

## Supporting Information

### Imines that React with Phenols in Water over a Wide pH Range

Maki Minakawa, Hai-Ming Guo, Fujie Tanaka\*

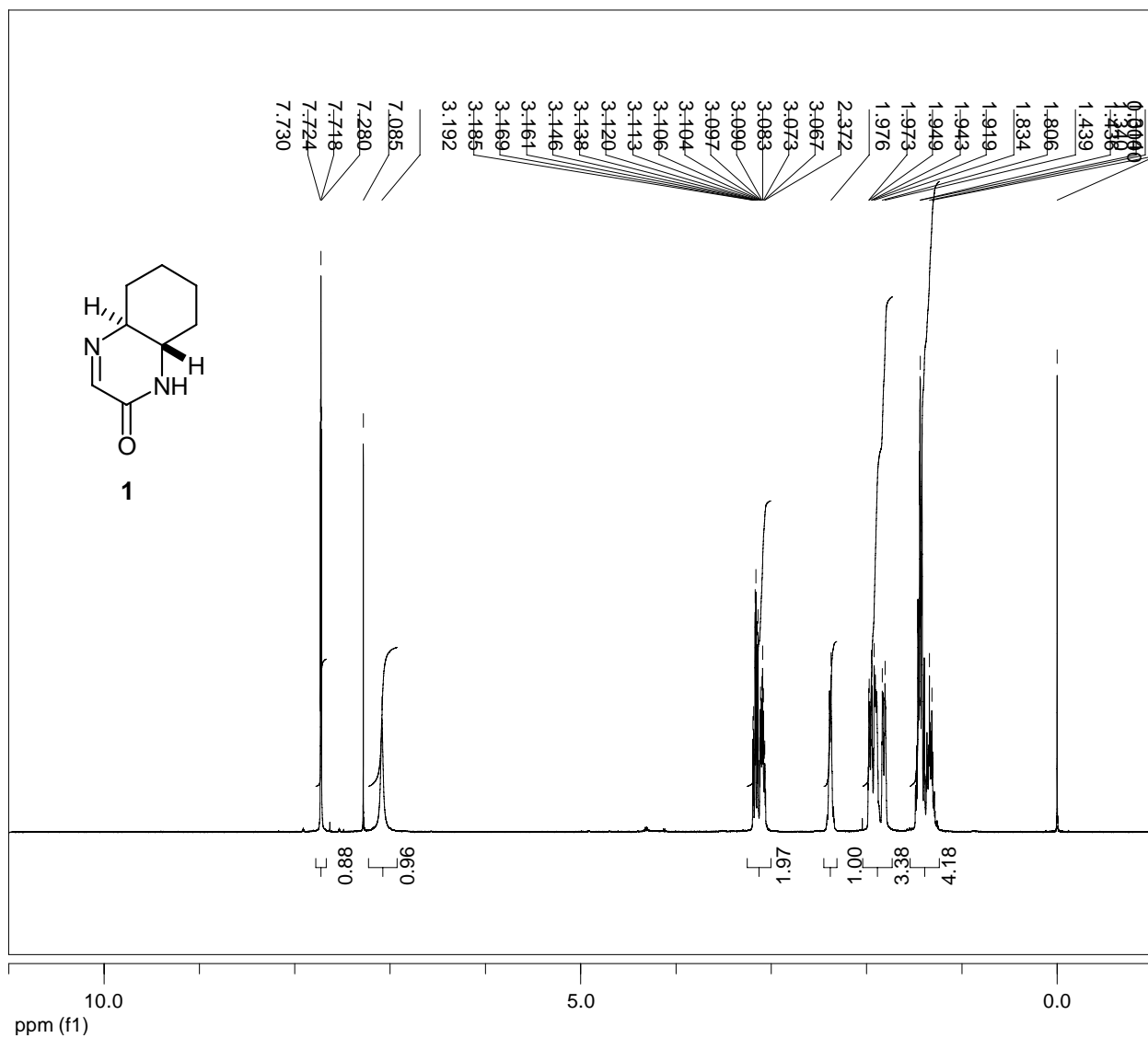
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Pines Road, La Jolla, California 92037*

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1. Synthesis of imines <b>1</b> and <b>2</b> -----	S2
2. Reactions of imines <b>1</b> and <b>2</b> with 4-methylphenol -----	S3
3. Stability analyses of compounds <b>3a</b> , <b>3b</b> , and <b>4</b> -----	S8
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5. Reactions of imine <b>1</b> with potential nucleophiles -----	S14
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**General:** For thin layer chromatography (TLC), silica gel plates with fluorescent indicator were used. Flash column chromatography was performed using silica gel 32-63 mesh, 60 Å. For <sup>1</sup>H NMR spectra, proton chemical shifts ( $\delta$ ) are given in ppm relative to tetramethylsilane (0.00 ppm) in CDCl<sub>3</sub> or 3-(trimethylsilyl)propionic-2,2,3,3-d<sub>4</sub> acid sodium salt (0.00 ppm) in D<sub>2</sub>O. Multiplicities are indicated by s (singlet), d (doublet), t (triplet), m (multiplet), and br (broad). For <sup>13</sup>C NMR spectra, carbon chemical shifts were internally referenced to the deuterated solvent signal of CDCl<sub>3</sub> (77.00 ppm).

