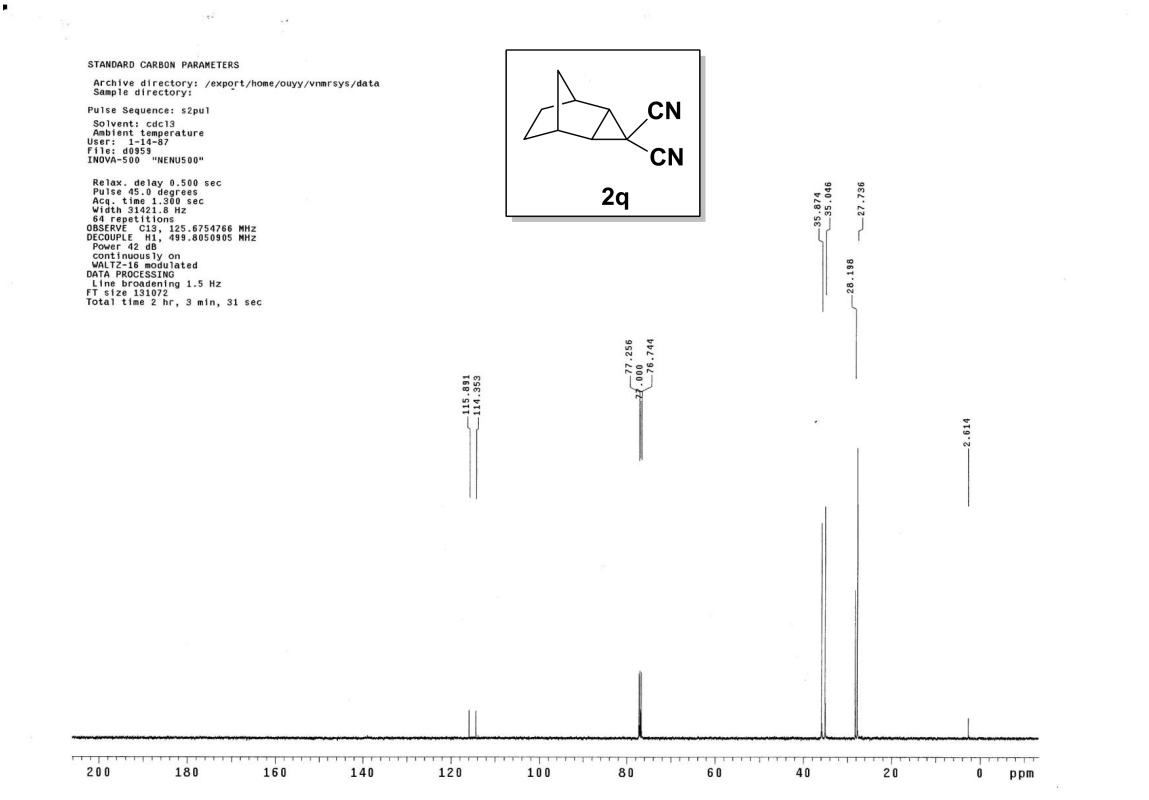

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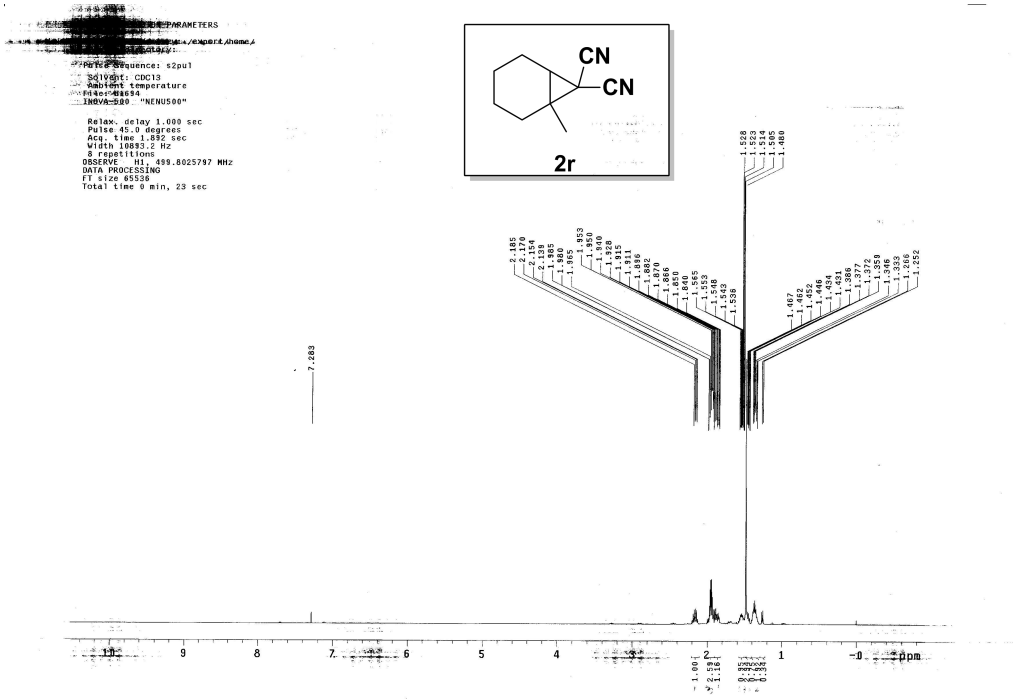

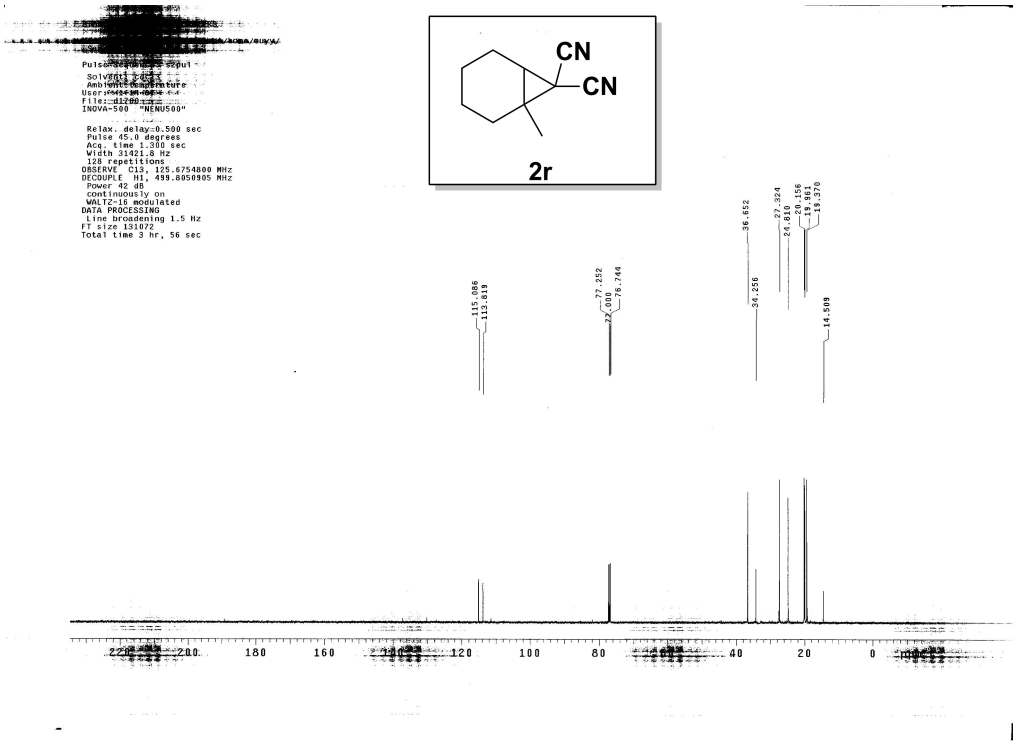

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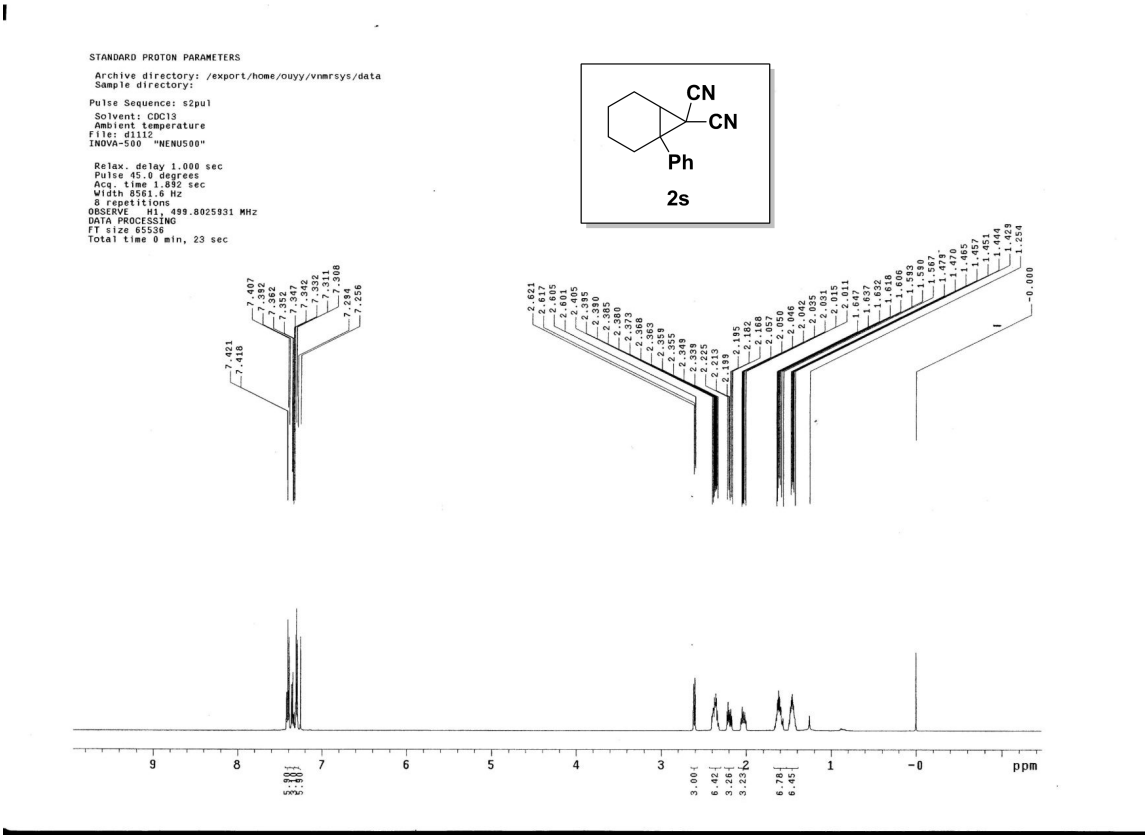