## 9. NMR spectra of compounds



**Date:**

20 Nov 2007

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**Actual Points Count:**

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**Spectral Width (ppm):**

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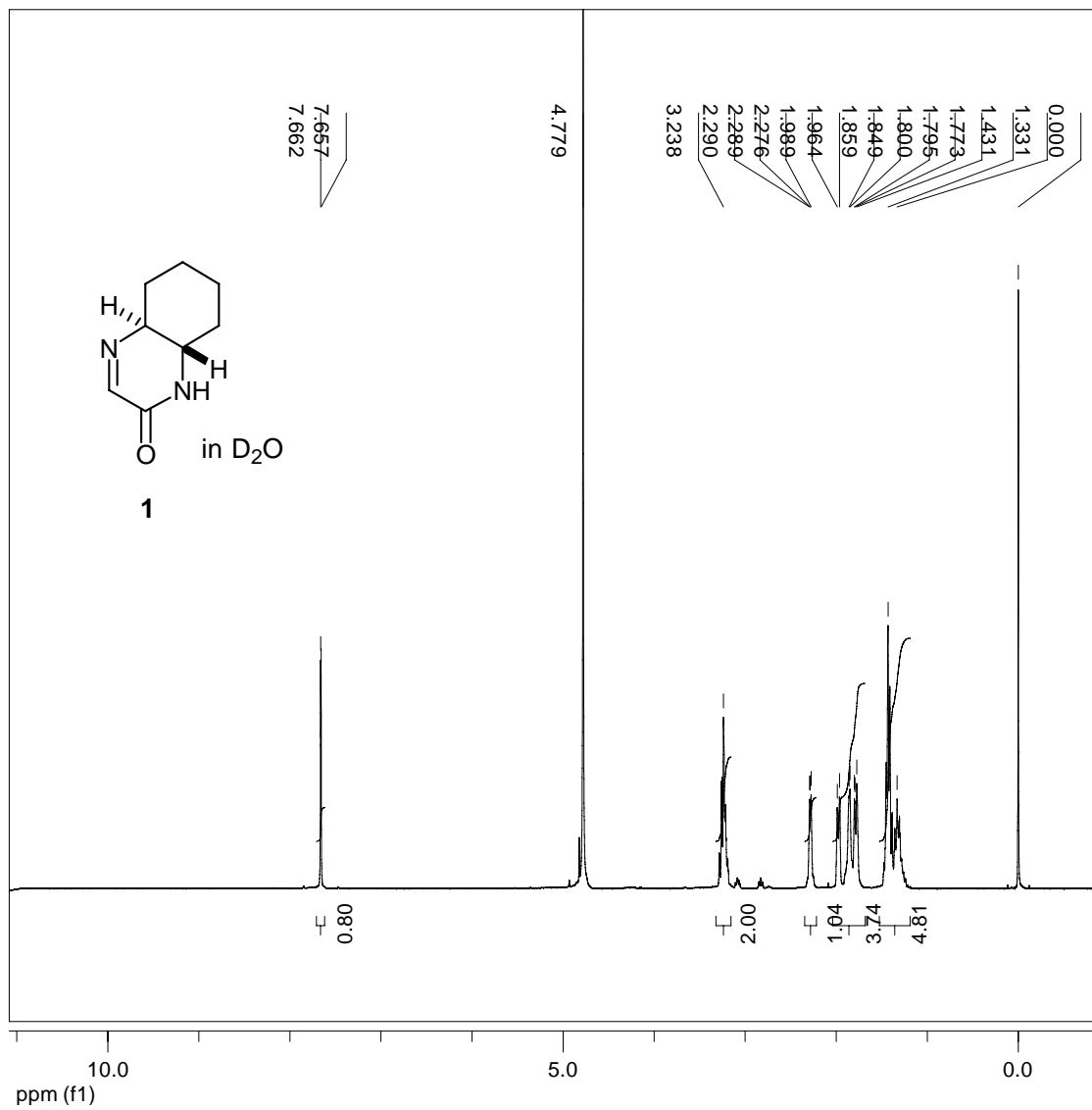
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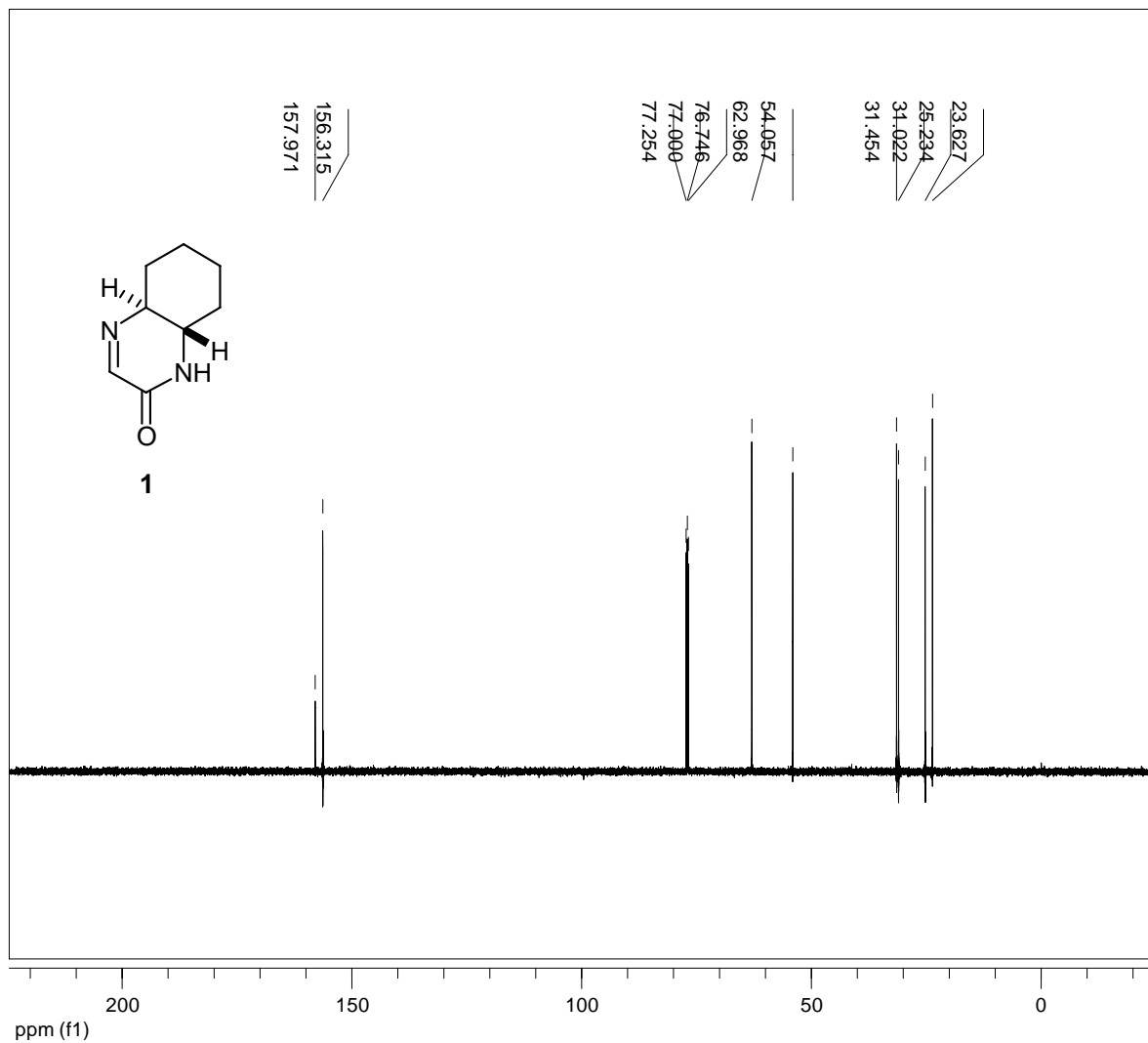
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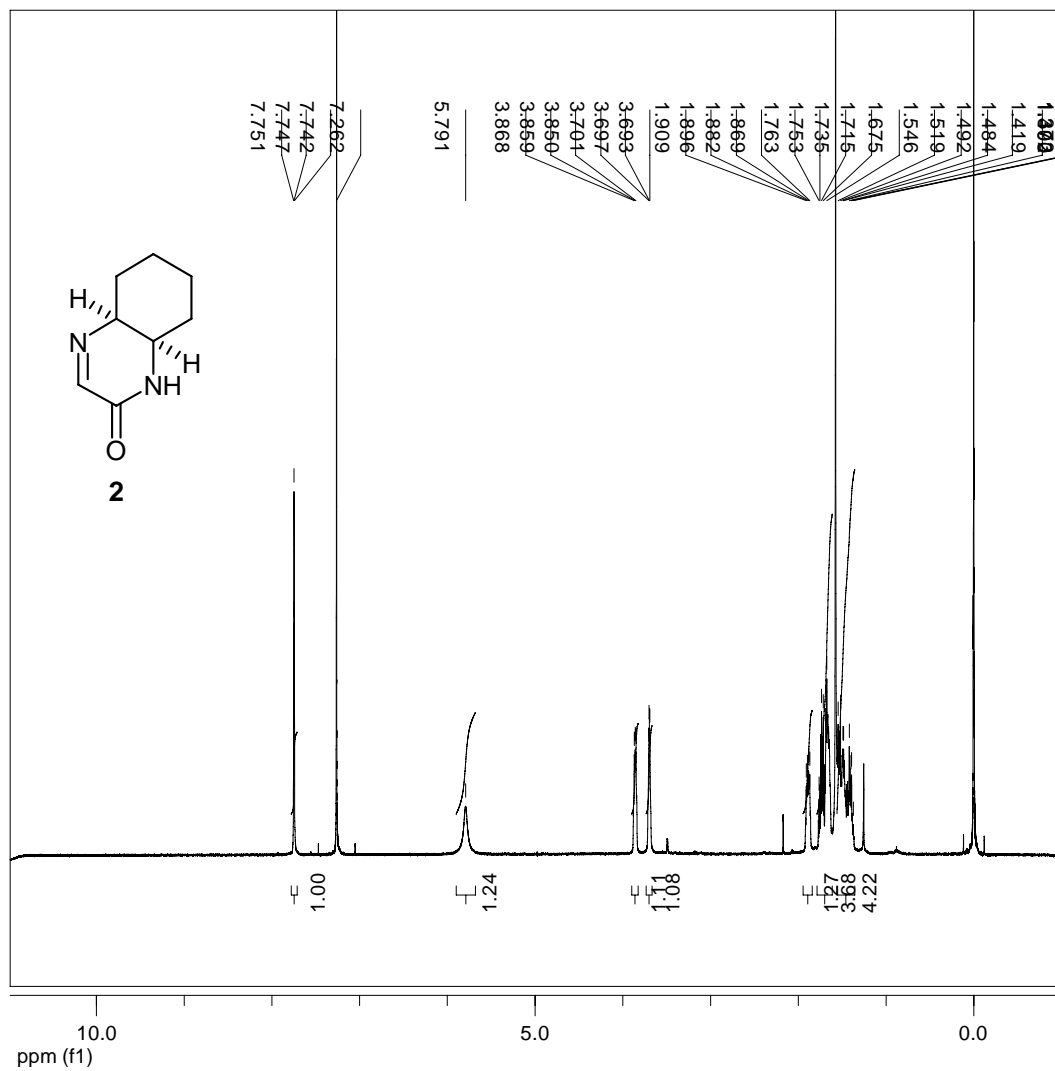
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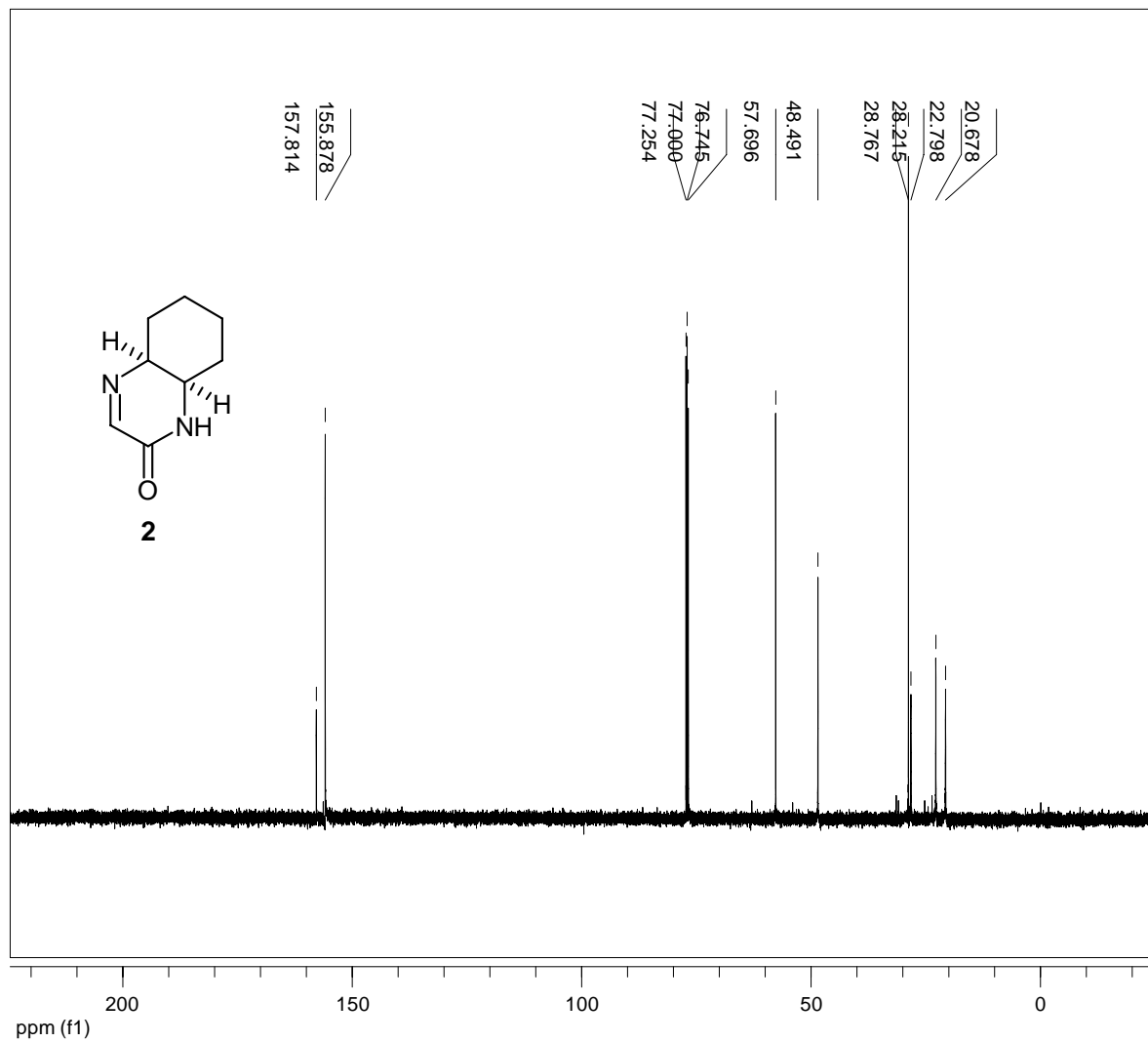
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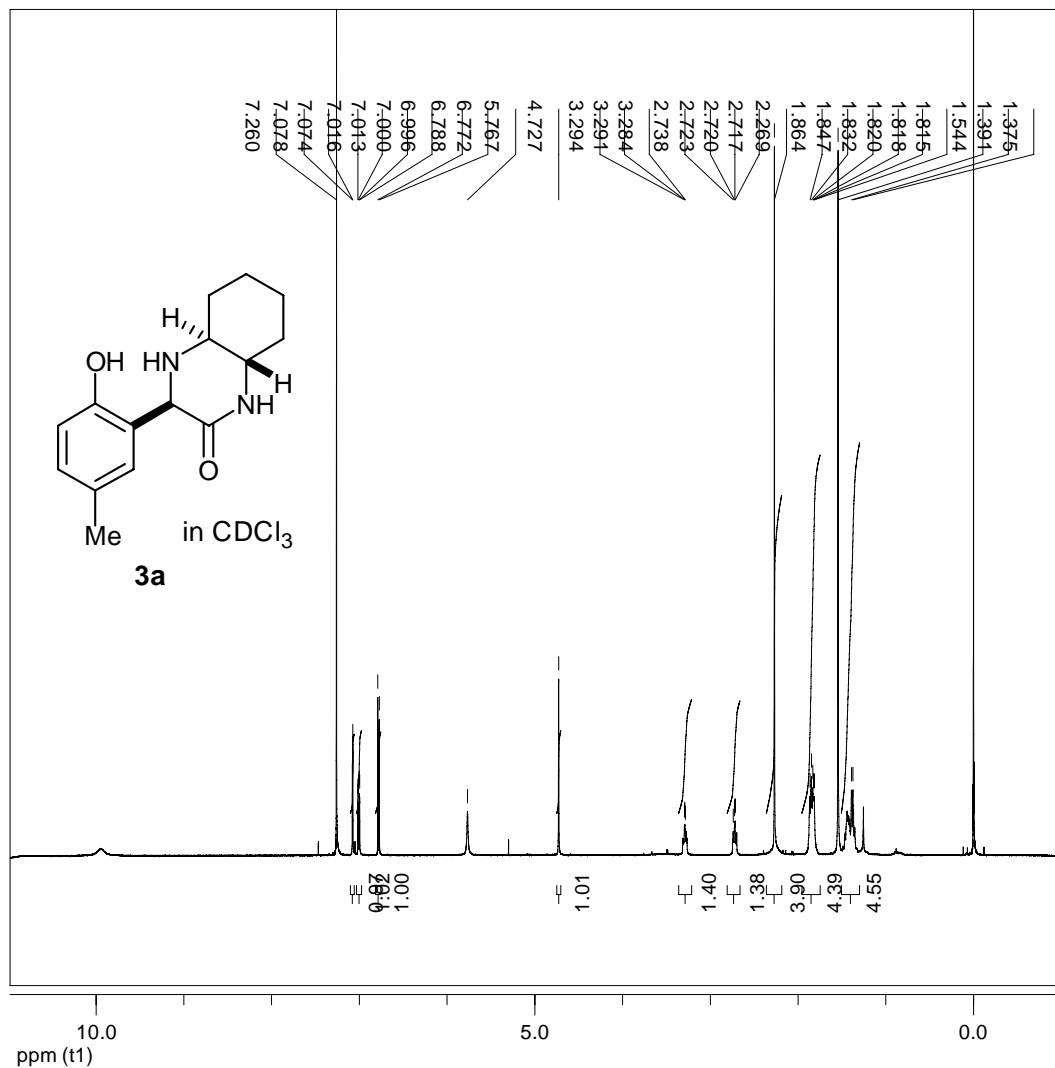