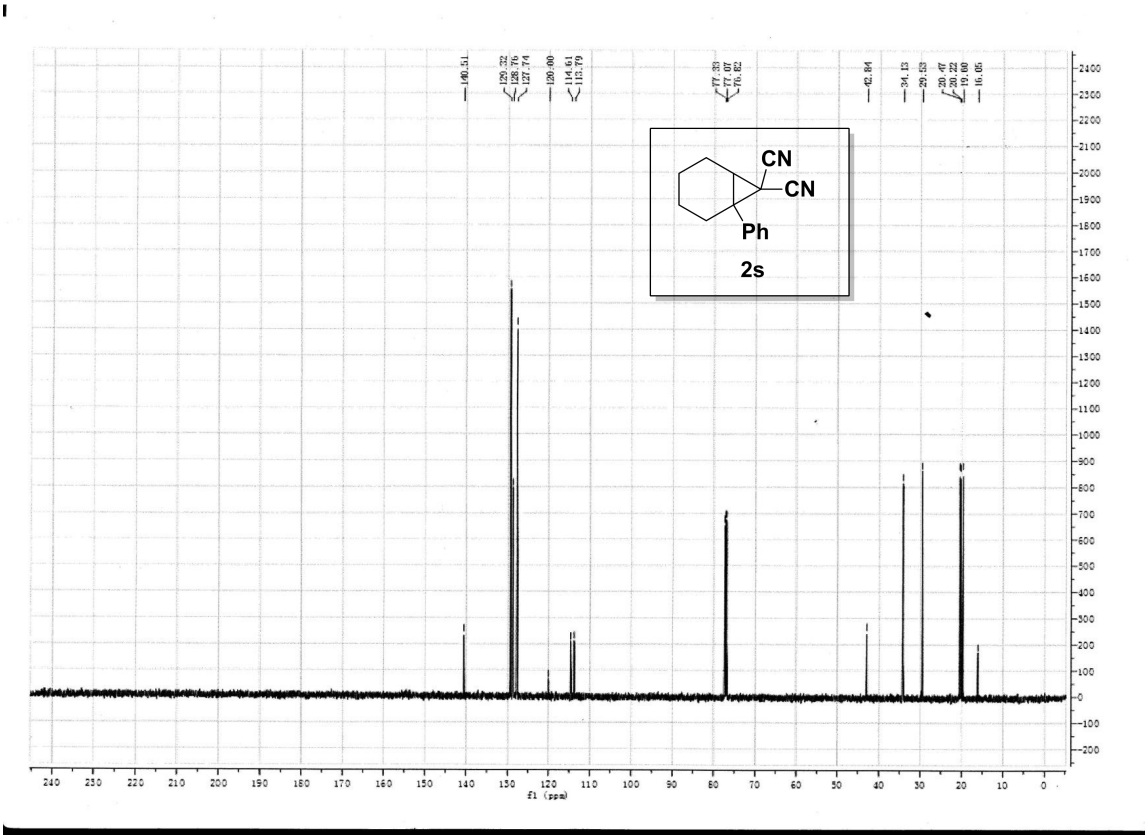

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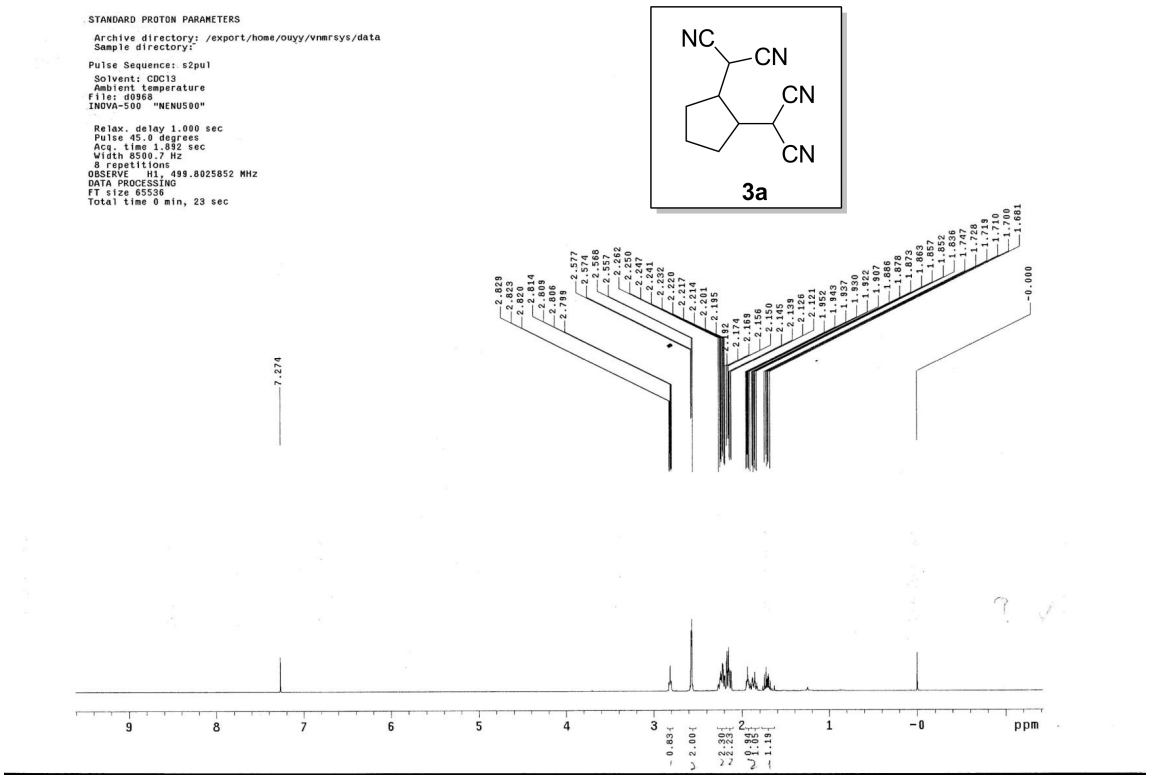

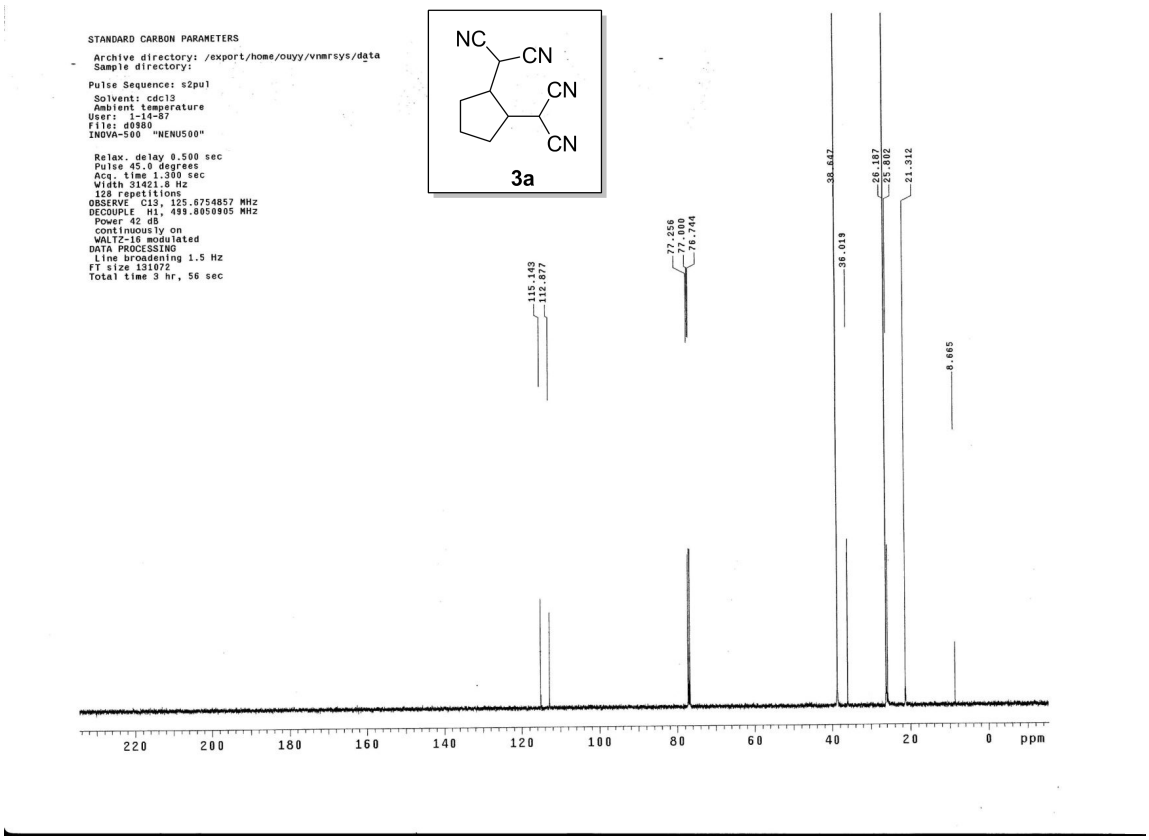

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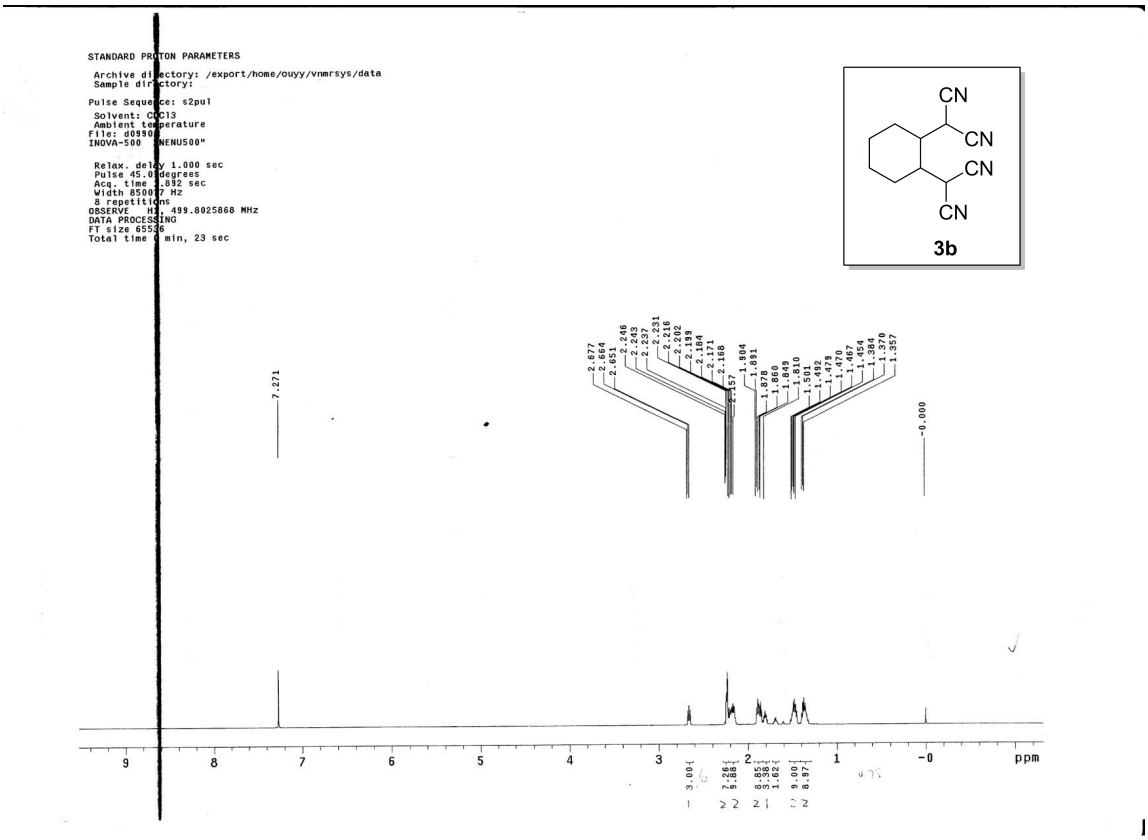