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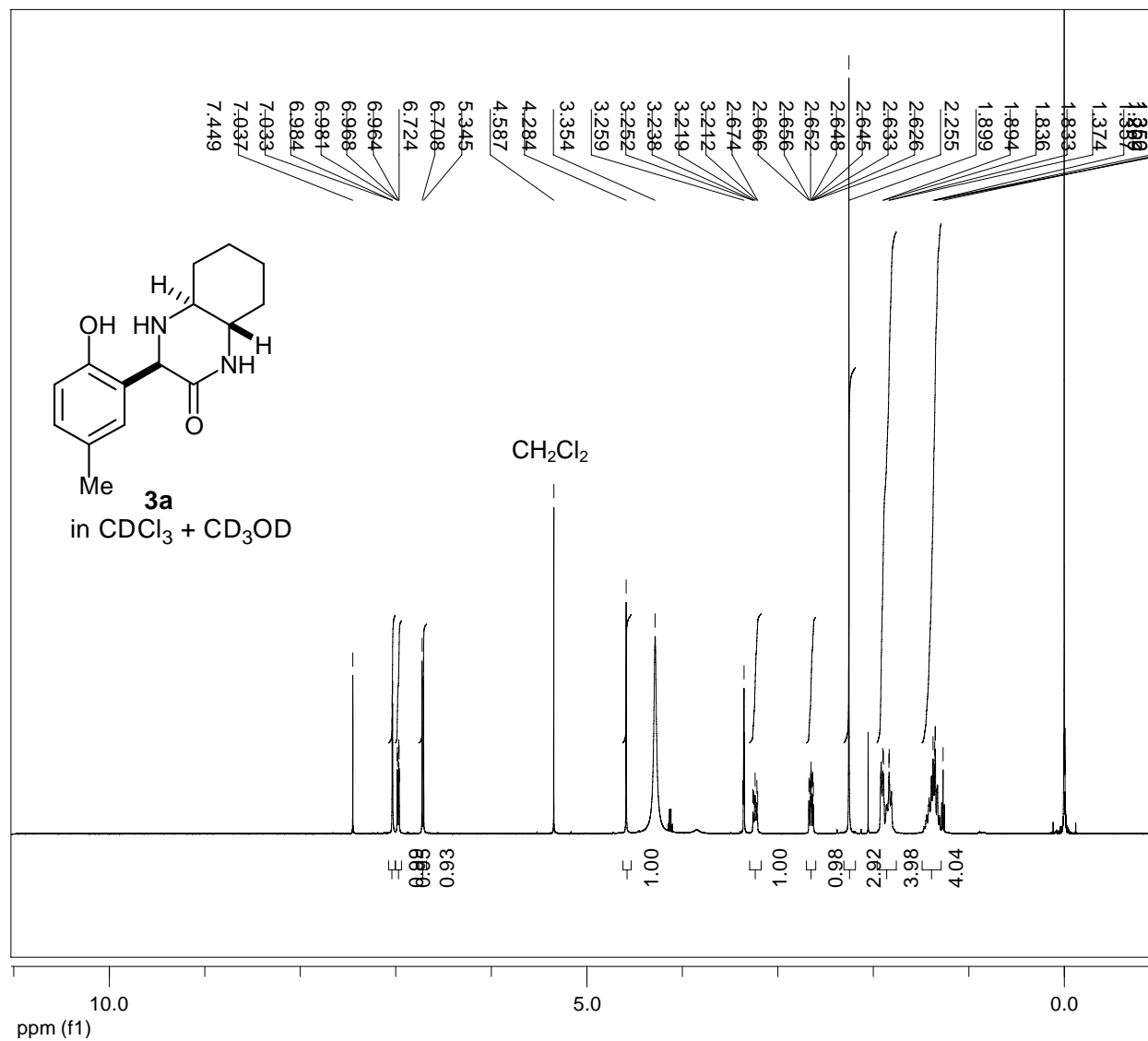
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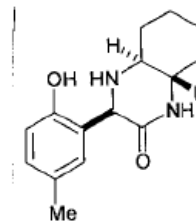
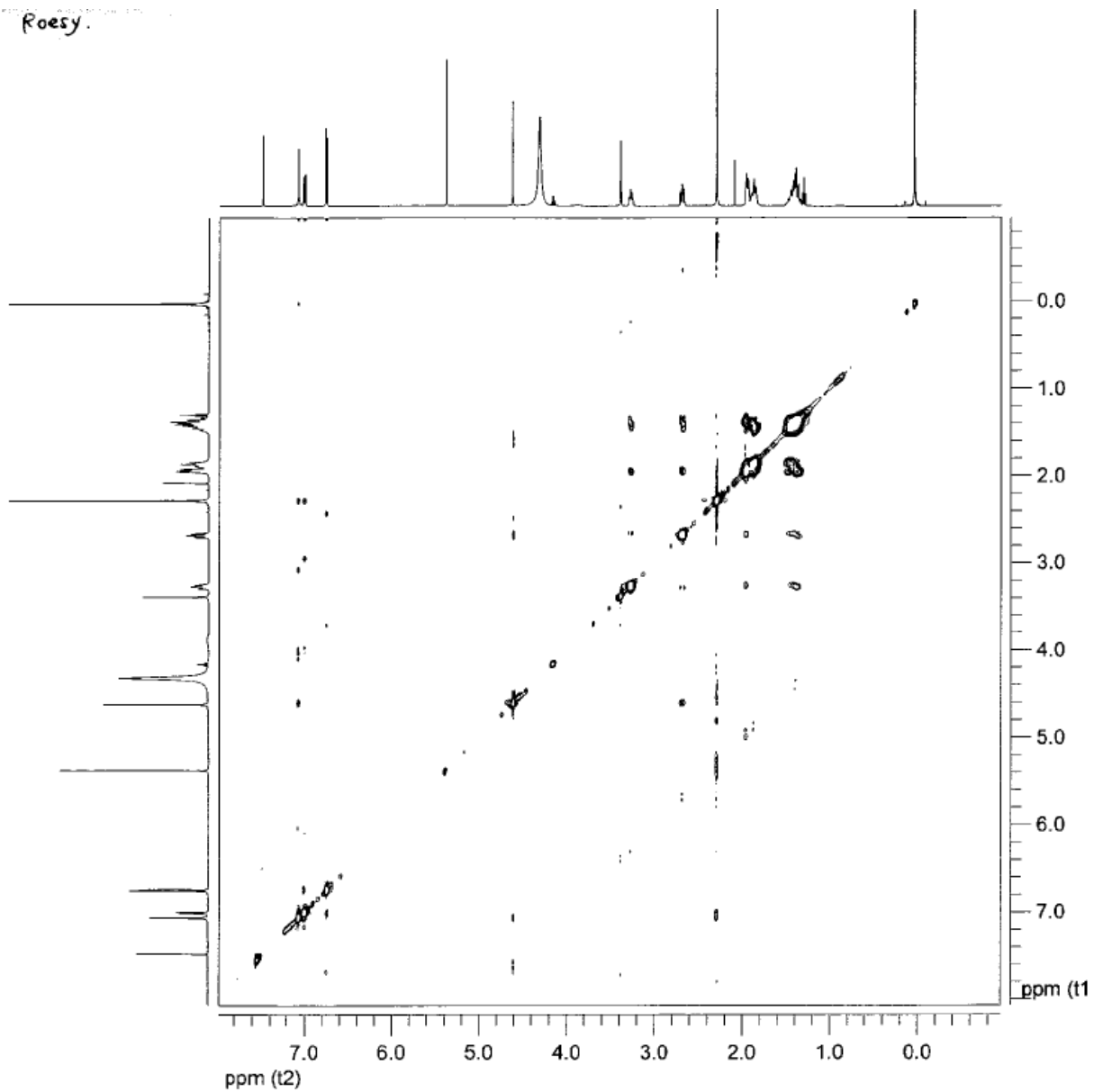
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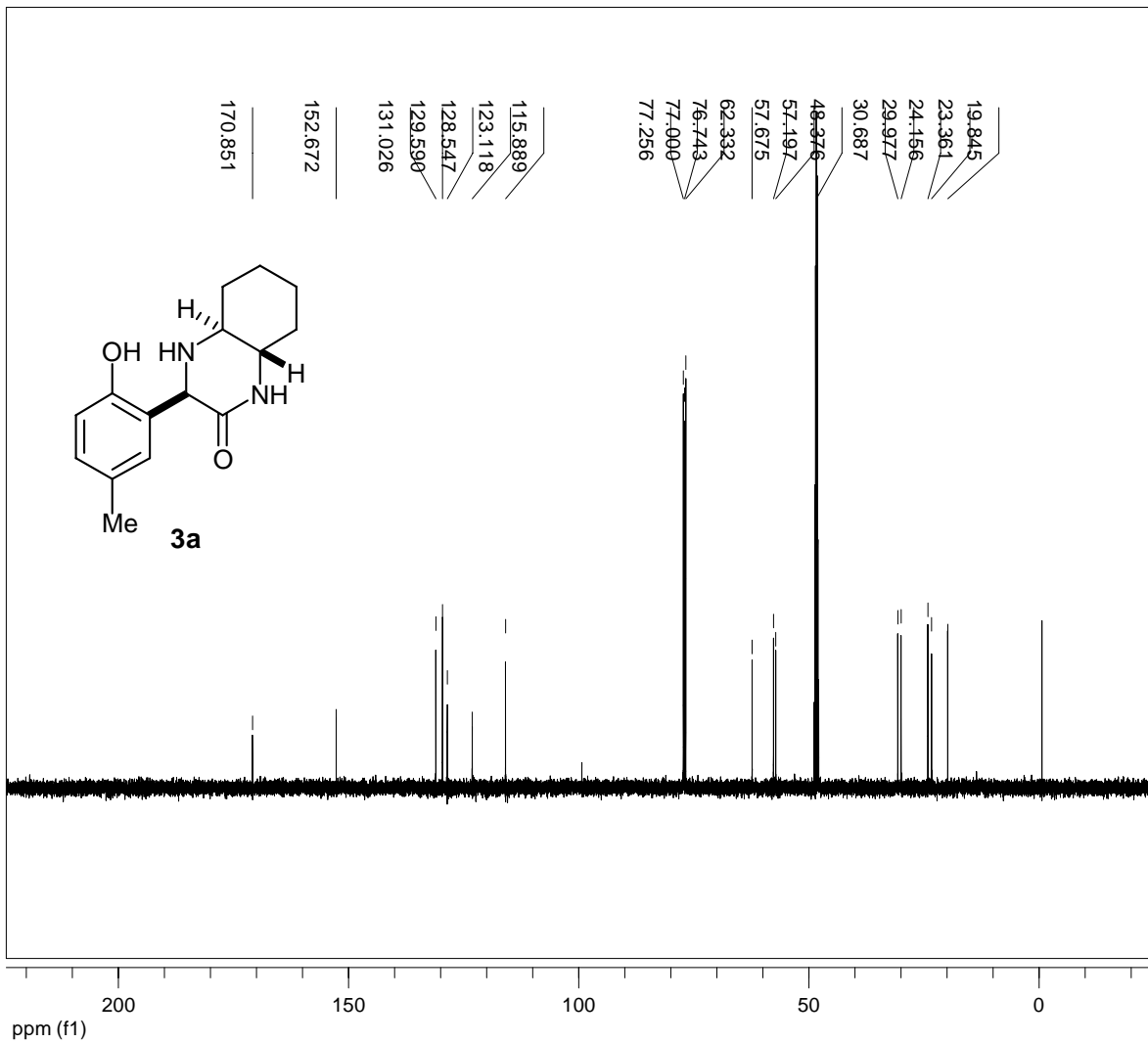
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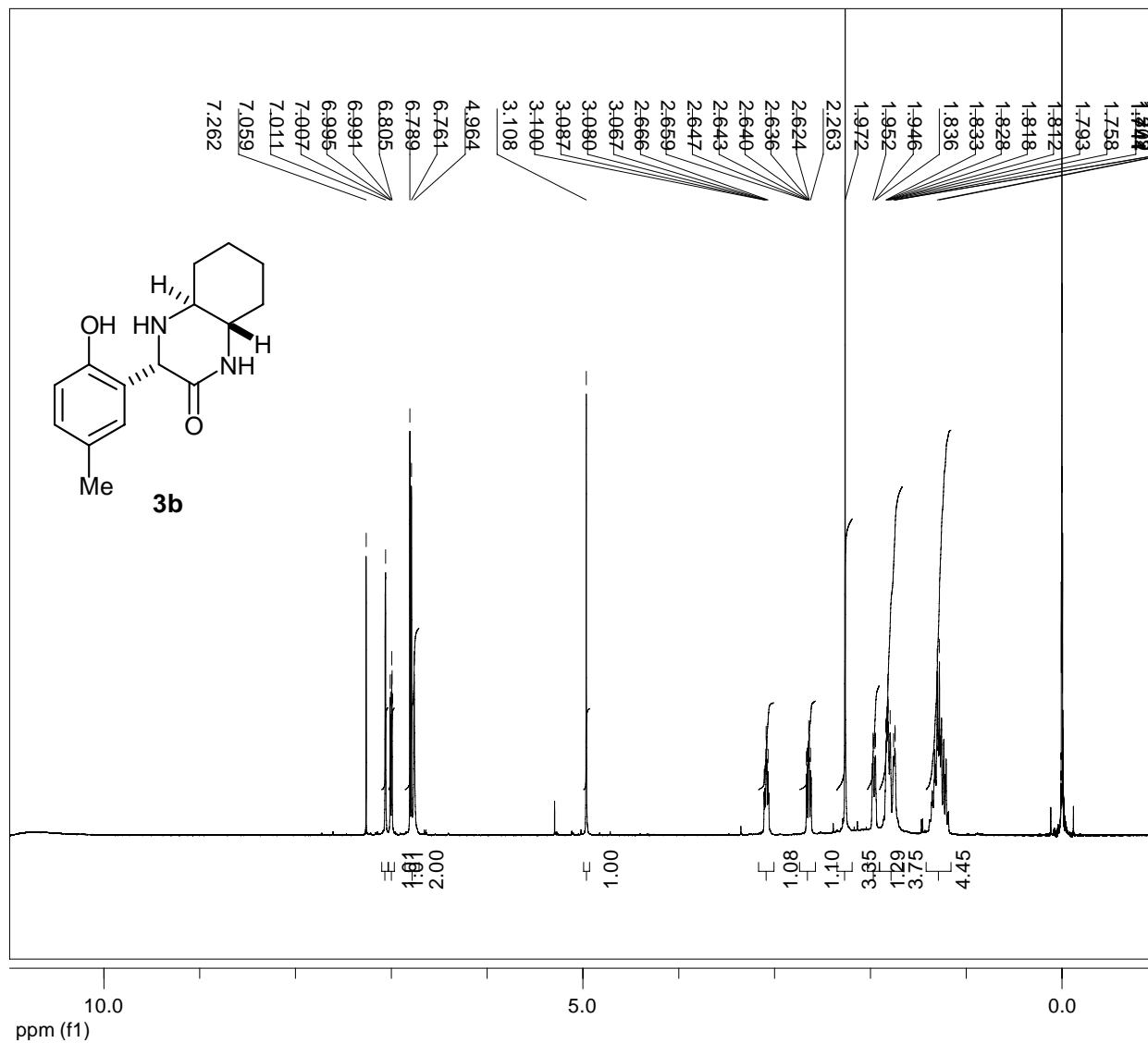
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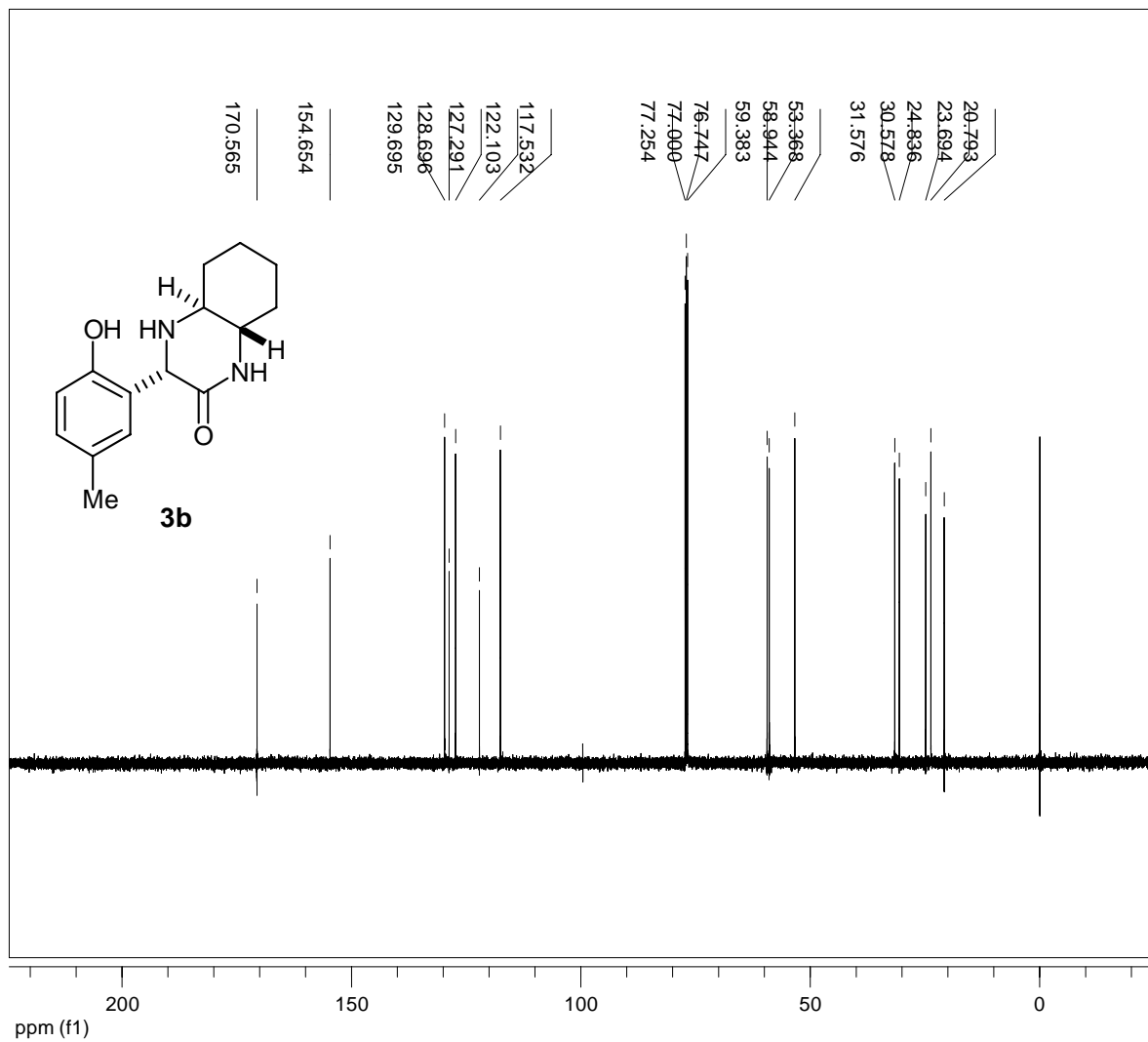
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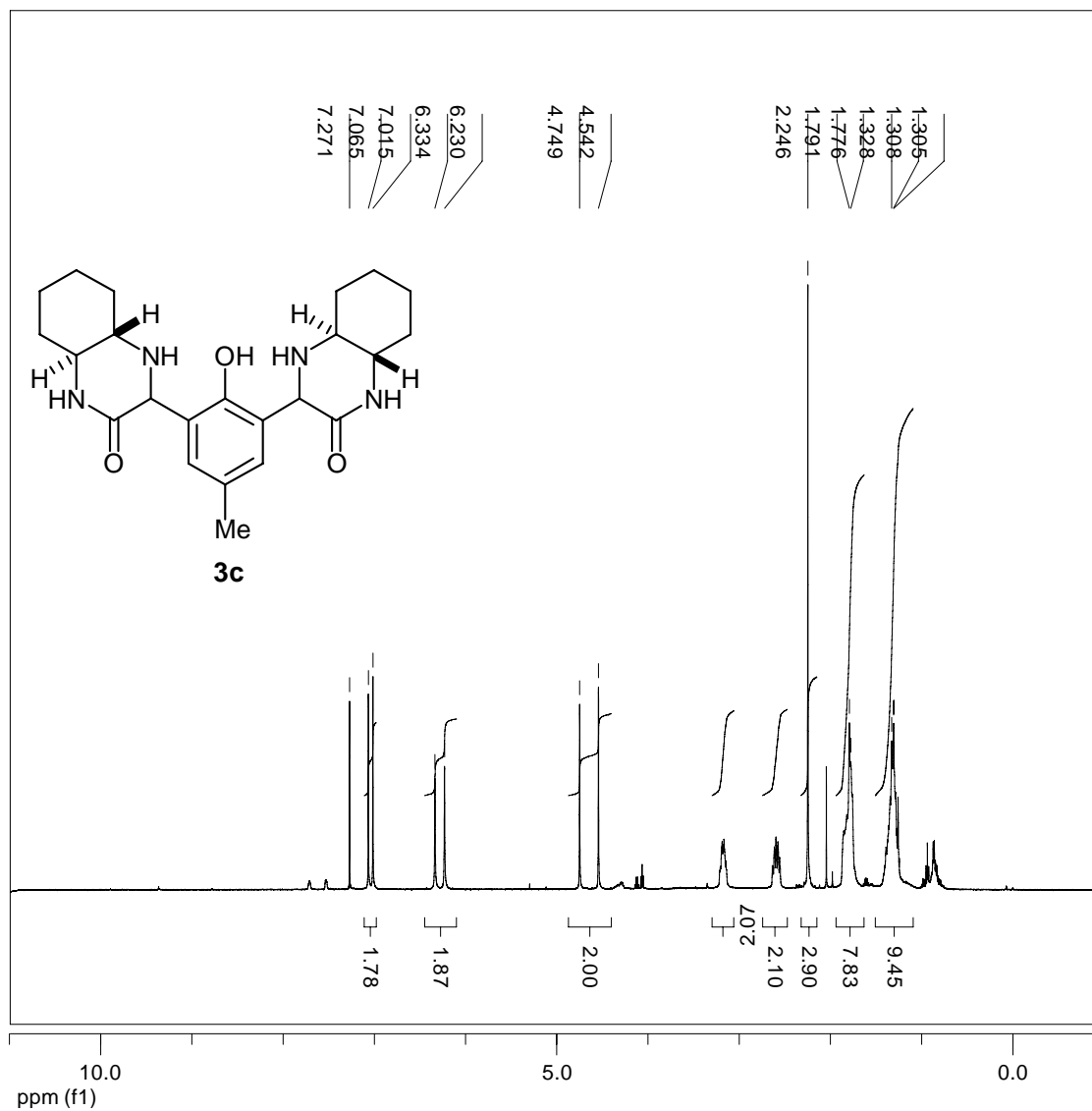
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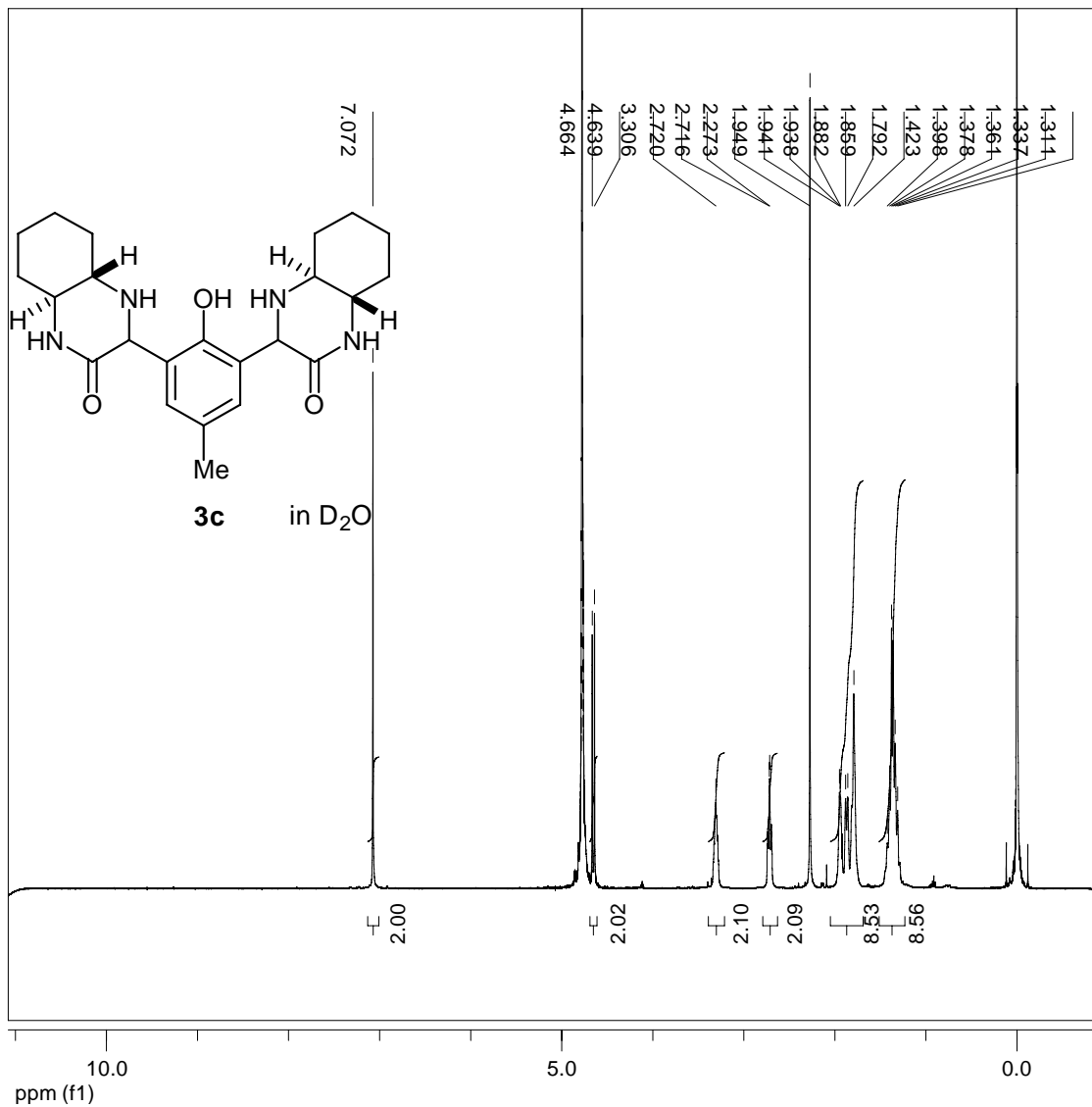
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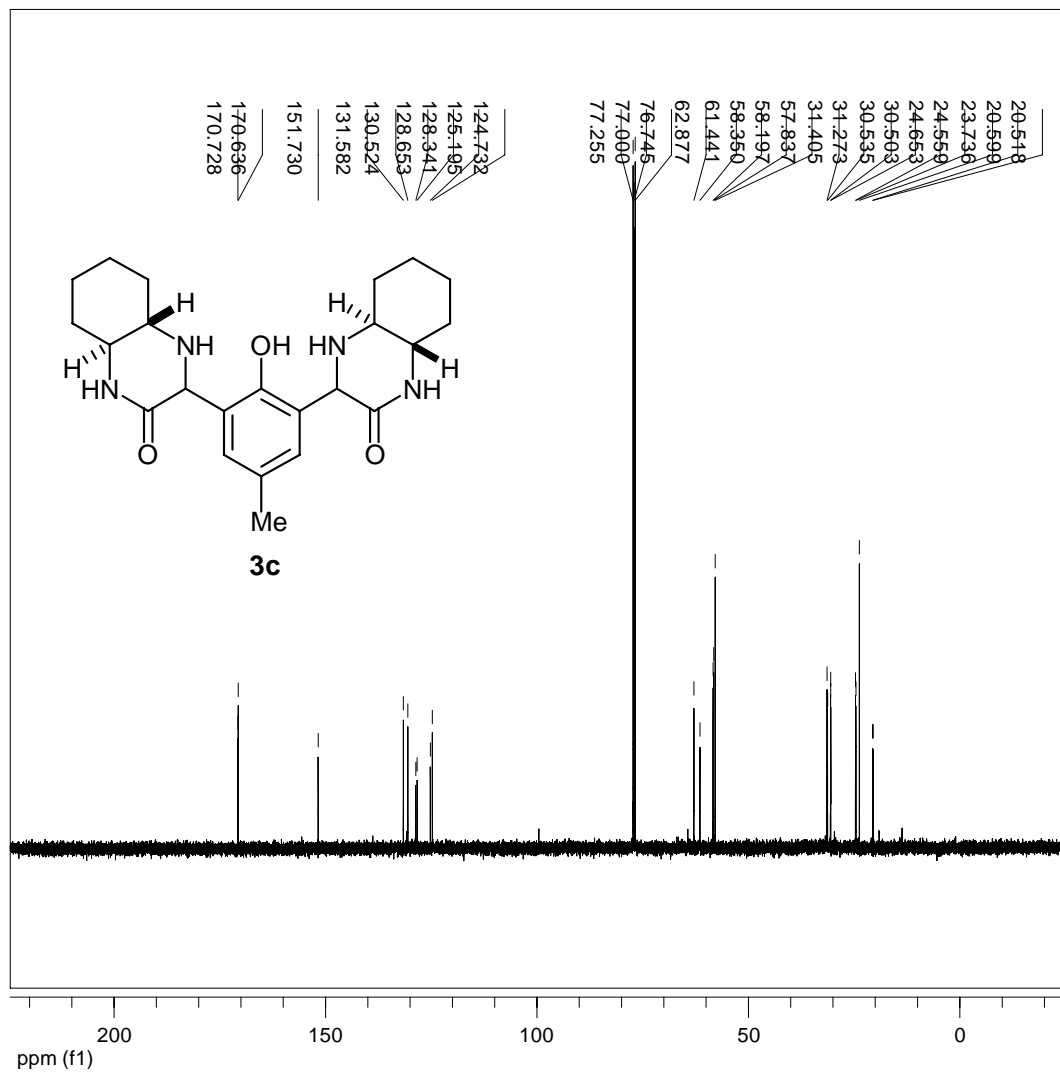
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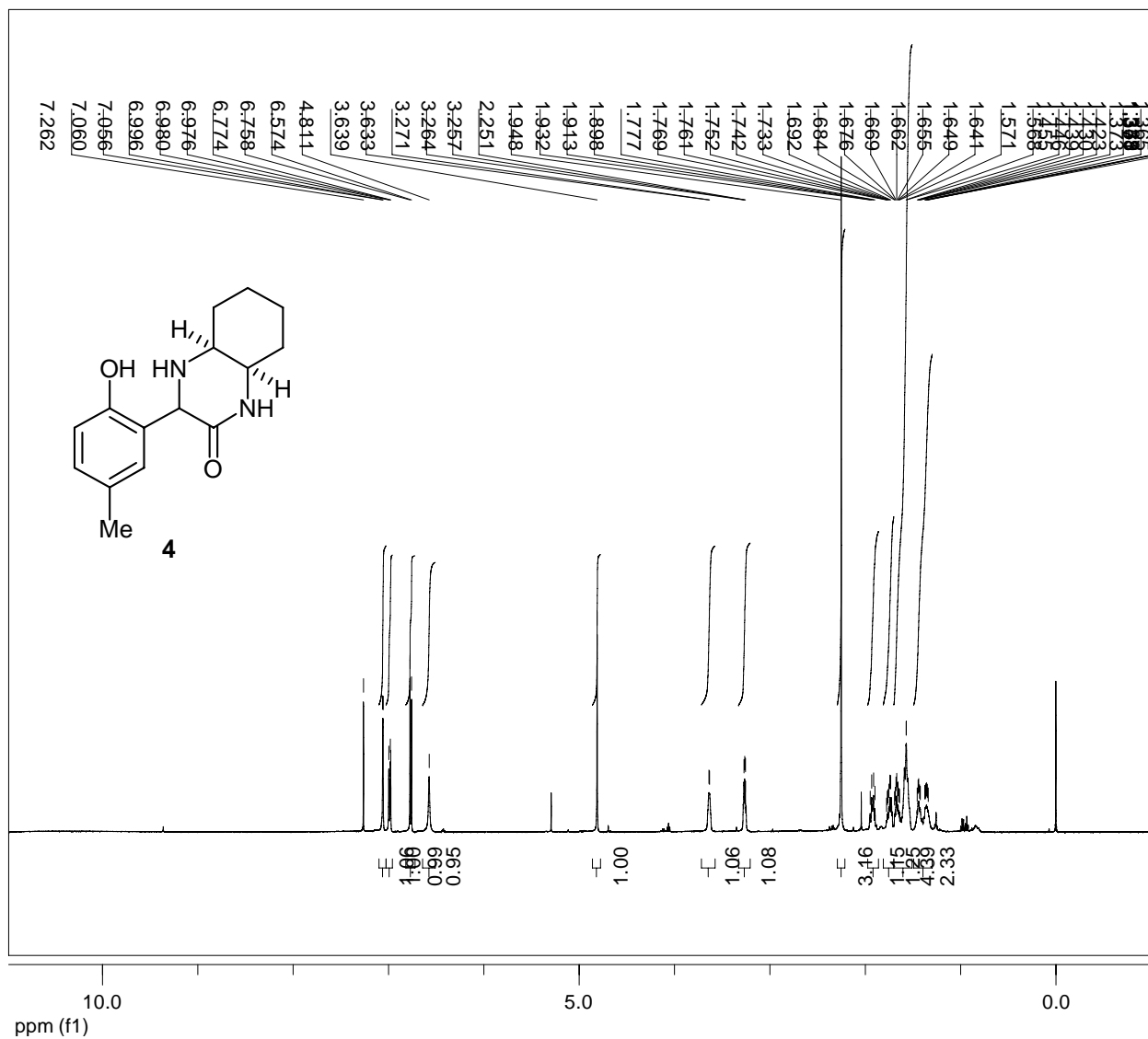
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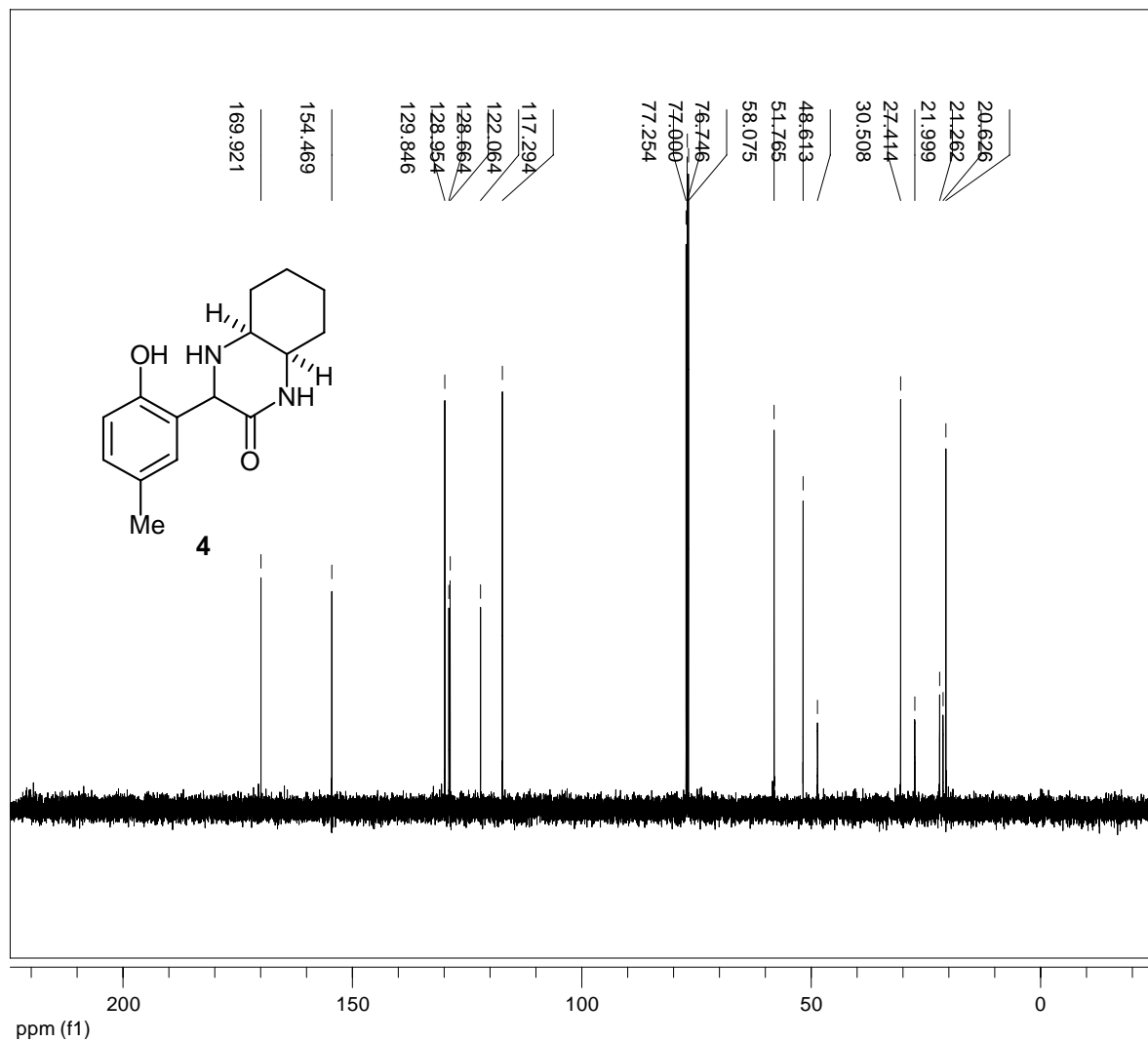
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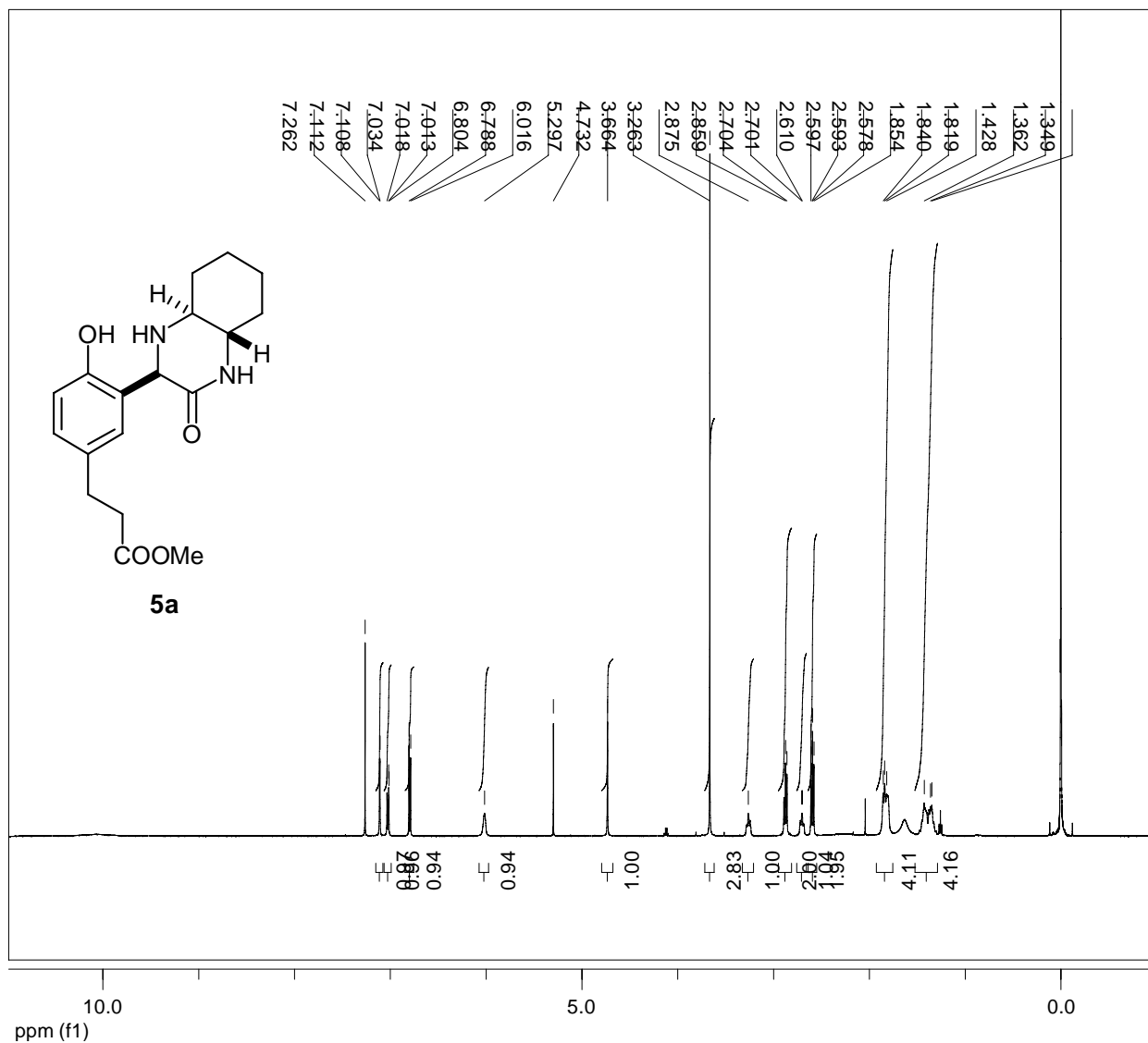
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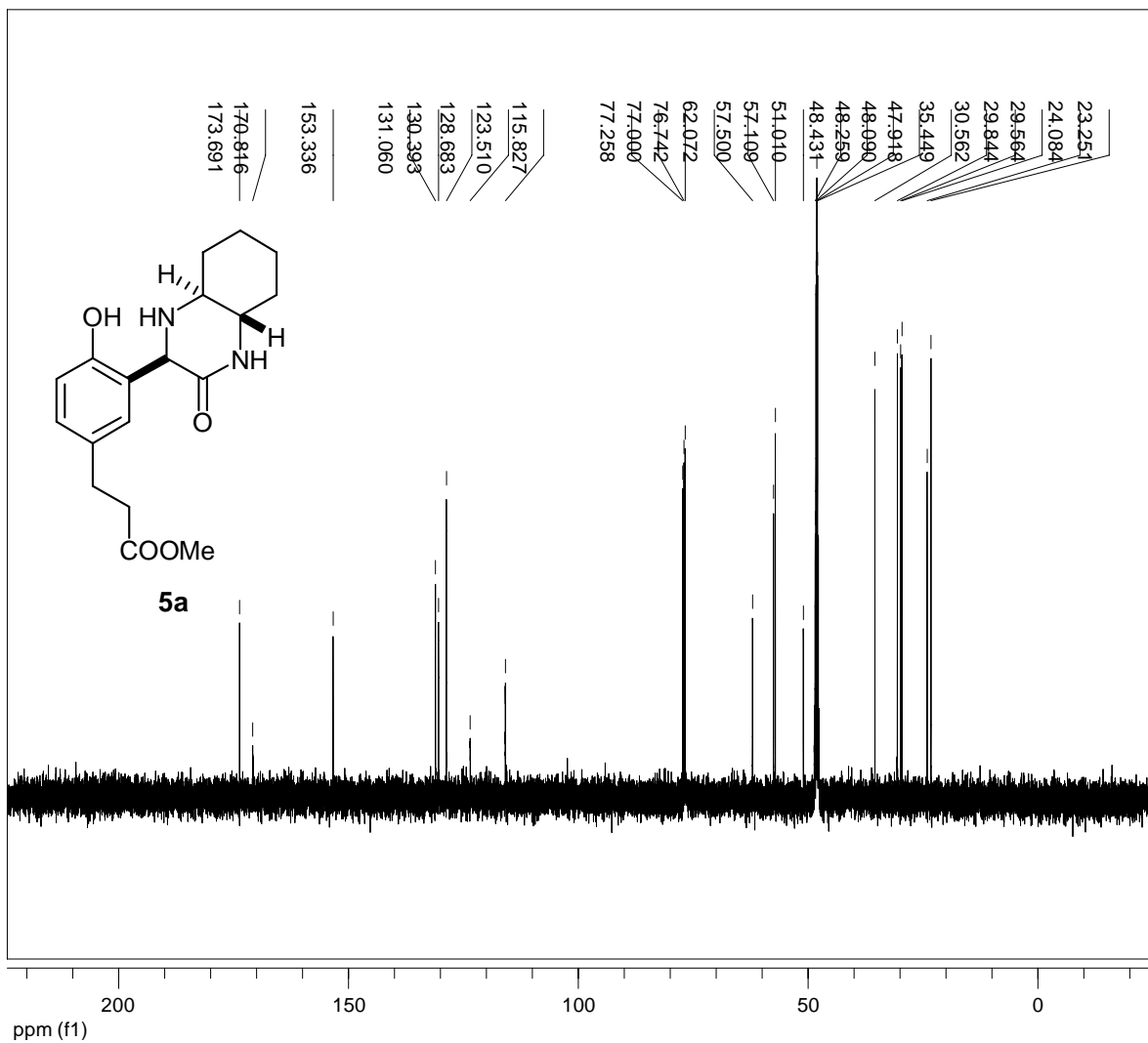
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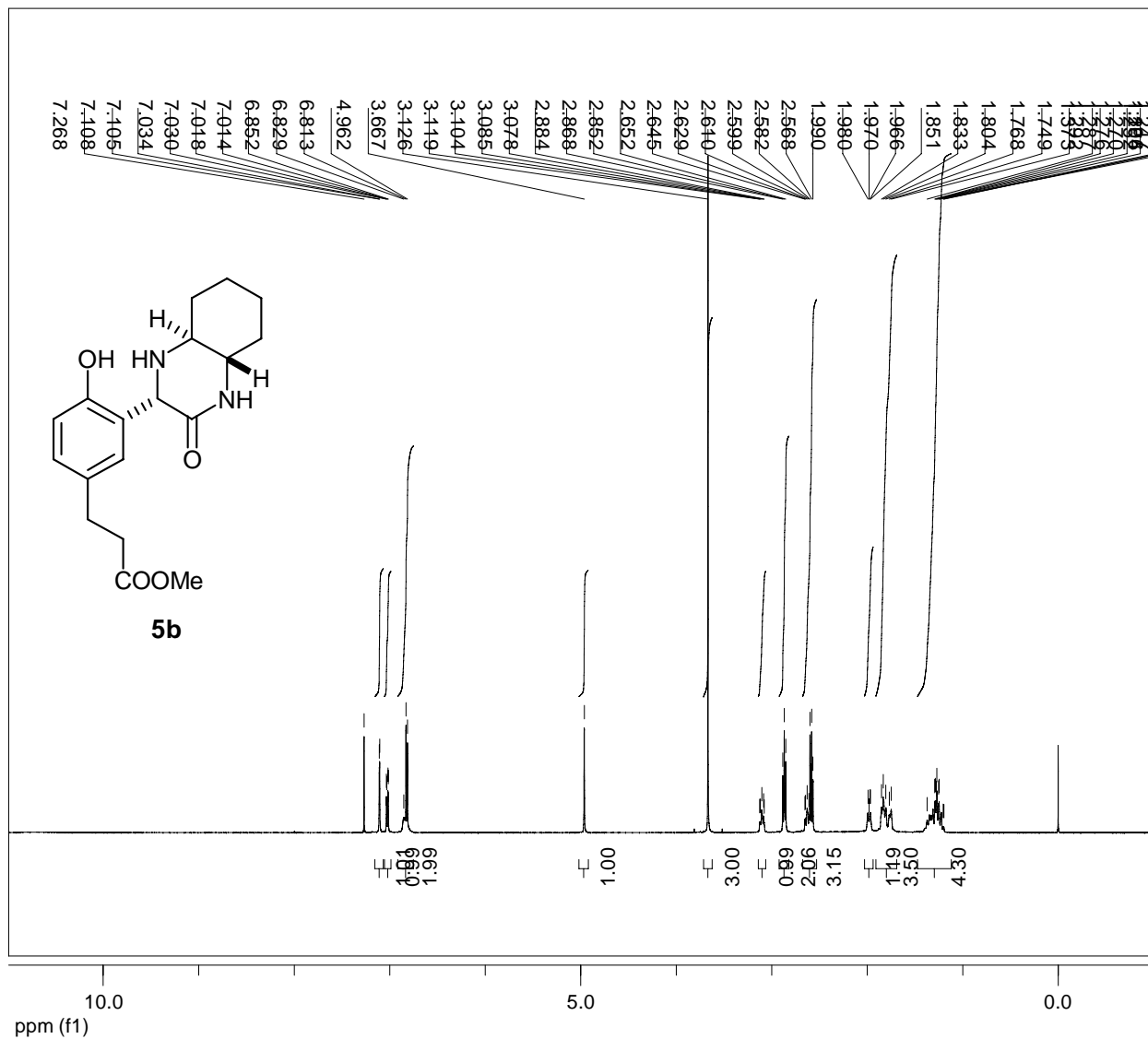
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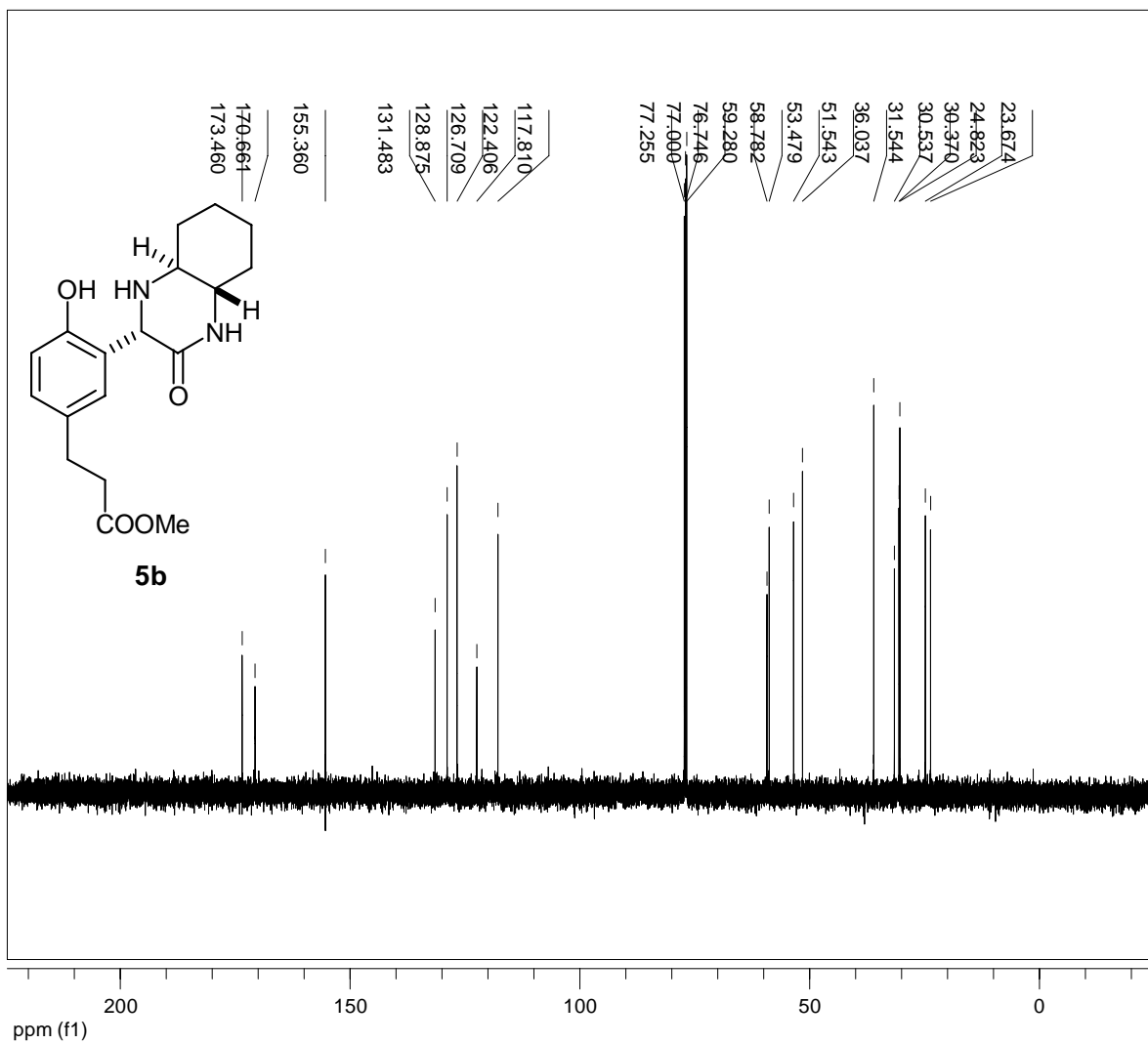
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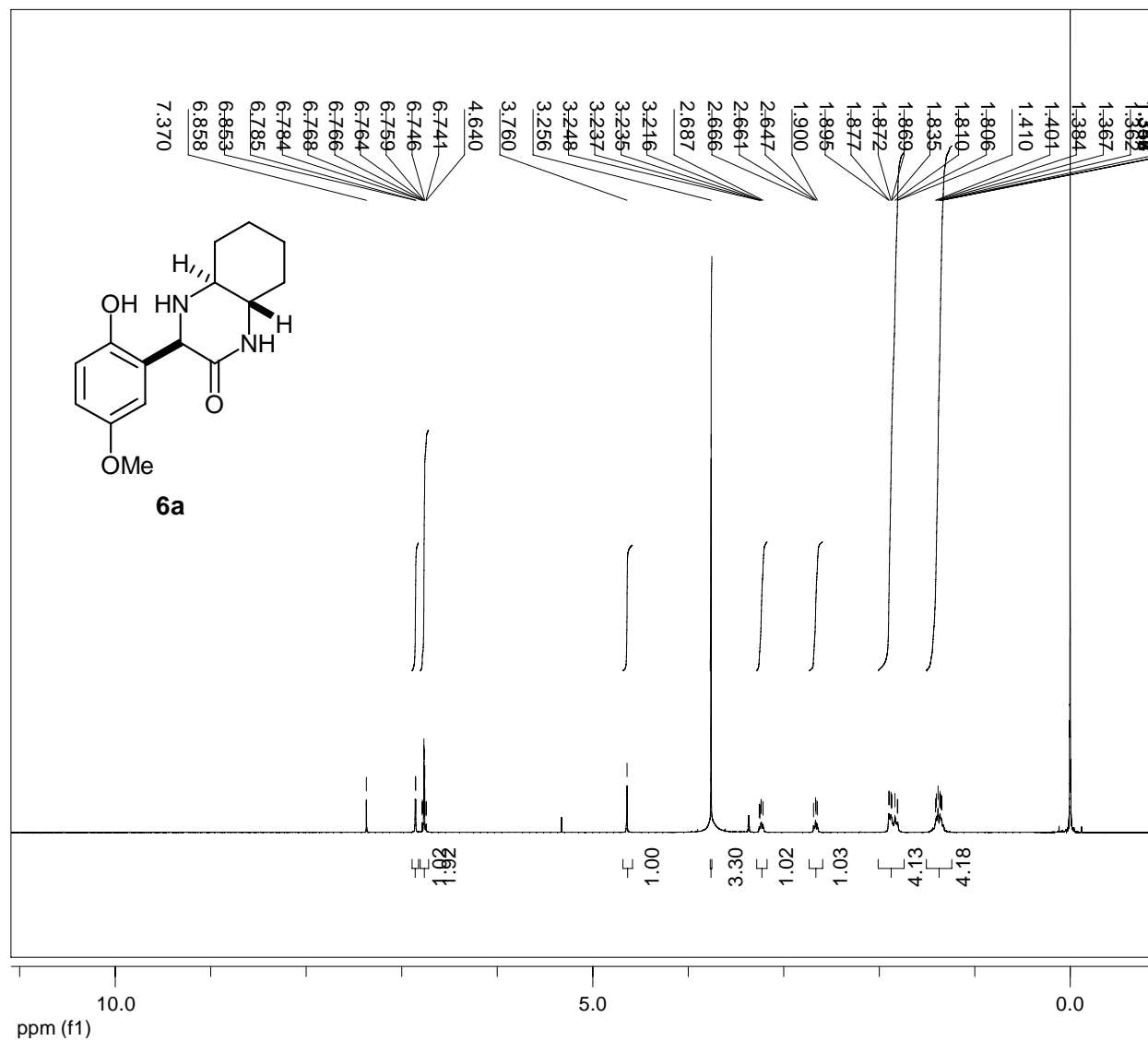