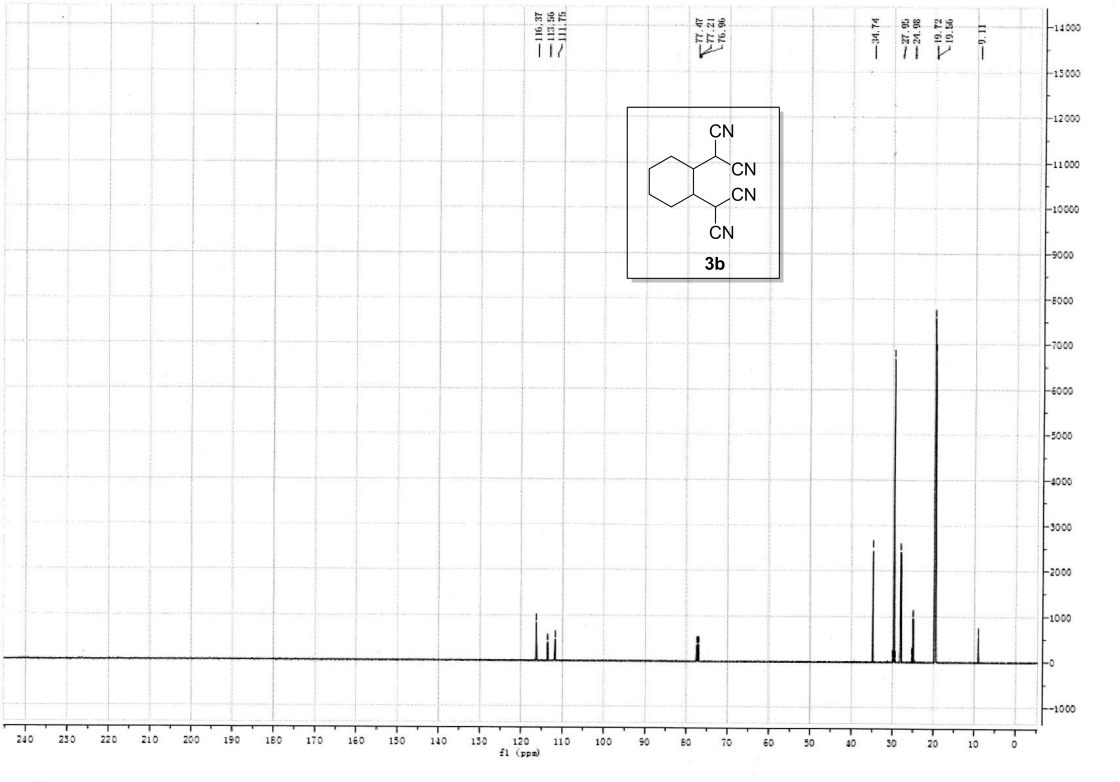

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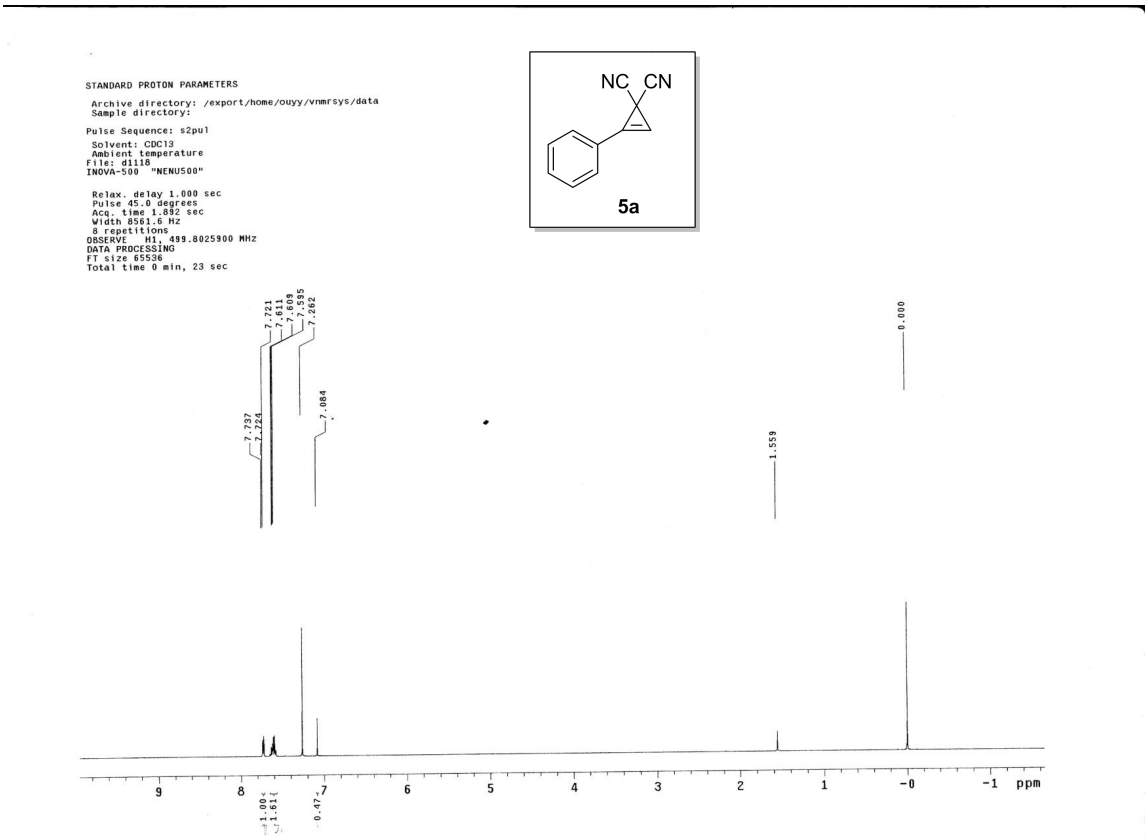

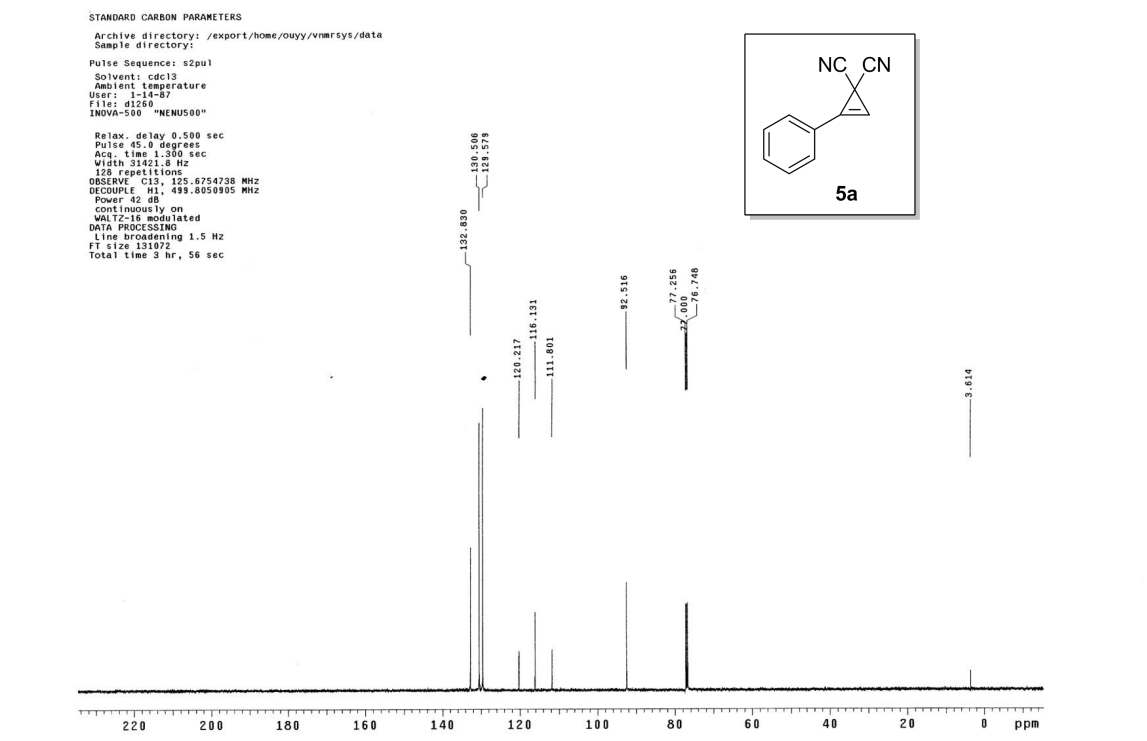

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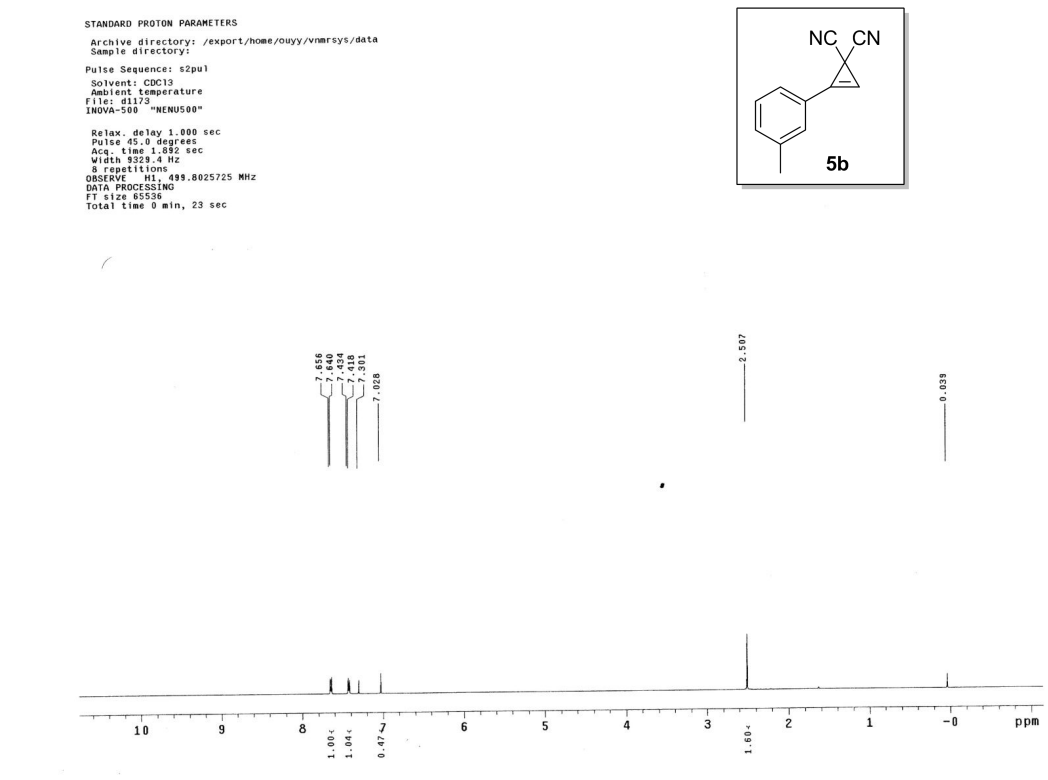

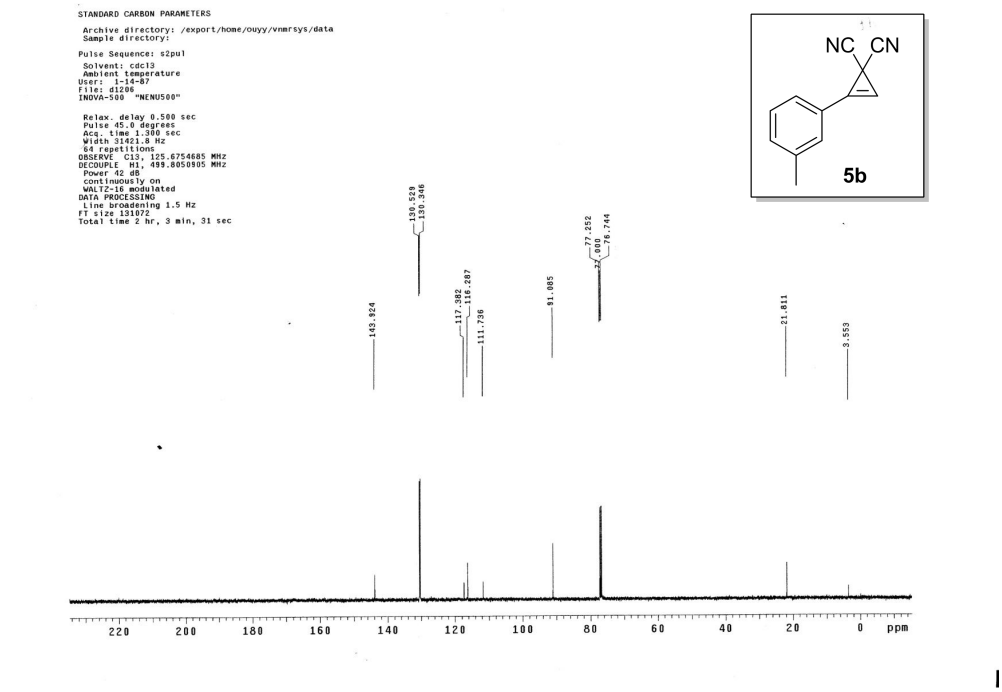

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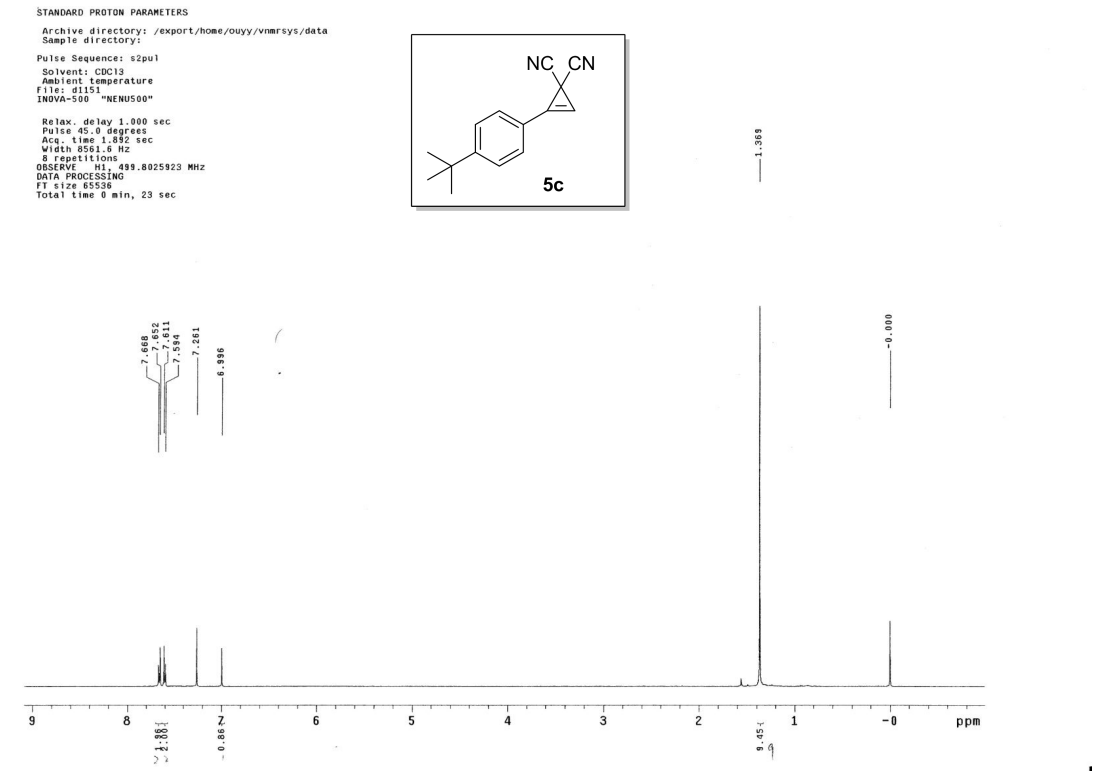