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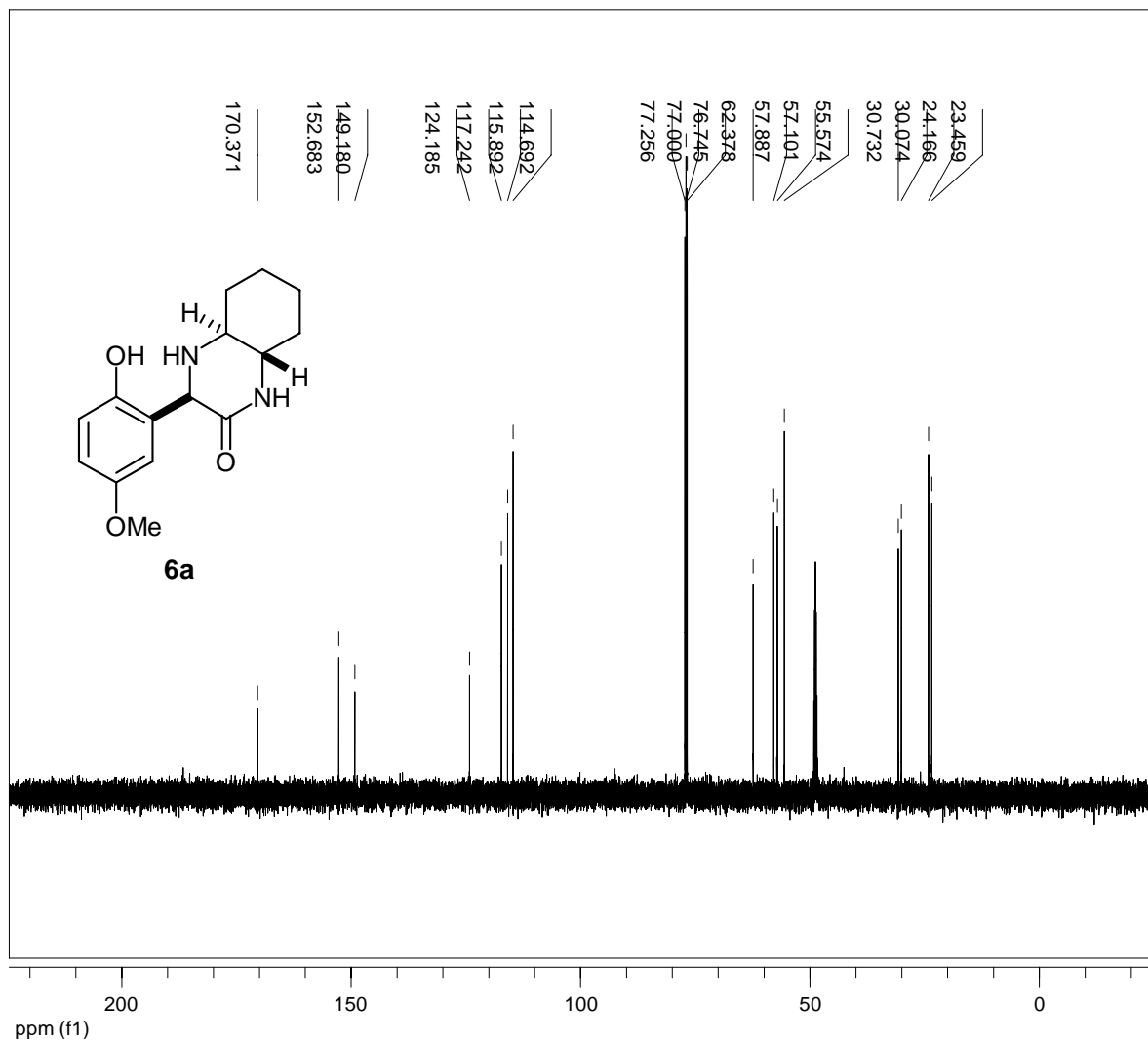
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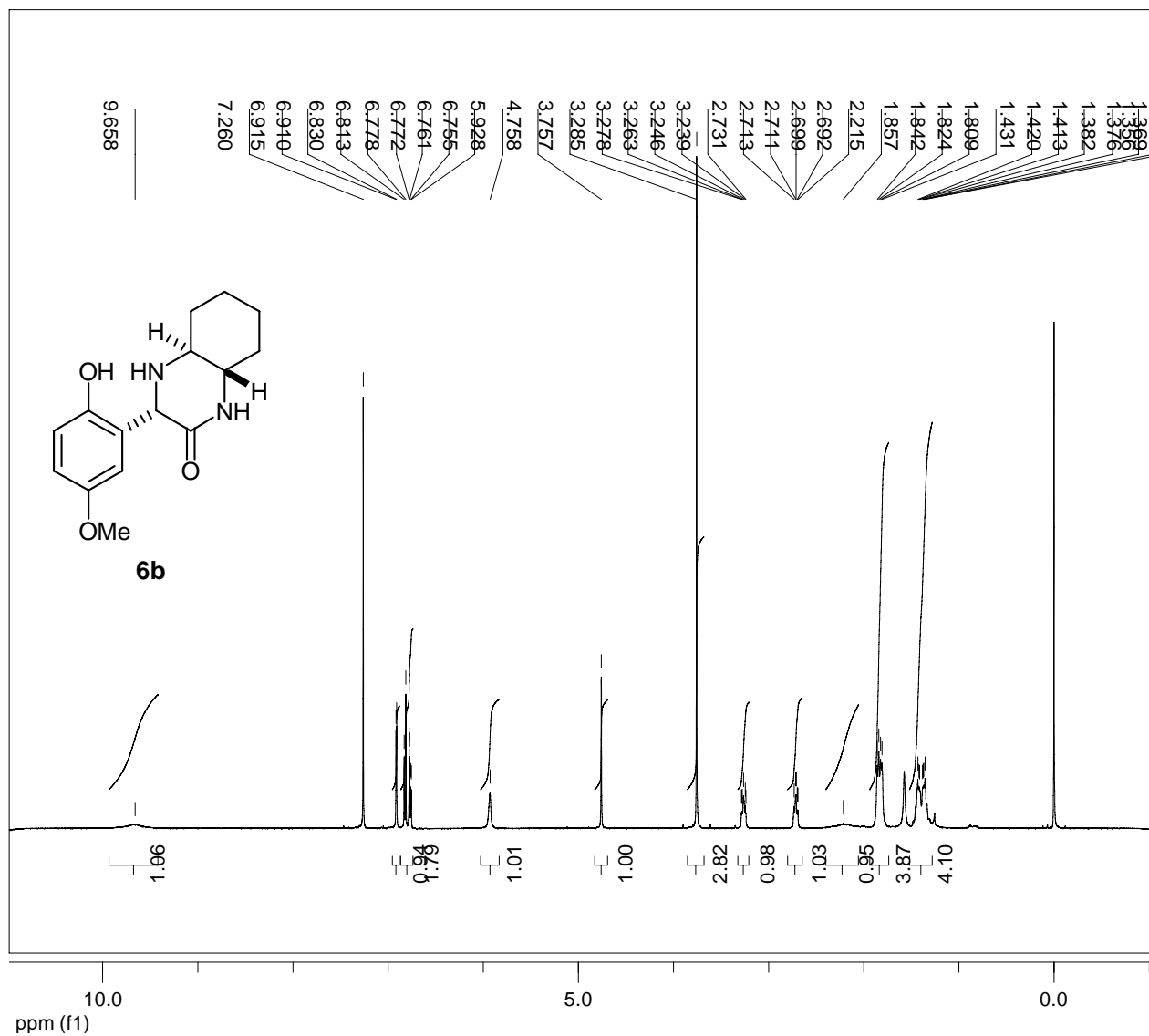
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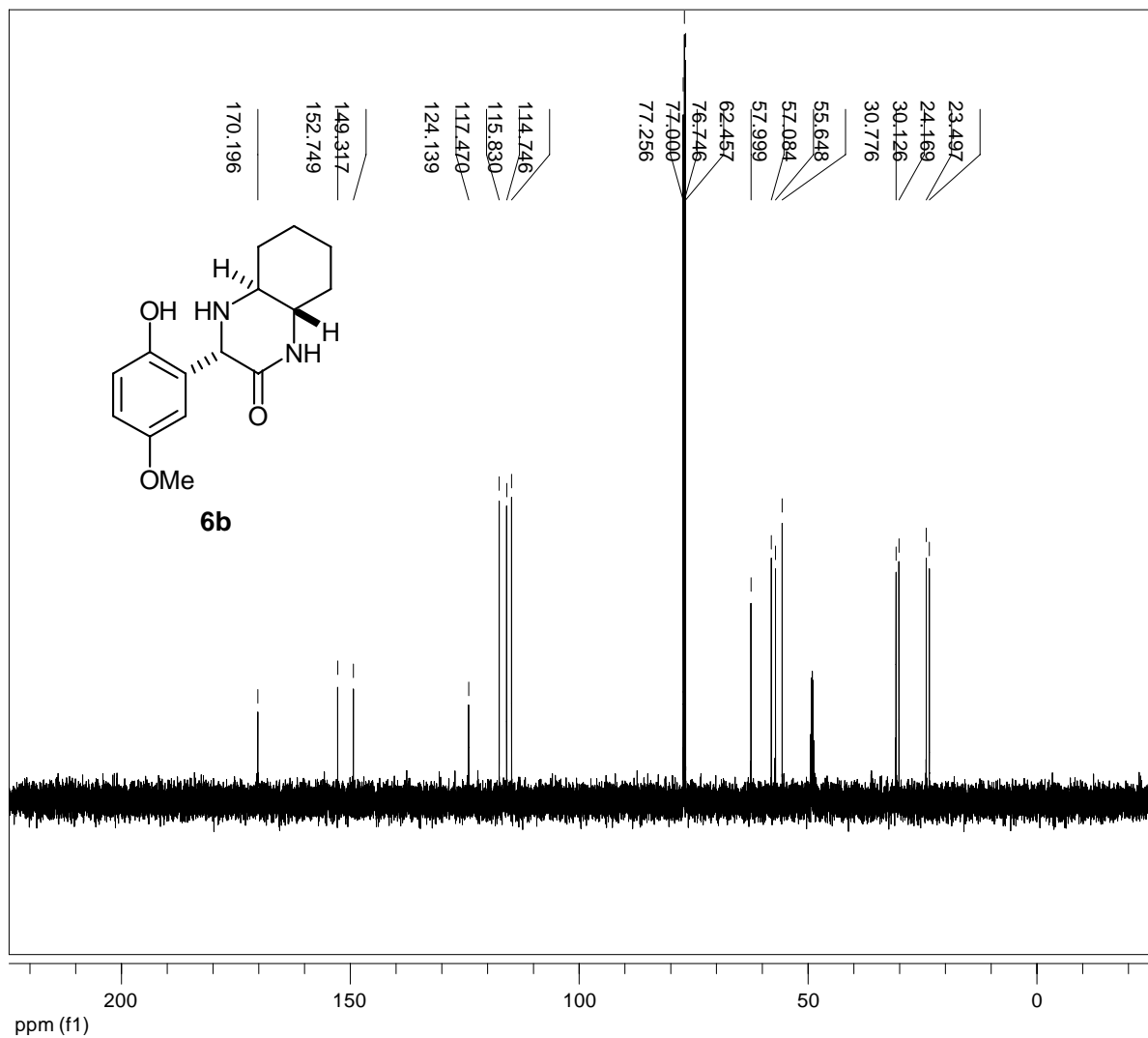
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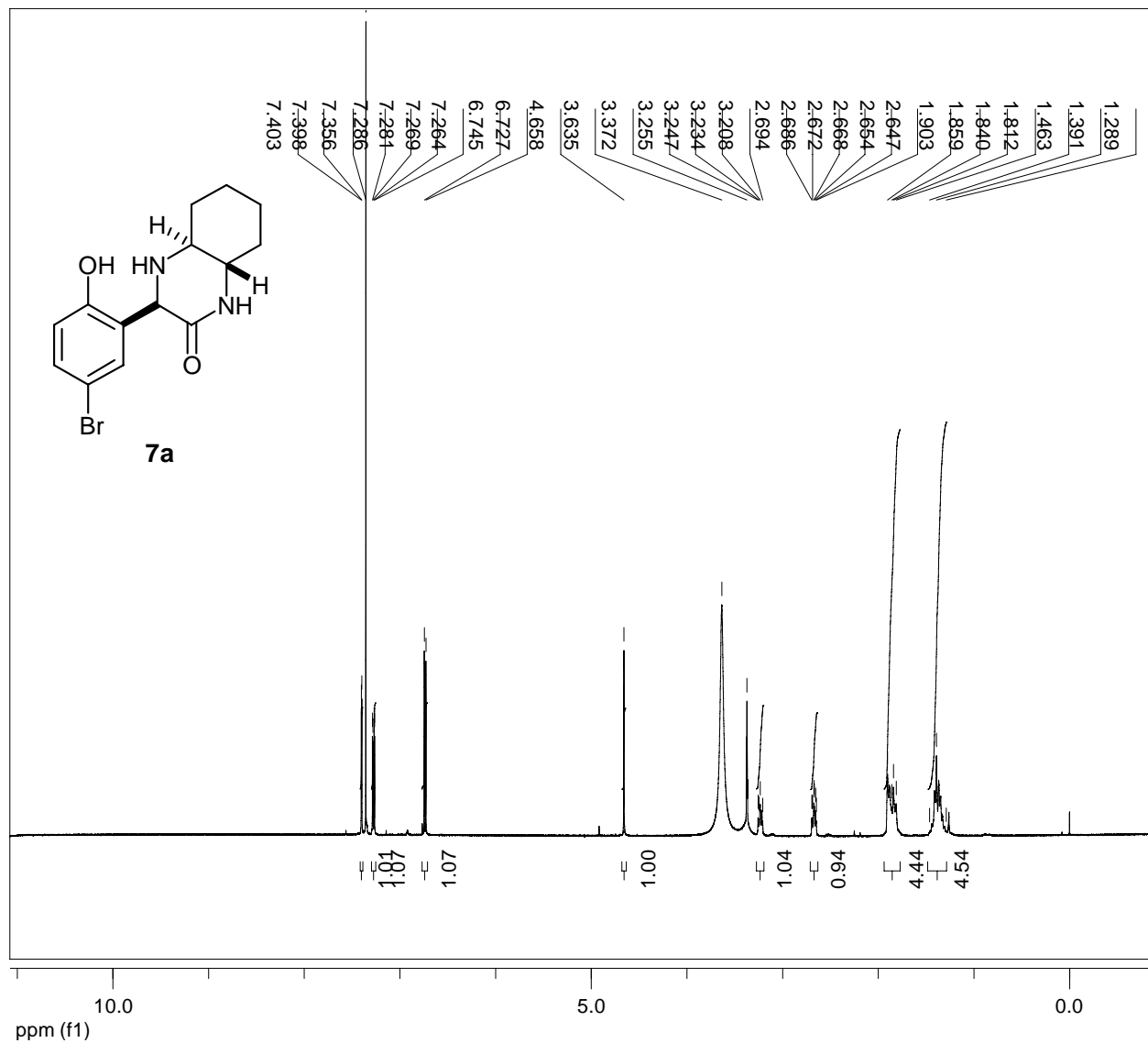
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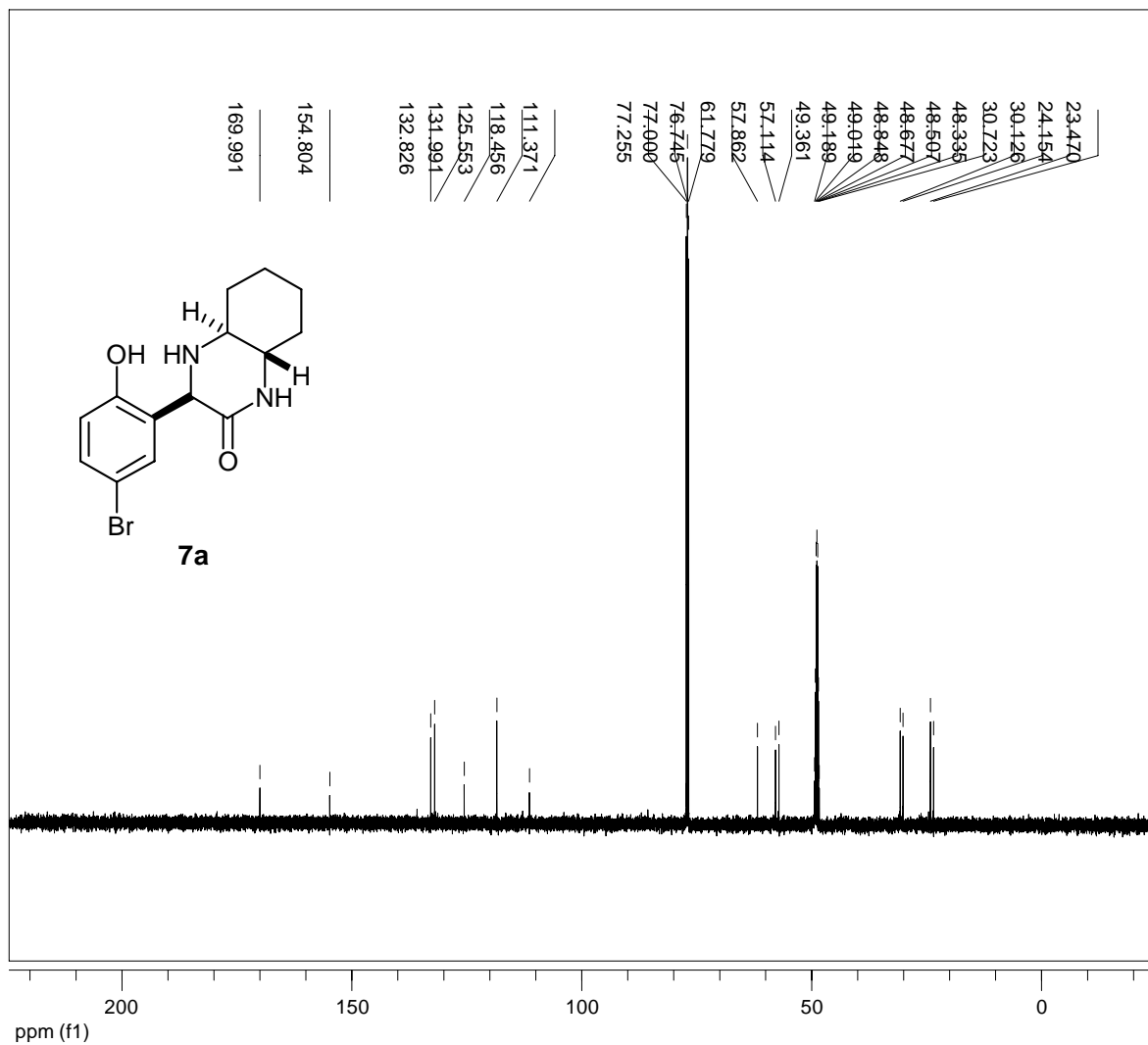
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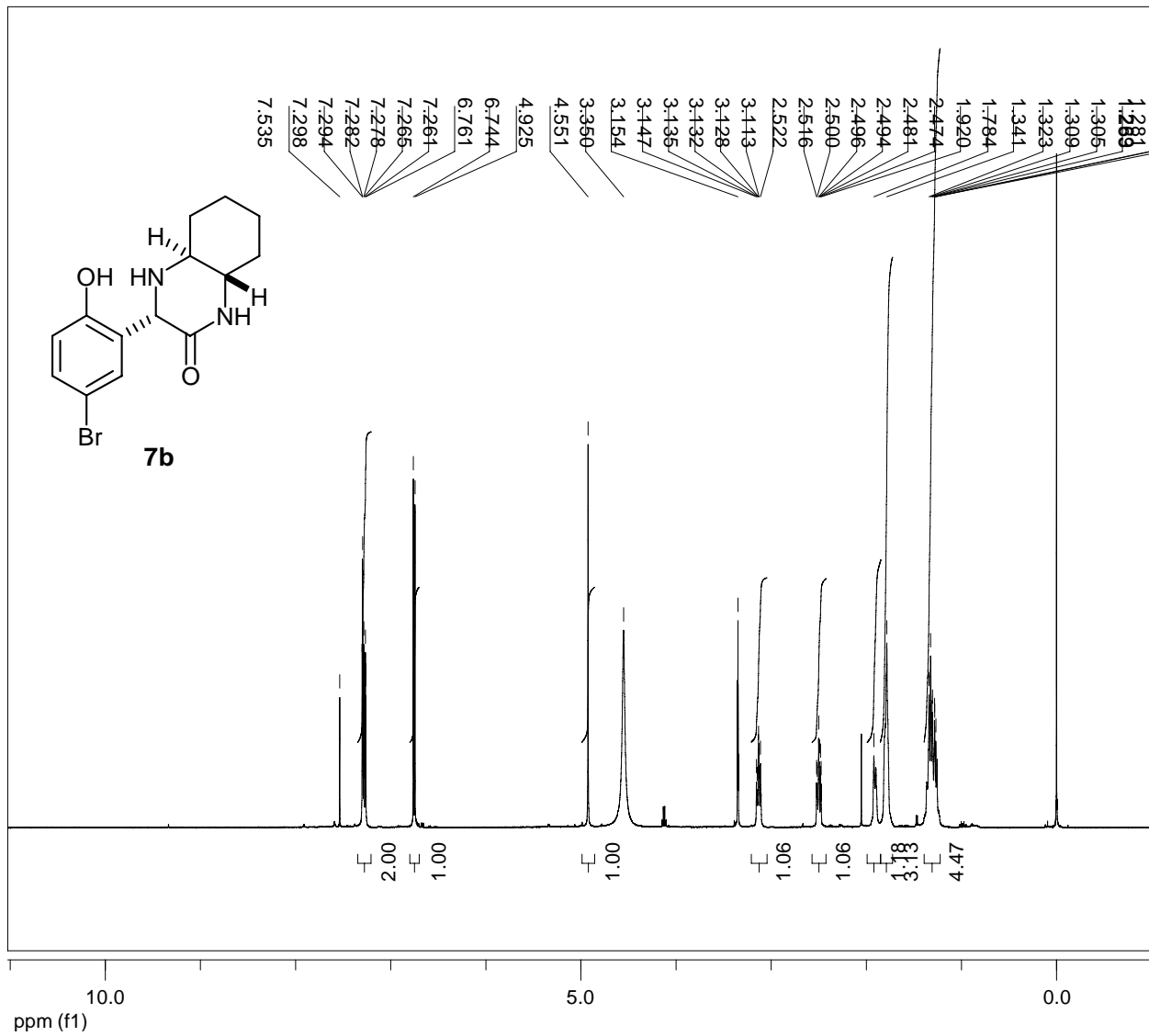
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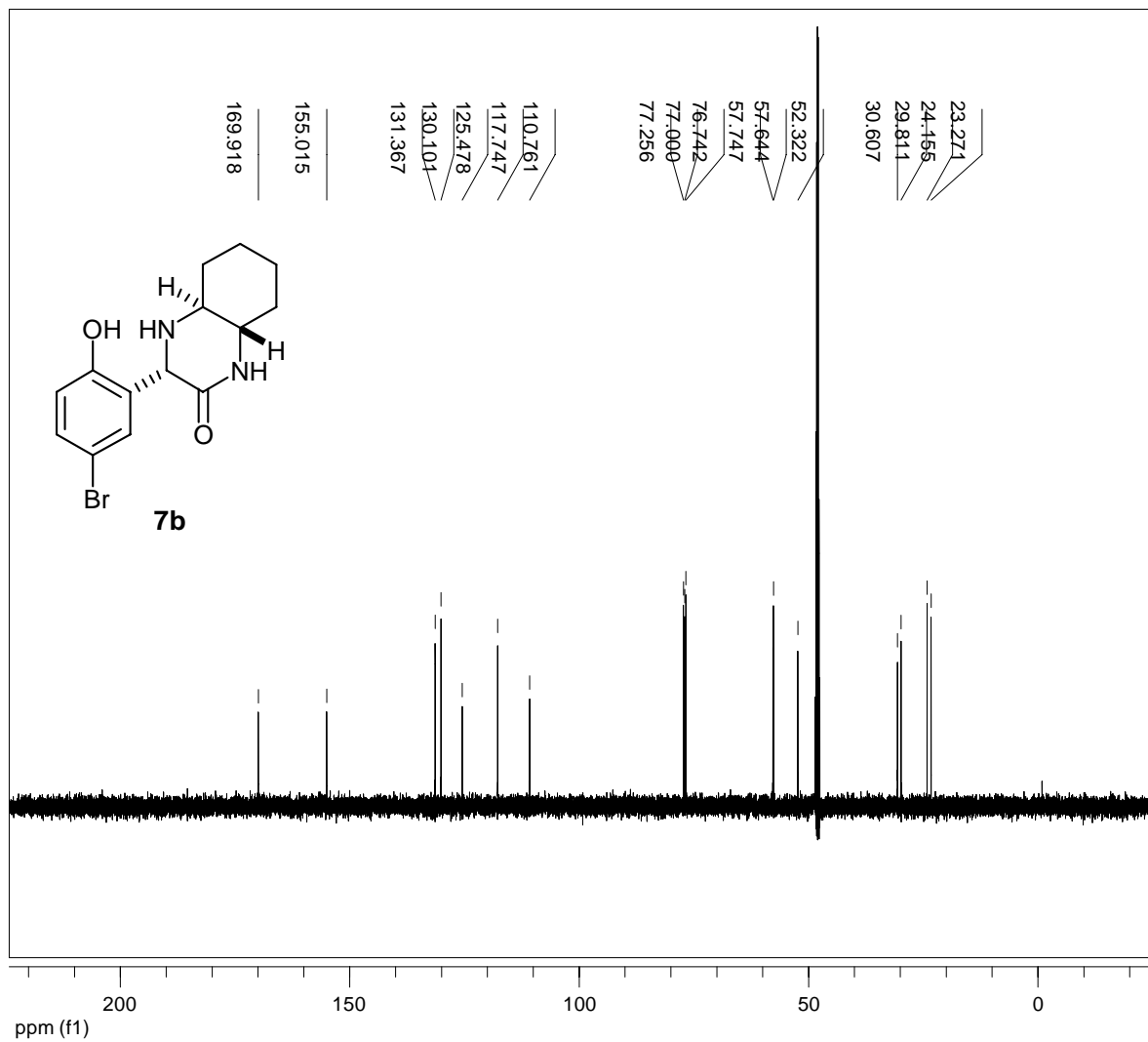
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1

**Spectrum Title:**

C-13-APT, BBO Probe, DRX-500, using deptq-135 pulse, 5-2-05

**Frequency (MHz):**

(f1) 125.770

**Original Points Count:**

(f1) 16384

**Actual Points Count:**

(f1) 32768

**Acquisition Time (sec):**

(f1) 0.5210

**Spectral Width (ppm):**

(f1) 250.031

**Pulse Program:**

ZGPC45

**Temperature:**

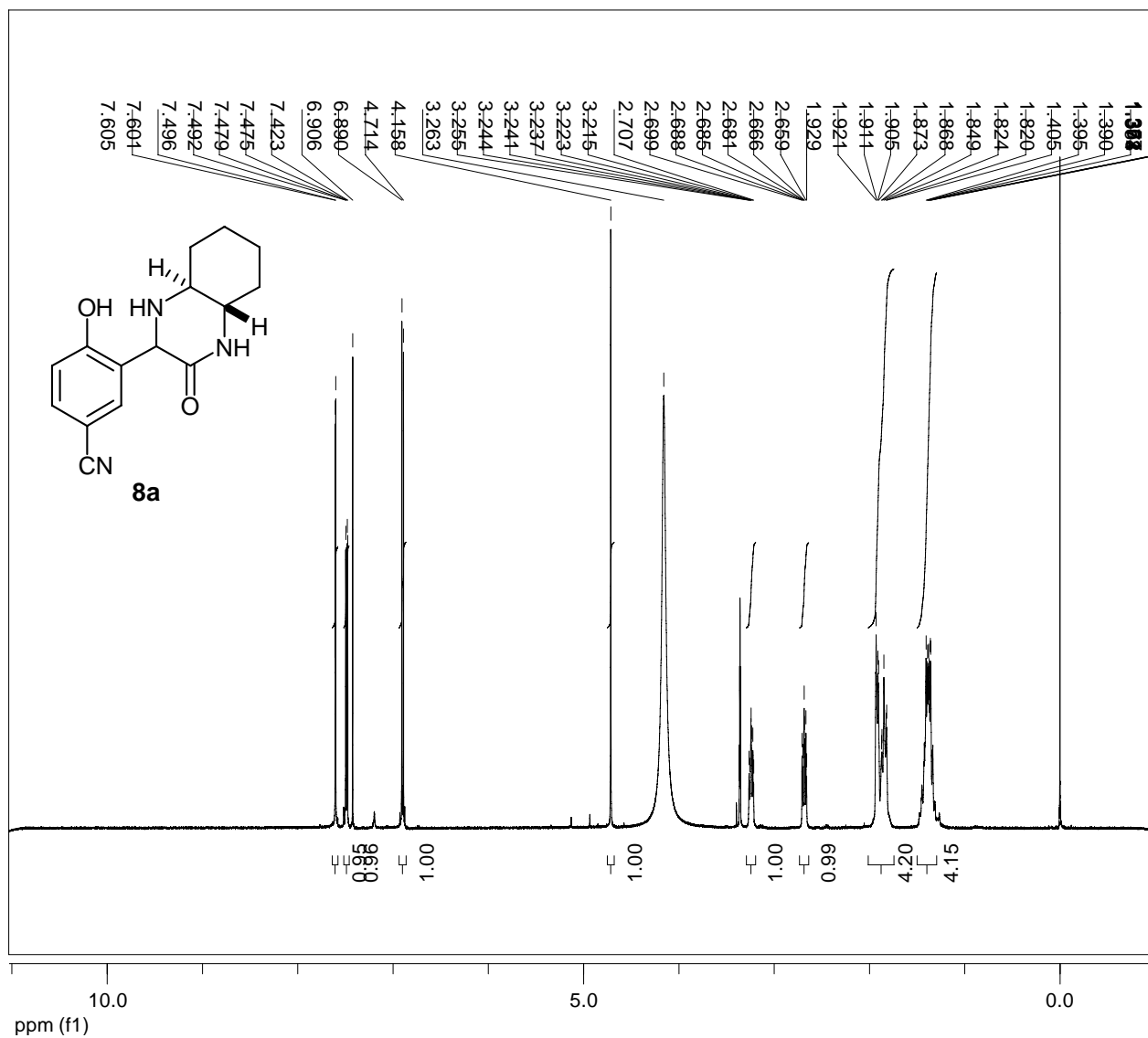
299.16

**Number of Scans:**

46

**Acq. Date:**

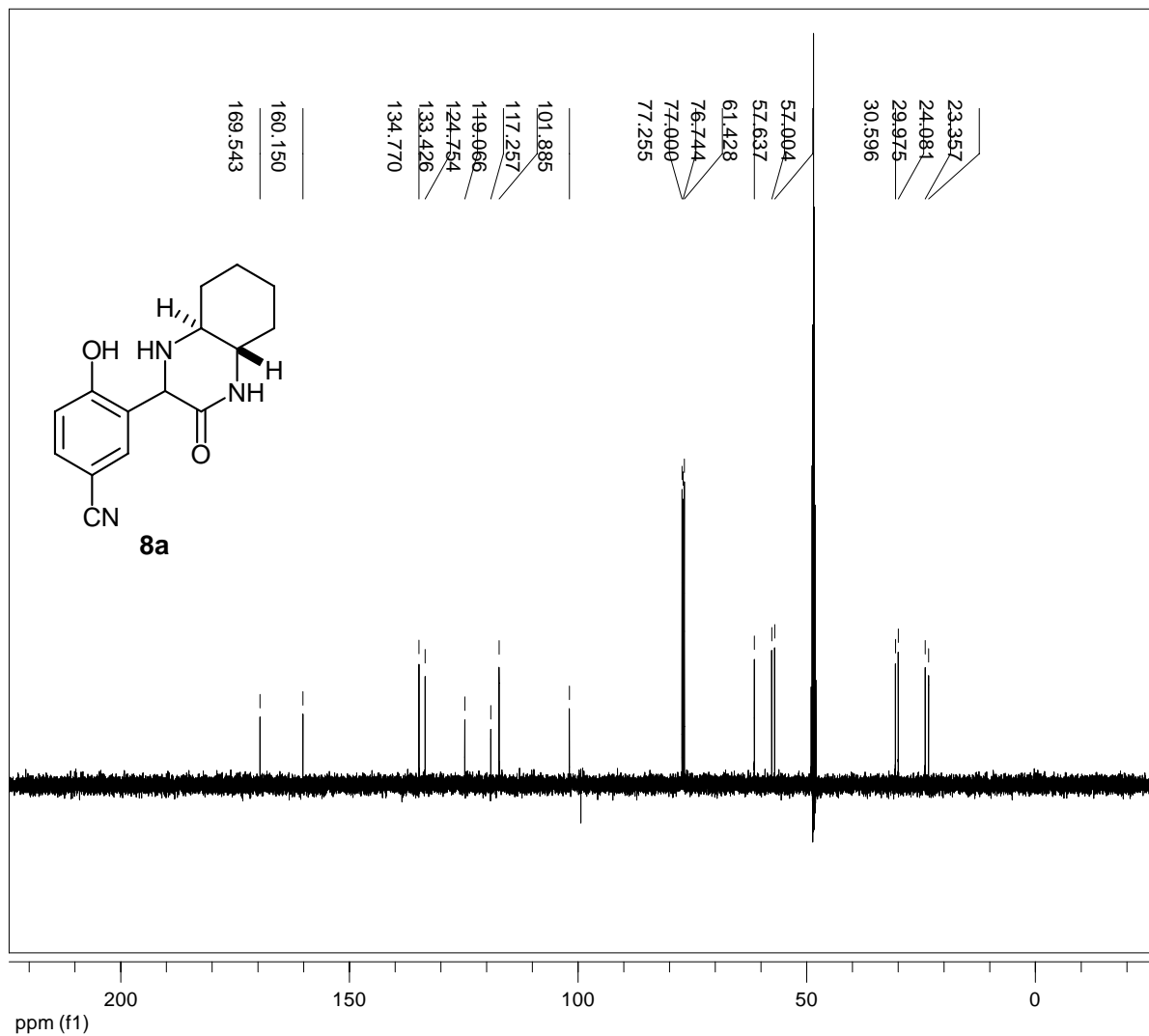
Mon Sep 17 03:44:28 PM



**Date:**  
21 Nov 2007  
**Document's Title:**  
1

**Spectrum Title:**

**Frequency (MHz):**  
(f1) 500.133  
**Original Points Count:**  
(f1) 16384  
**Actual Points Count:**  
(f1) 32768  
**Acquisition Time (sec):**  
(f1) 2.7263  
**Spectral Width (ppm):**  
(f1) 12.016  
**Pulse Program:**  
ZG30  
**Temperature:**  
299.16  
**Number of Scans:**  
9  
**Acq. Date:**  
Fri Nov 09 09:37:54 PM