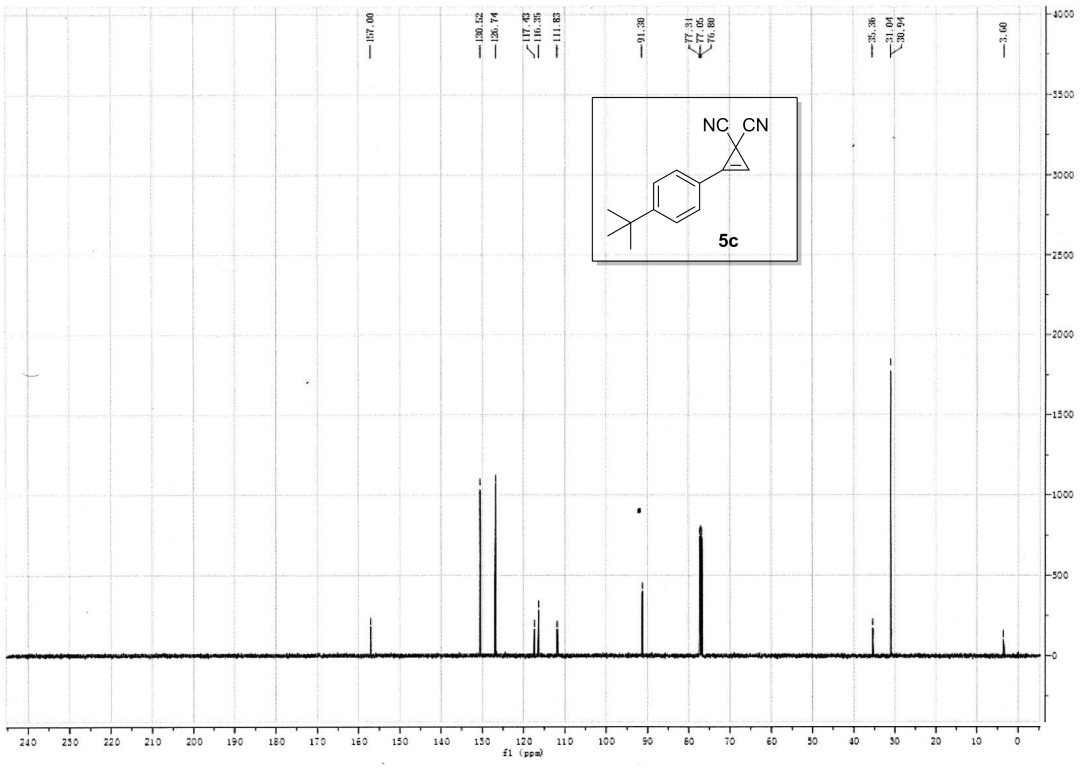

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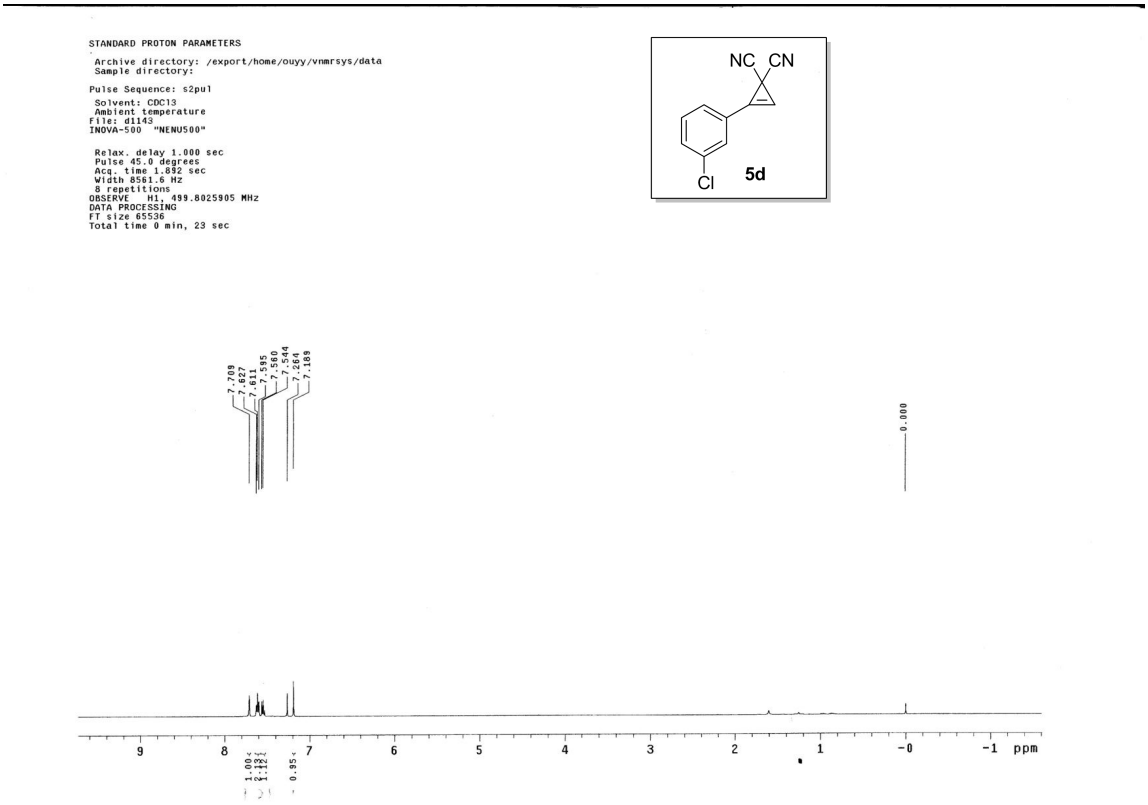

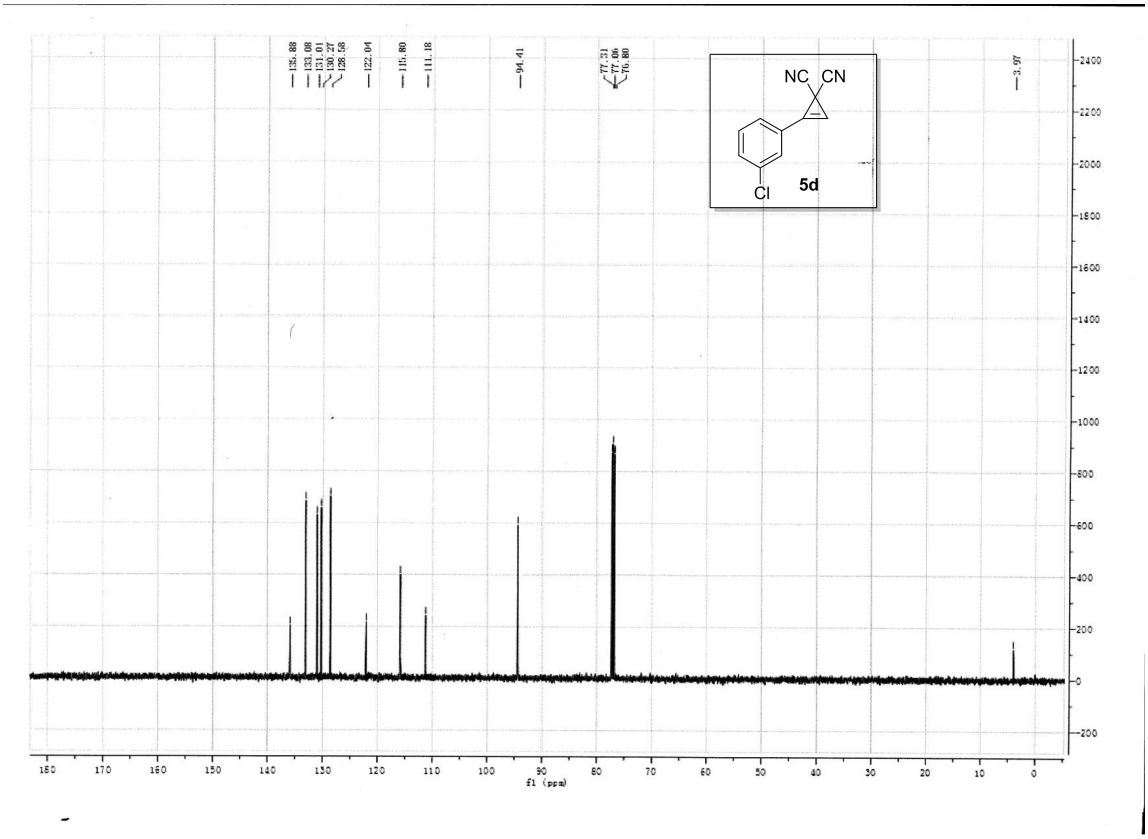

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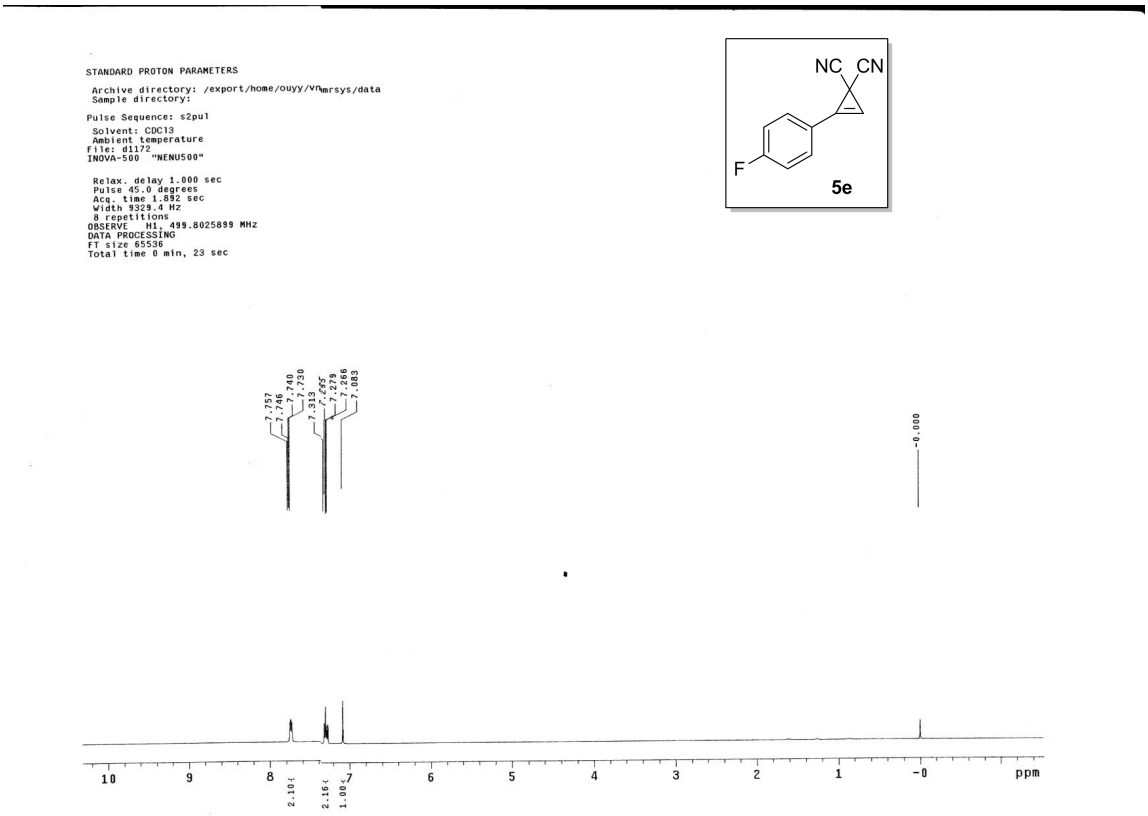