**Date:**  
21 Nov 2007

**Document's Title:**  
1

**Spectrum Title:**  
C-13-APT, BBO Probe, DRX-500, using deptq-135 pulse, 5-2-05

**Frequency (MHz):**  
(f1) 125.770

**Original Points Count:**  
(f1) 16384

**Actual Points Count:**  
(f1) 32768

**Acquisition Time (sec):**  
(f1) 0.5210

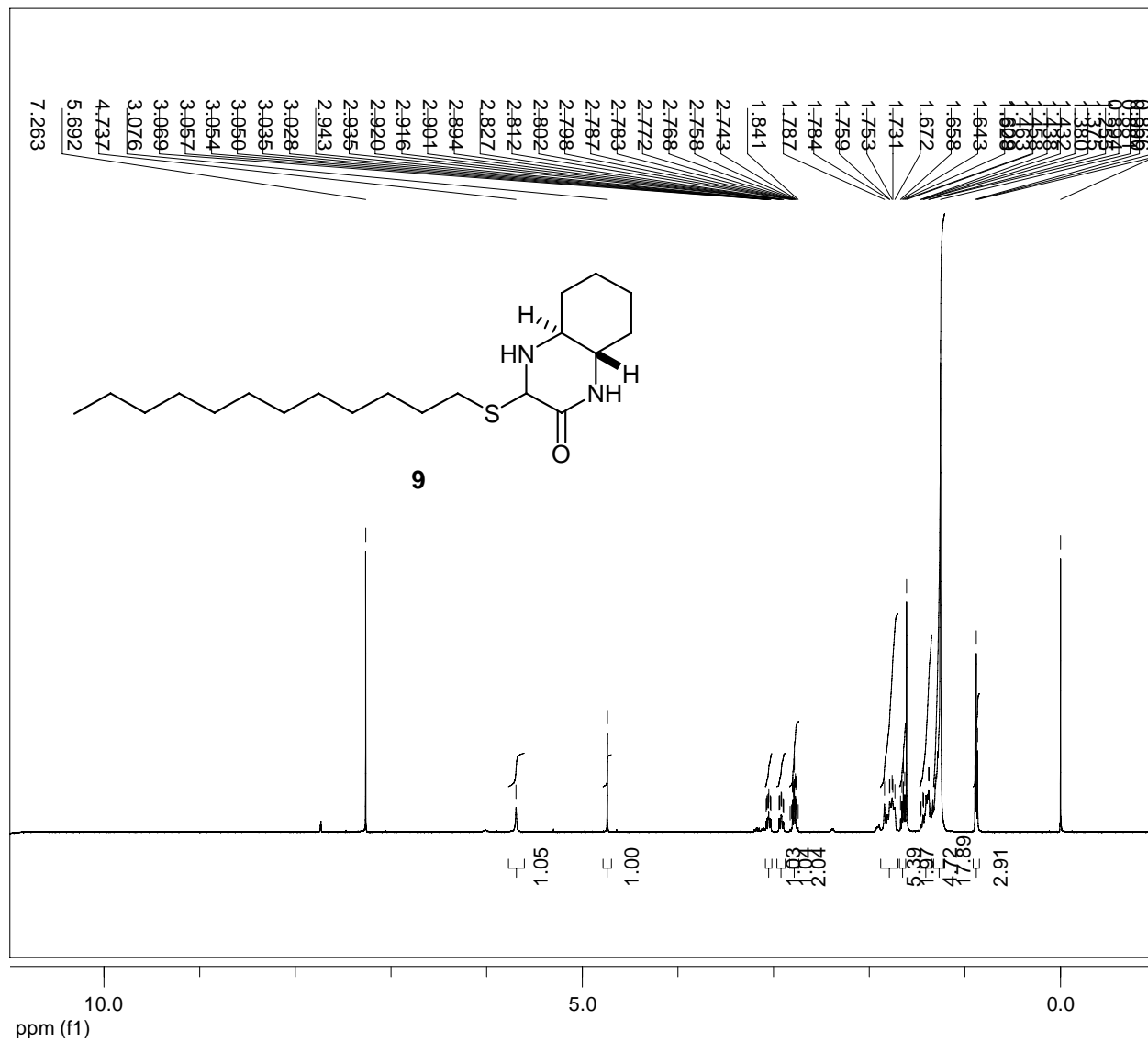
**Spectral Width (ppm):**  
(f1) 250.031

**Pulse Program:**  
ZGPG45

**Temperature:**  
299.16

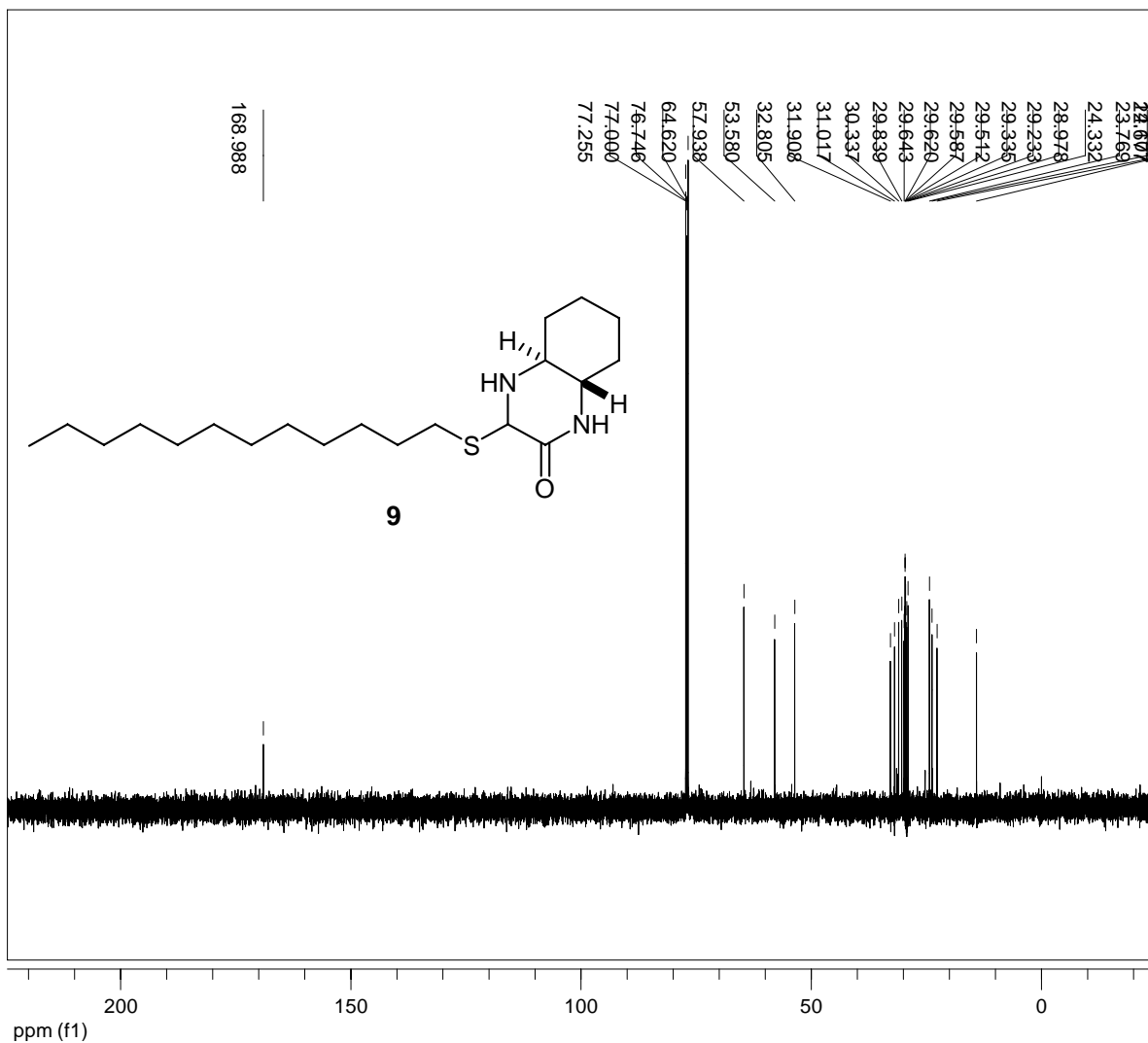
**Number of Scans:**  
120

**Acq. Date:**  
Fri Nov 09 09:39:52 PM



**Date:**  
 11 Dec 2007  
**Document's Title:**  
 1  
**Spectrum Title:**  
  
**Frequency (MHz):**  
 (f1) 500.133  
**Original Points Count:**  
 (f1) 16384  
**Actual Points Count:**  
 (f1) 32768  
**Acquisition Time (sec):**  
 (f1) 2.7263  
**Spectral Width (ppm):**  
 (f1) 12.016  
**Pulse Program:**  
 ZG30  
**Temperature:**  
 298.16  
**Number of Scans:**  
 16  
**Acq. Date:**  
 Wed Dec 05 12:10:20 AM





**Date:**

11 Dec 2007

**Document's Title:**

1

**Spectrum Title:**

C-13-APT, BBO Probe, DRX-500, using deptq-135 pulse, 5-2-05

**Frequency (MHz):**

(f1) 125.770

**Original Points Count:**

(f1) 16384

**Actual Points Count:**

(f1) 32768

**Acquisition Time (sec):**

(f1) 0.5210

**Spectral Width (ppm):**

(f1) 250.031

**Pulse Program:**

ZGPG45

**Temperature:**

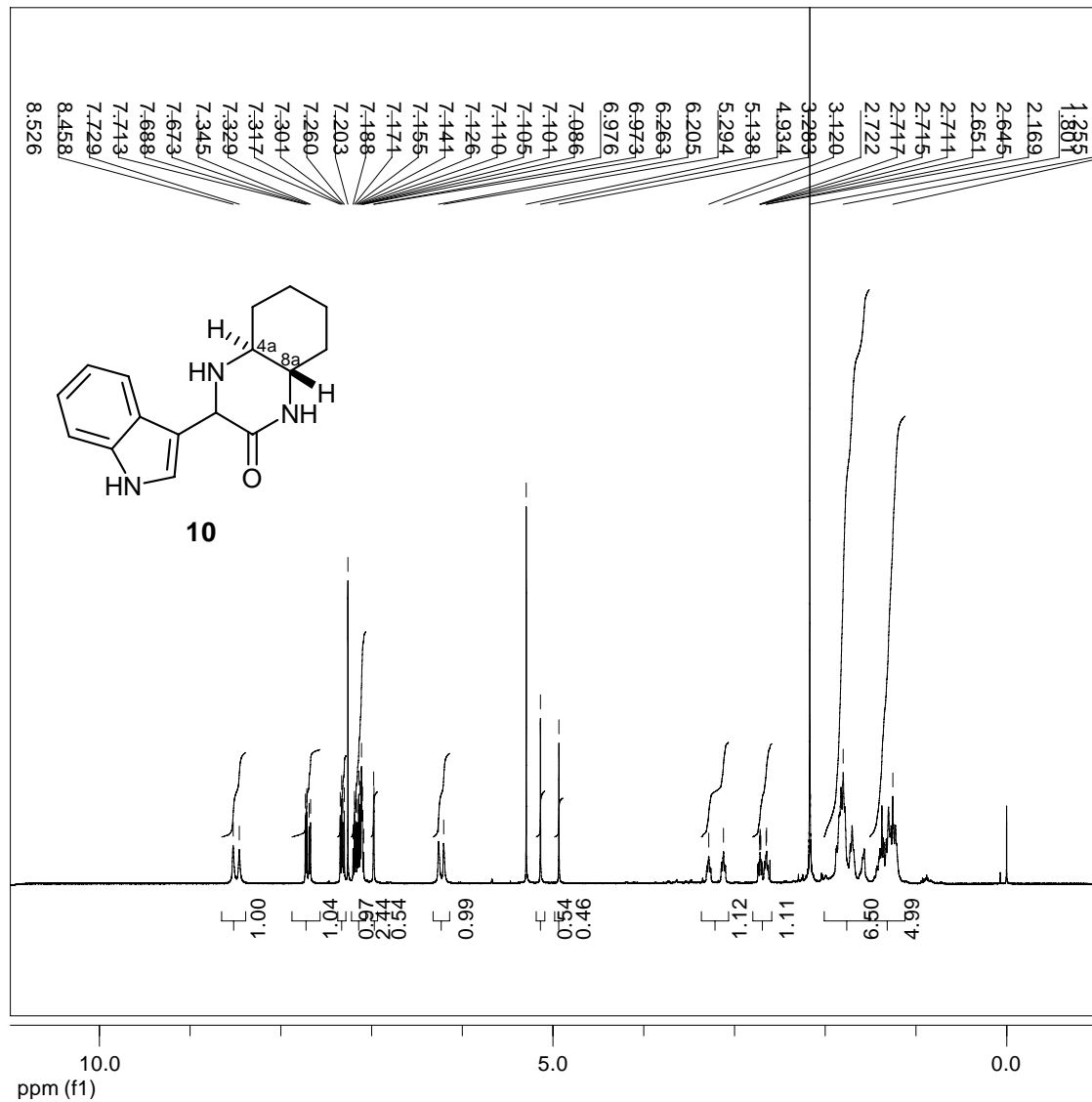
299.16

**Number of Scans:**

160

**Acq. Date:**

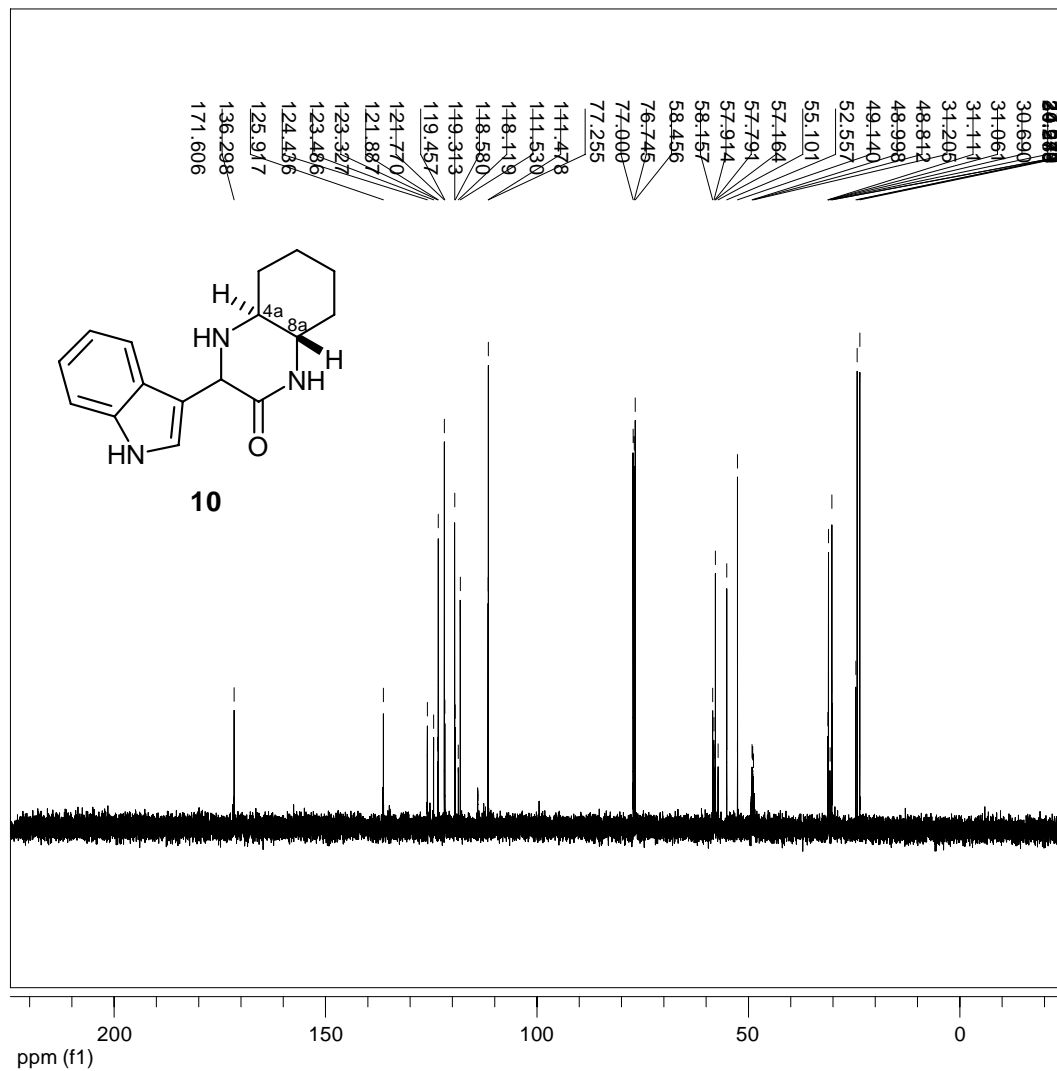
Wed Dec 05 12:12:45 AM



**Date:**  
14 Mar 2008  
**Document's Title:**  
1

**Spectrum Title:**

**Frequency (MHz):**  
(f1) 500.133  
**Original Points Count:**  
(f1) 16384  
**Actual Points Count:**  
(f1) 32768  
**Acquisition Time (sec):**  
(f1) 2.7263  
**Spectral Width (ppm):**  
(f1) 12.016  
**Pulse Program:**  
ZG30  
**Temperature:**  
298.16  
**Number of Scans:**  
16  
**Acq. Date:**  
Mon Mar 03 04:24:51 PM