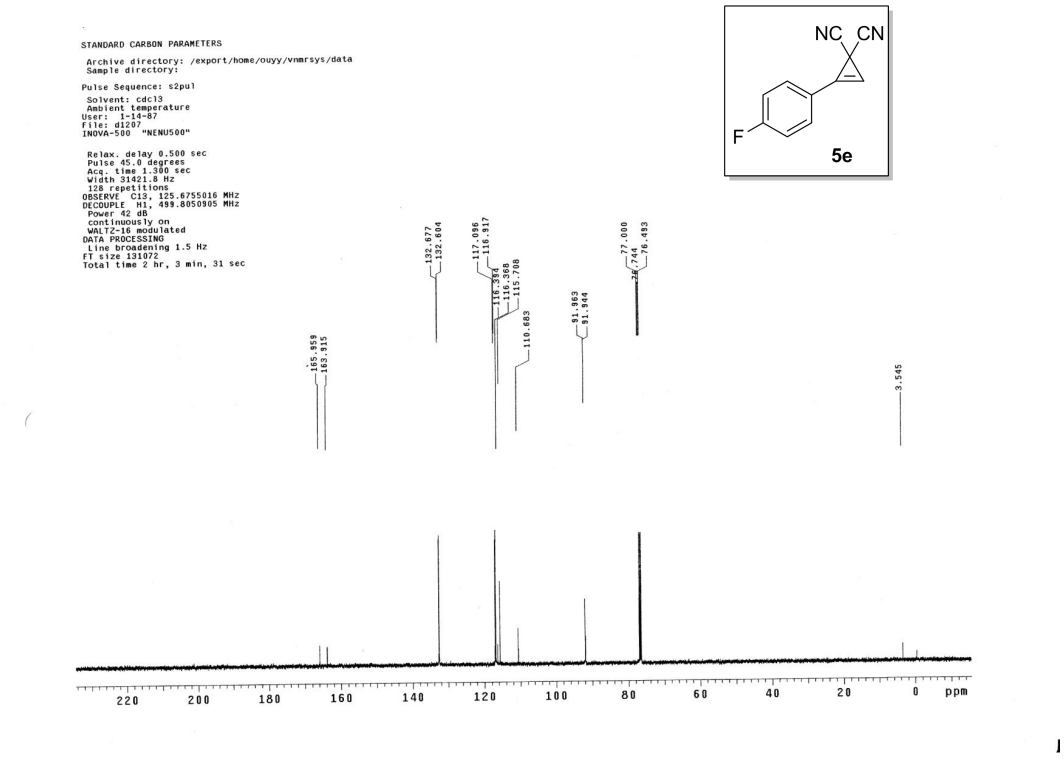

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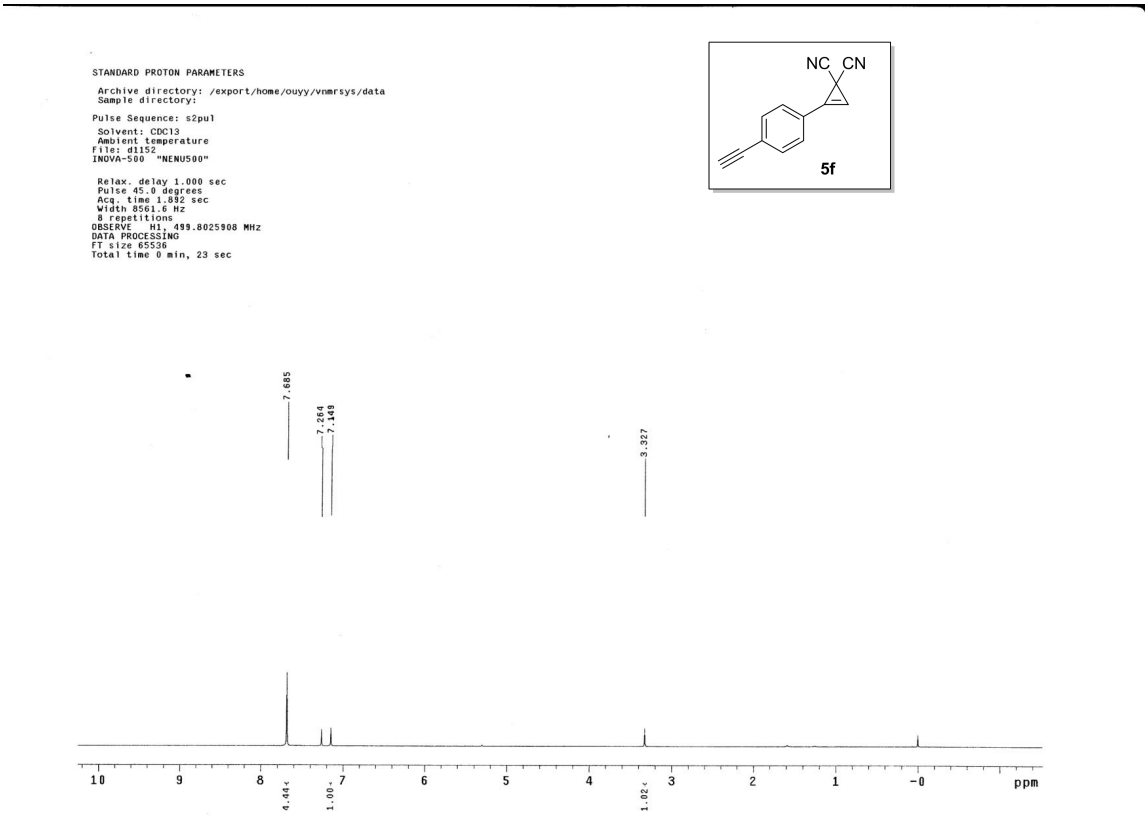

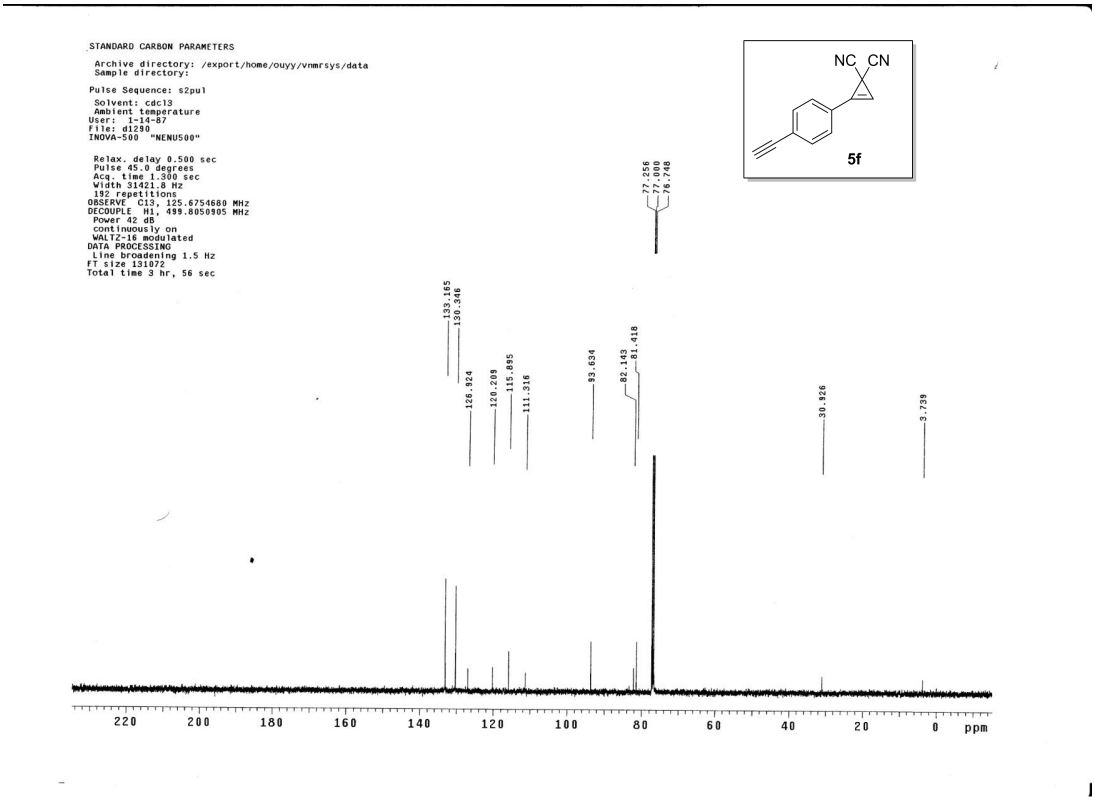

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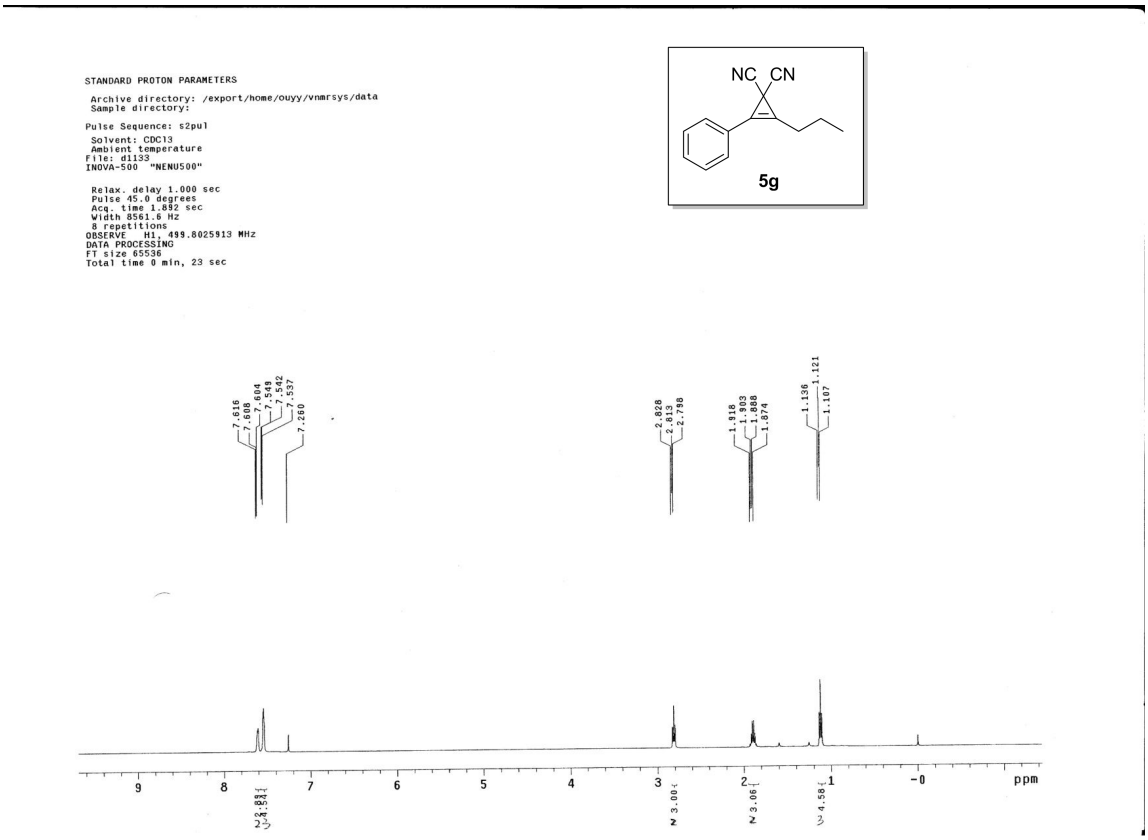

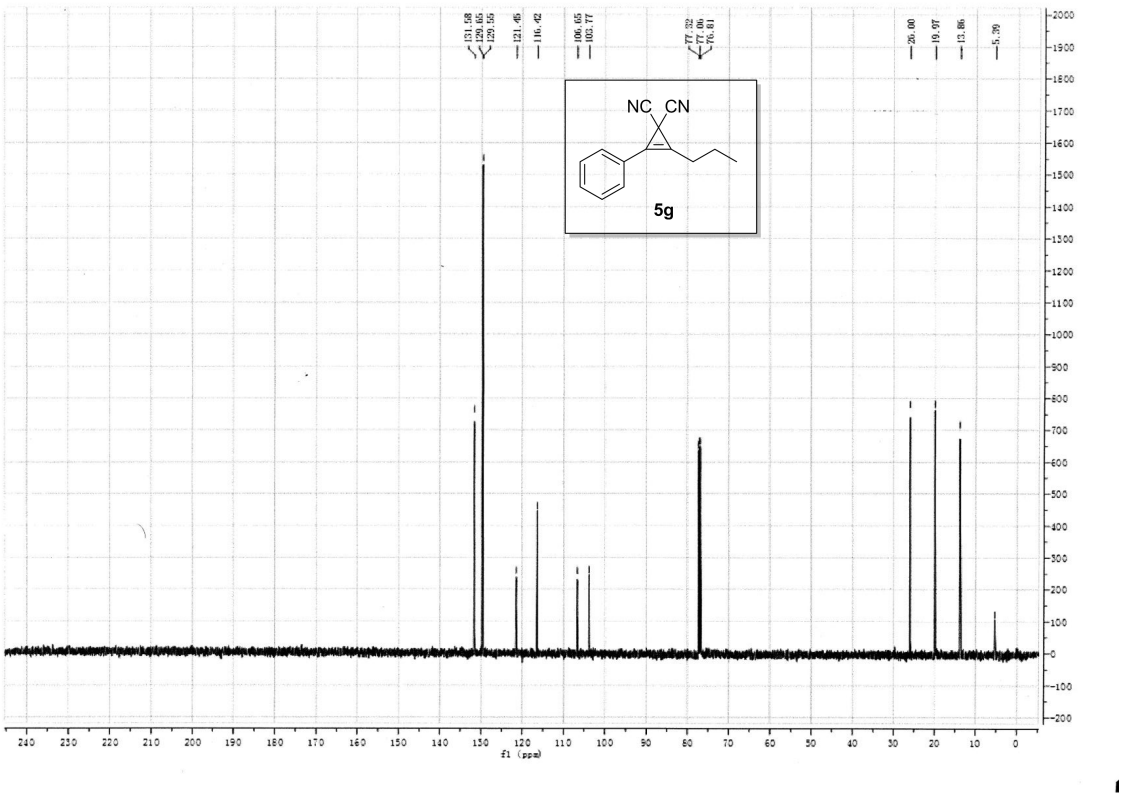

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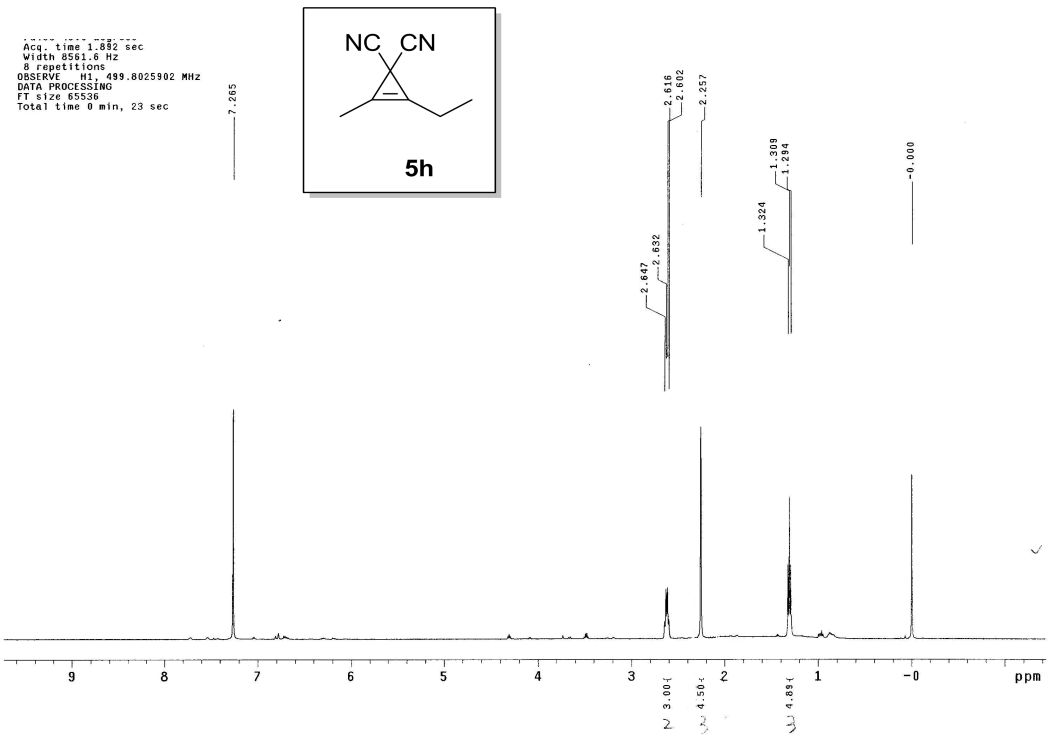

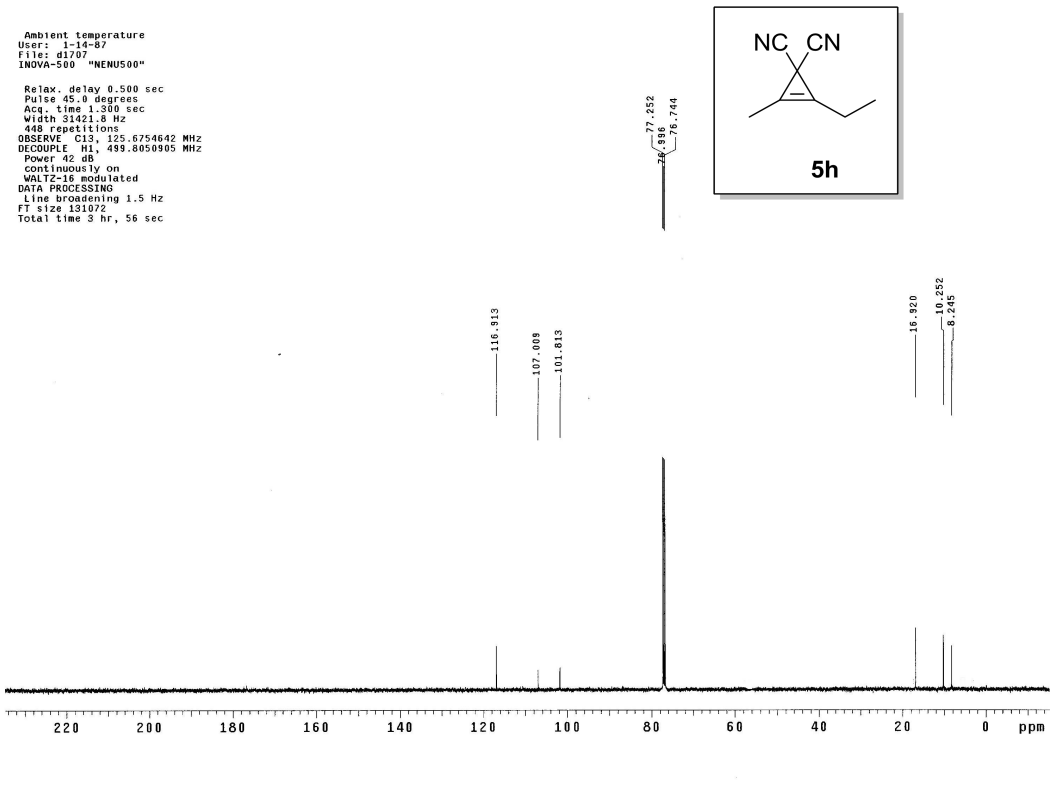

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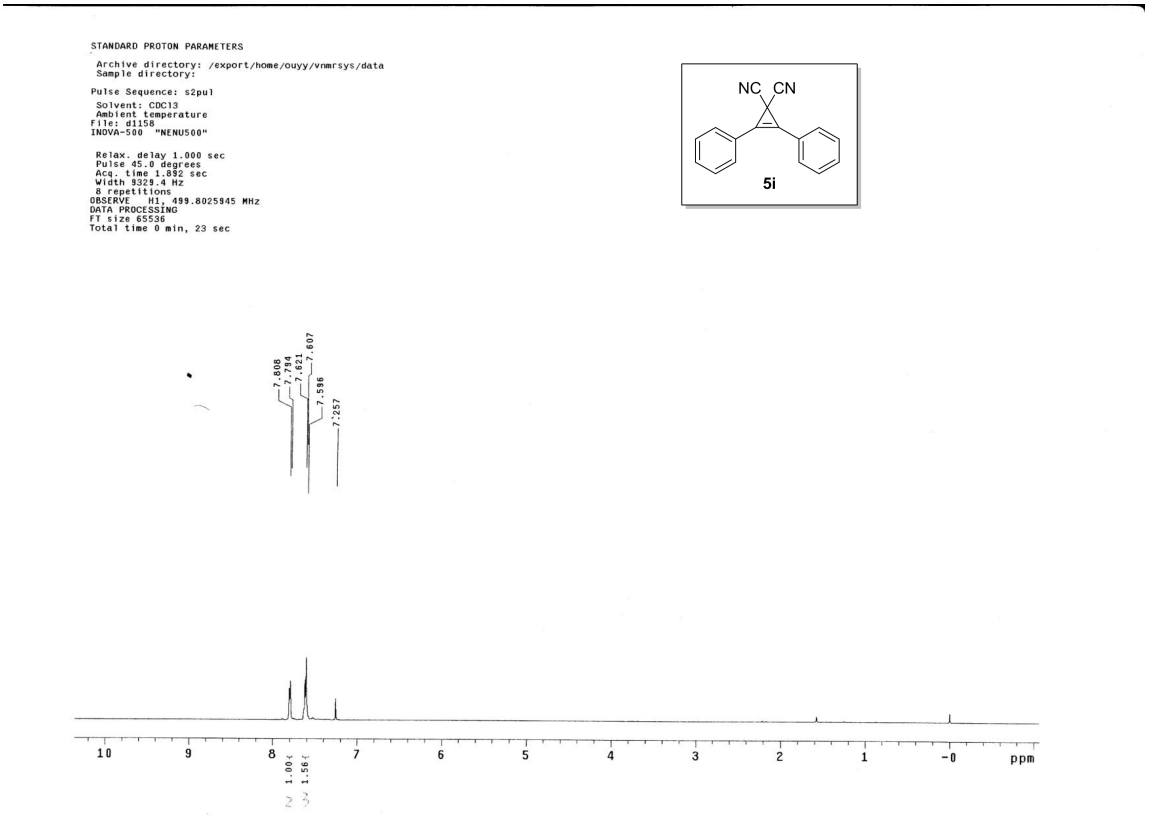

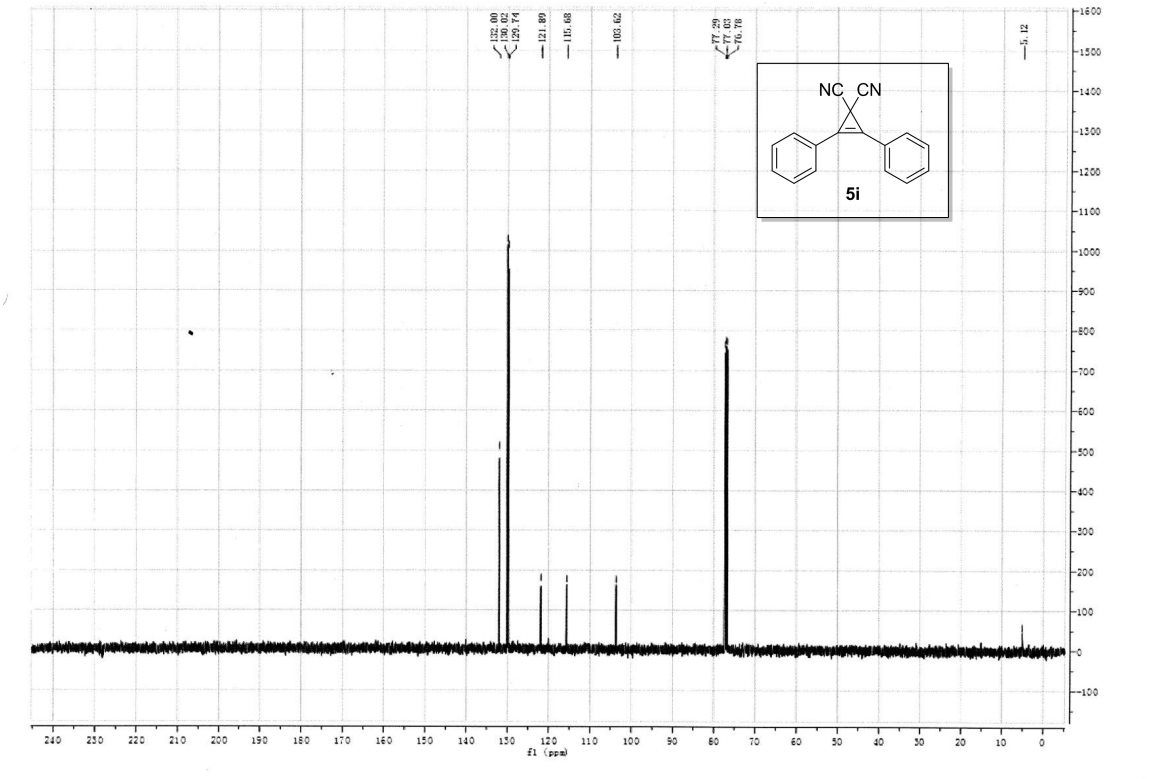

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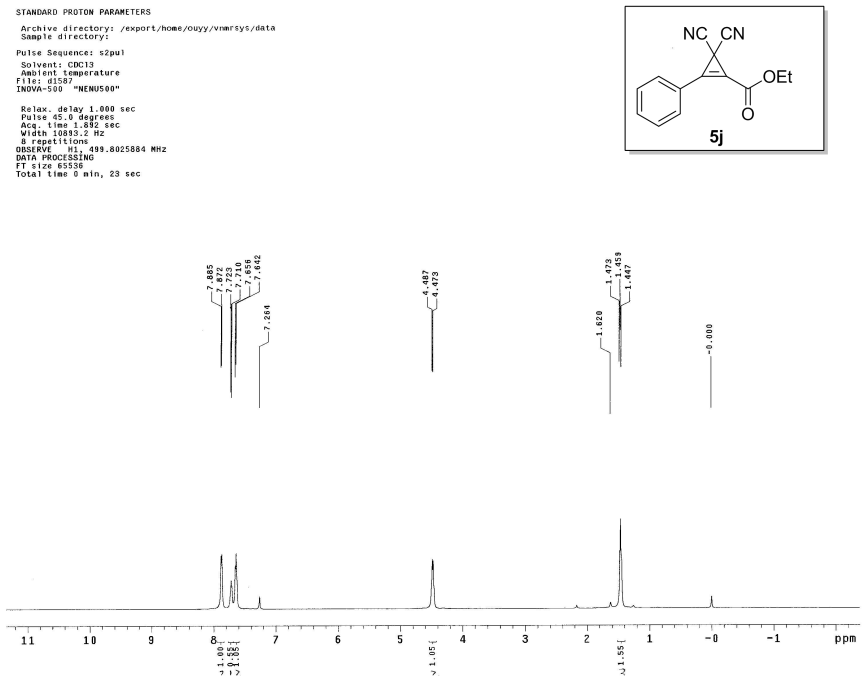

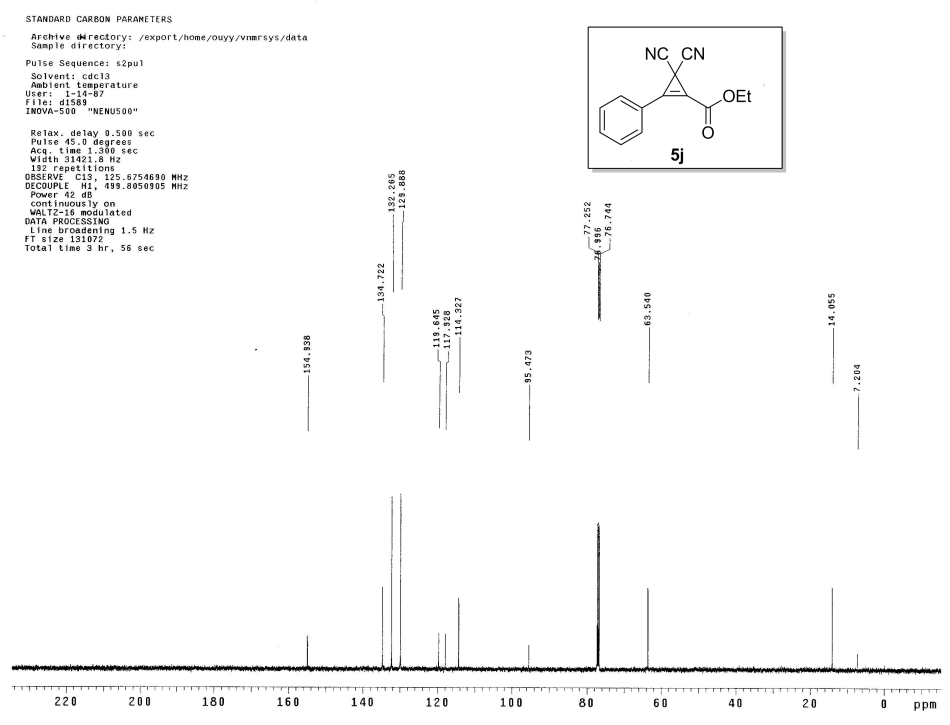

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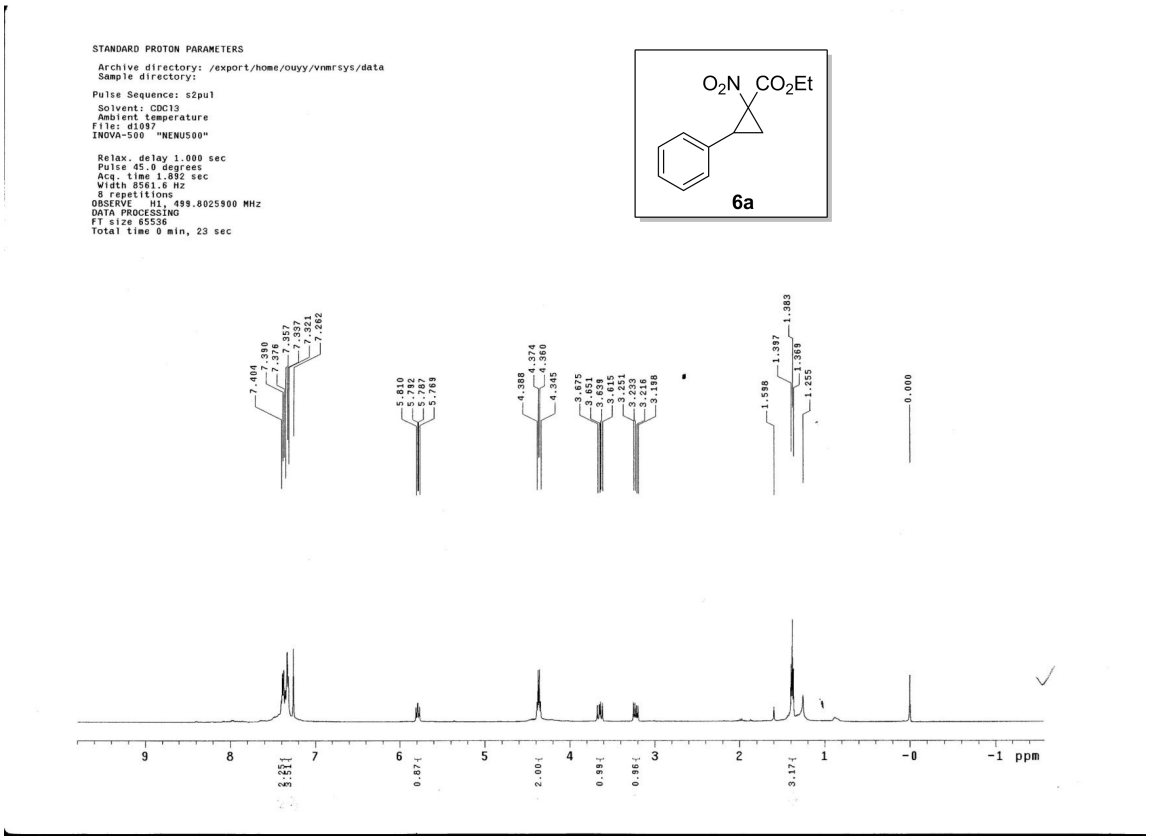

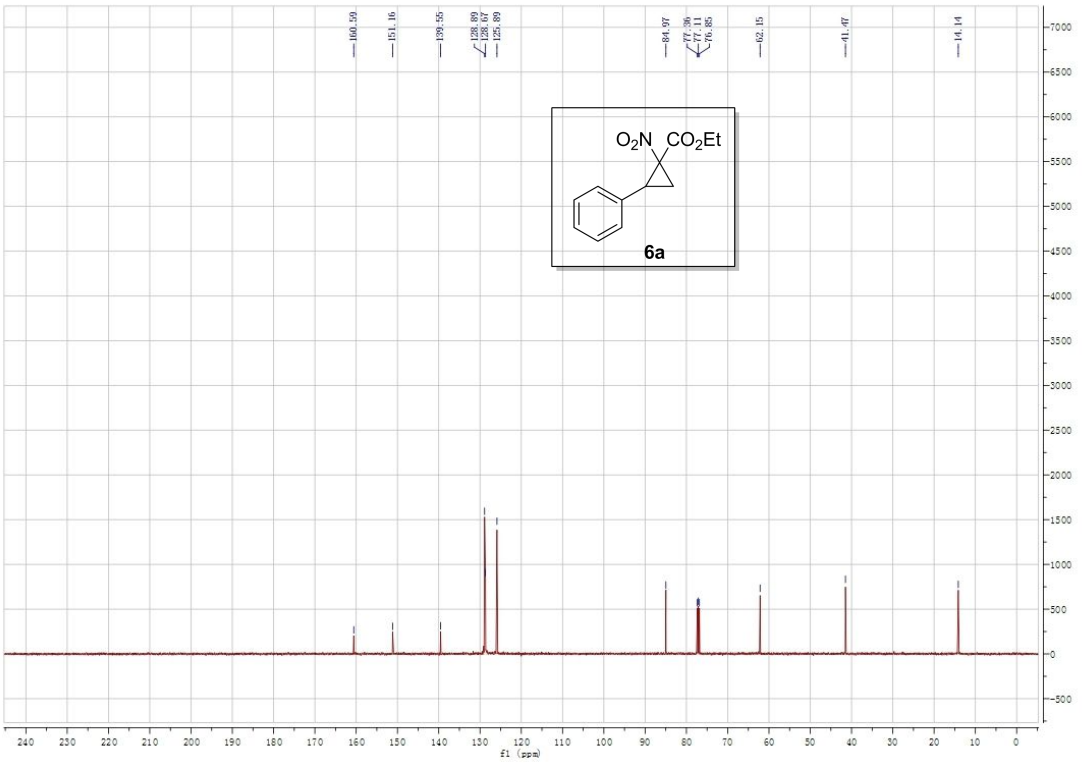

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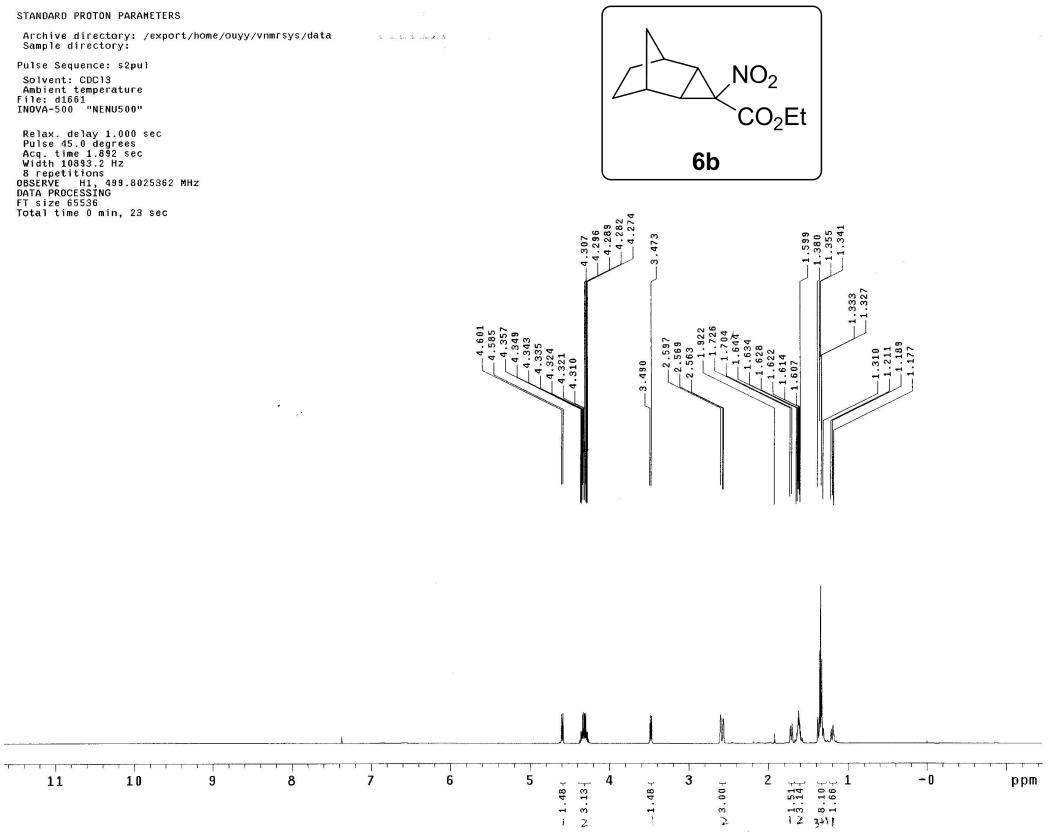

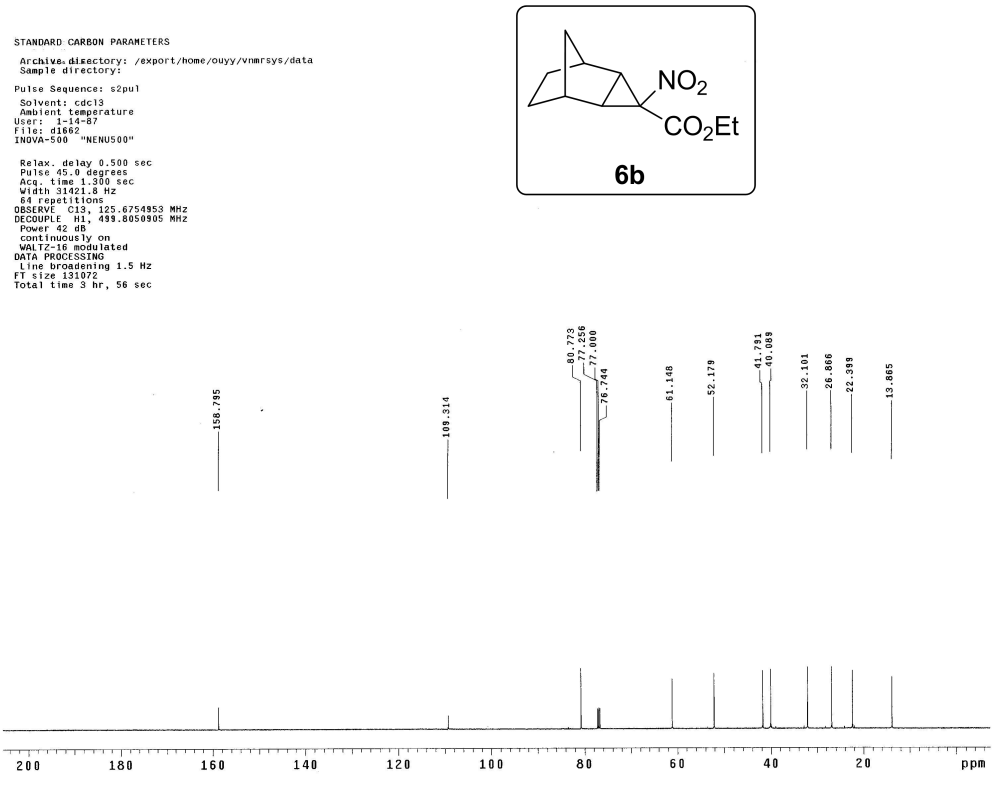

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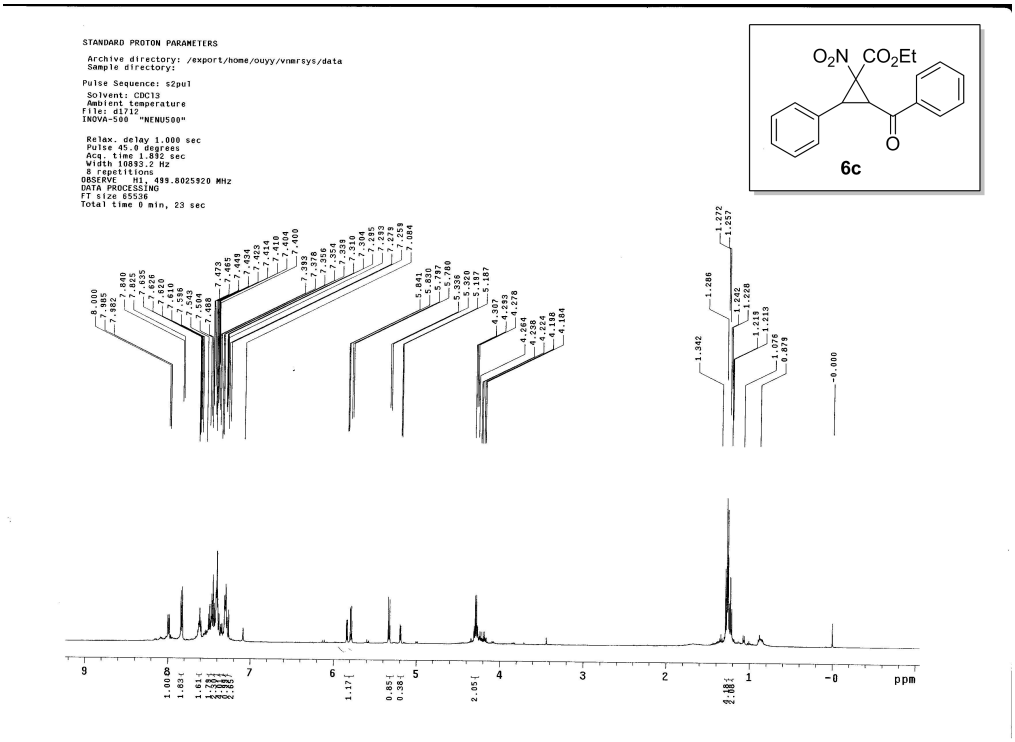

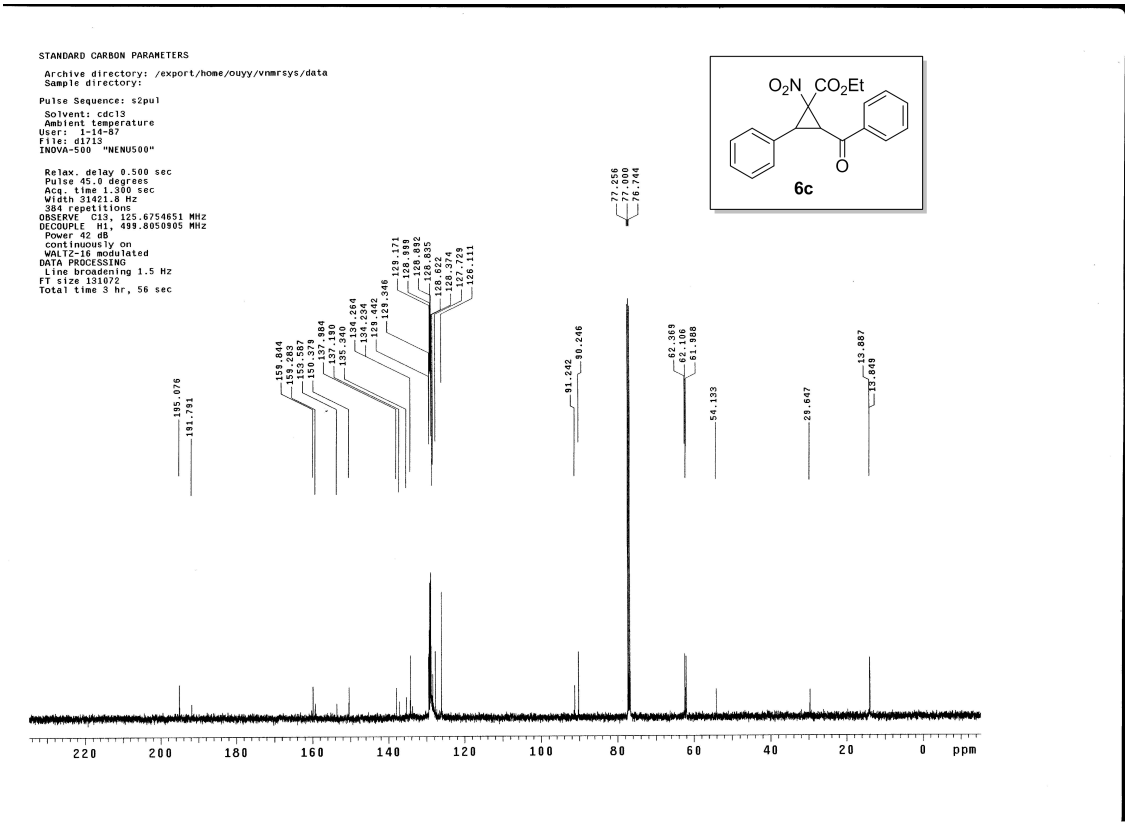

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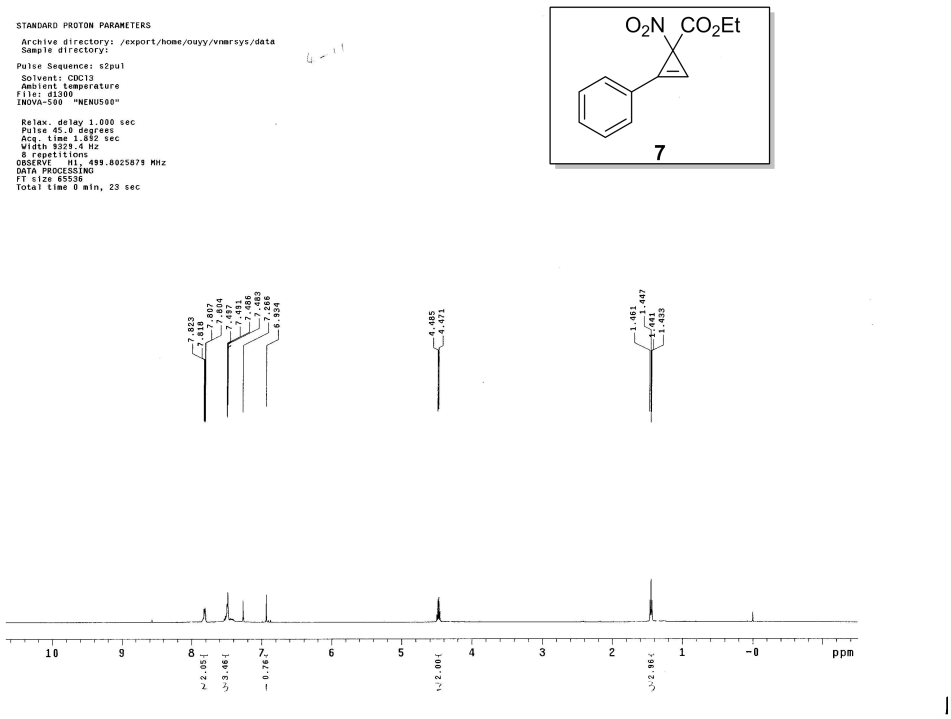

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III. Control experiment.

After stirring the mixture of malononitrile, $PhI(OAc)_2$ and K_2CO_3 under the reaction conditions about 5-10 min, sample was taken and diluted with CH_3CN prior to the injection into the mass spectrometer. However, no peaks corresponding to PhIO (m/z = 219.9385) or ligand exchange between acetate anion and malononitrile (m/z = 327.9709 or m/z = 333.9715) were detected.