**Date:**

14 Mar 2008

**Document's Title:**

1

**Spectrum Title:**

C-13-APT, BBO Probe, DRX-500, using deptq-135 pulse, 5-2-06

**Frequency (MHz):**

(f1) 125.770

**Original Points Count:**

(f1) 16384

**Actual Points Count:**

(f1) 32768

**Acquisition Time (sec):**

(f1) 0.5210

**Spectral Width (ppm):**

(f1) 250.031

**Pulse Program:**

ZGPG45

**Temperature:**

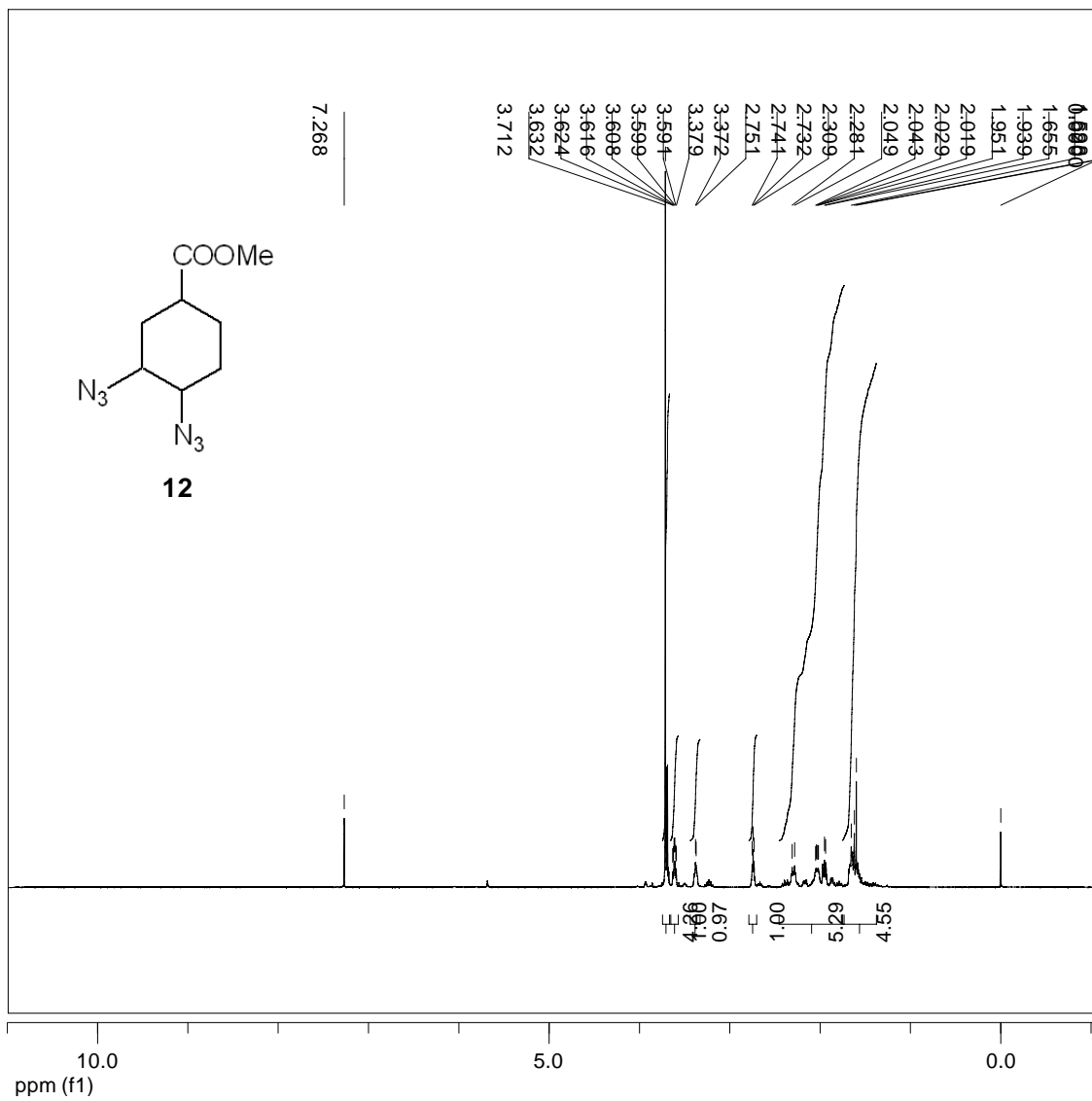
298.16

**Number of Scans:**

240

**Acq. Date:**

Mon Mar 03 07:36:38 PM



**Date:**

14 Mar 2008

**Document's Title:**

1

**Spectrum Title:**

**Frequency (MHz):**

(f1) 500.133

**Original Points Count:**

(f1) 16384

**Actual Points Count:**

(f1) 32768

**Acquisition Time (sec):**

(f1) 2.7263

**Spectral Width (ppm):**

(f1) 12.016

**Pulse Program:**

ZG30

**Temperature:**

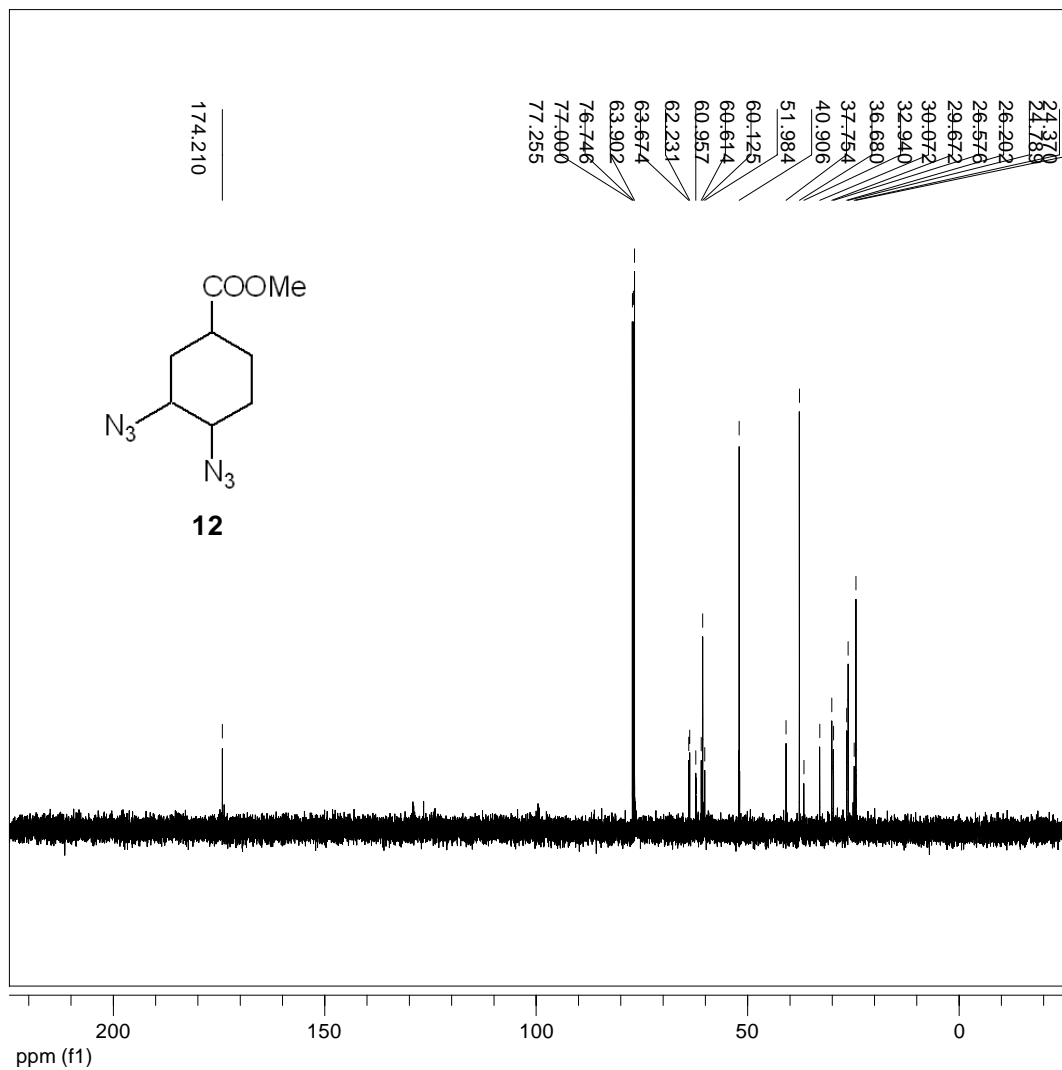
299.16

**Number of Scans:**

16

**Acq. Date:**

Fri Feb 08 10:58:01 AM



**Date:**  
14 Mar 2008

**Document's Title:**  
1

**Spectrum Title:**  
C-13-APT, BBO Probe, DRX-500, using deptq-135 pulse, 5-2-08

**Frequency (MHz):**  
(f1) 125.770

**Original Points Count:**  
(f1) 16384

**Actual Points Count:**  
(f1) 32768

**Acquisition Time (sec):**  
(f1) 0.5210

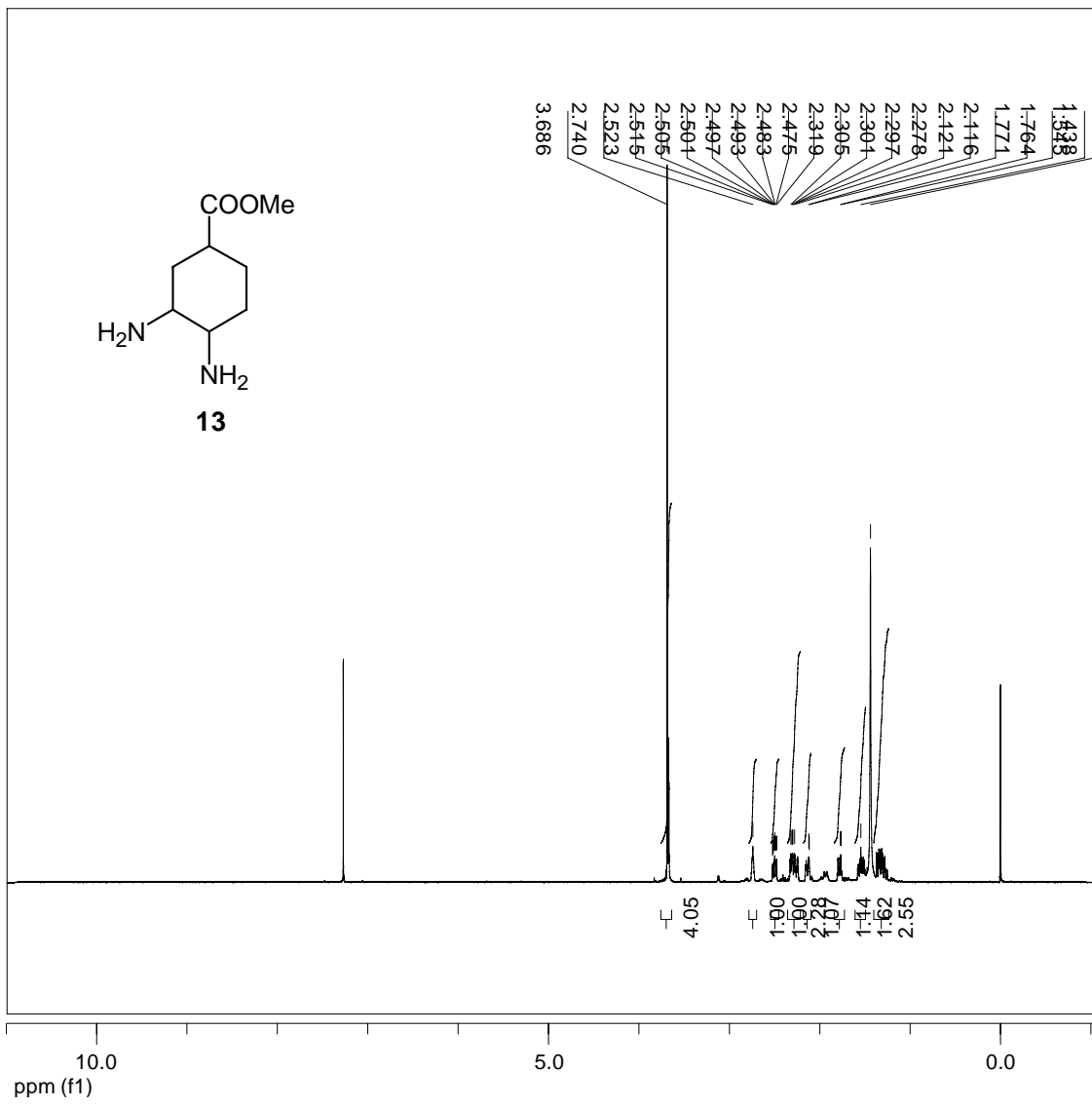
**Spectral Width (ppm):**  
(f1) 250.031

**Pulse Program:**  
ZGPG45

**Temperature:**  
299.16

**Number of Scans:**  
126

**Acq. Date:**  
Fri Feb 08 11:00:42 AM



**Date:**  
14 Mar 2008

**Document's Title:**  
1

**Spectrum Title:**

**Frequency (MHz):**  
(f1) 500.133

**Original Points Count:**  
(f1) 16384

**Actual Points Count:**  
(f1) 32768

**Acquisition Time (sec):**  
(f1) 2.7263

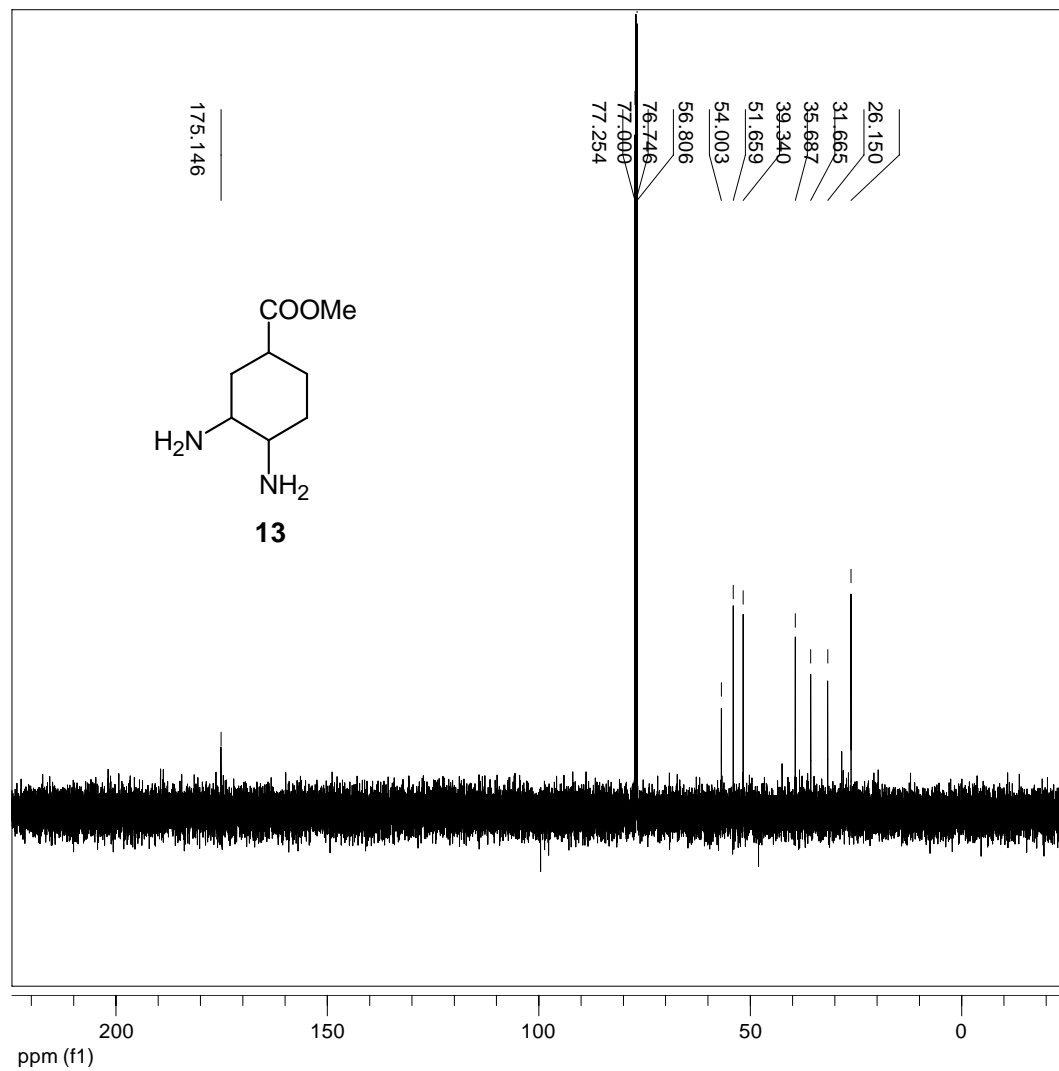
**Spectral Width (ppm):**  
(f1) 12.016

**Pulse Program:**  
ZG30

**Temperature:**  
299.16

**Number of Scans:**  
16

**Acq. Date:**  
Fri Feb 08 07:21:37 PM



**Date:**

14 Mar 2008

**Document's Title:**

1

**Spectrum Title:**

C-13-APT, BBO Probe, DRX-500, using deptq-135 pulse, 5-2-06

**Frequency (MHz):**

(f1) 125.770

**Original Points Count:**

(f1) 16384

**Actual Points Count:**

(f1) 32768

**Acquisition Time (sec):**

(f1) 0.5210

**Spectral Width (ppm):**

(f1) 250.031

**Pulse Program:**

ZGPG45

**Temperature:**

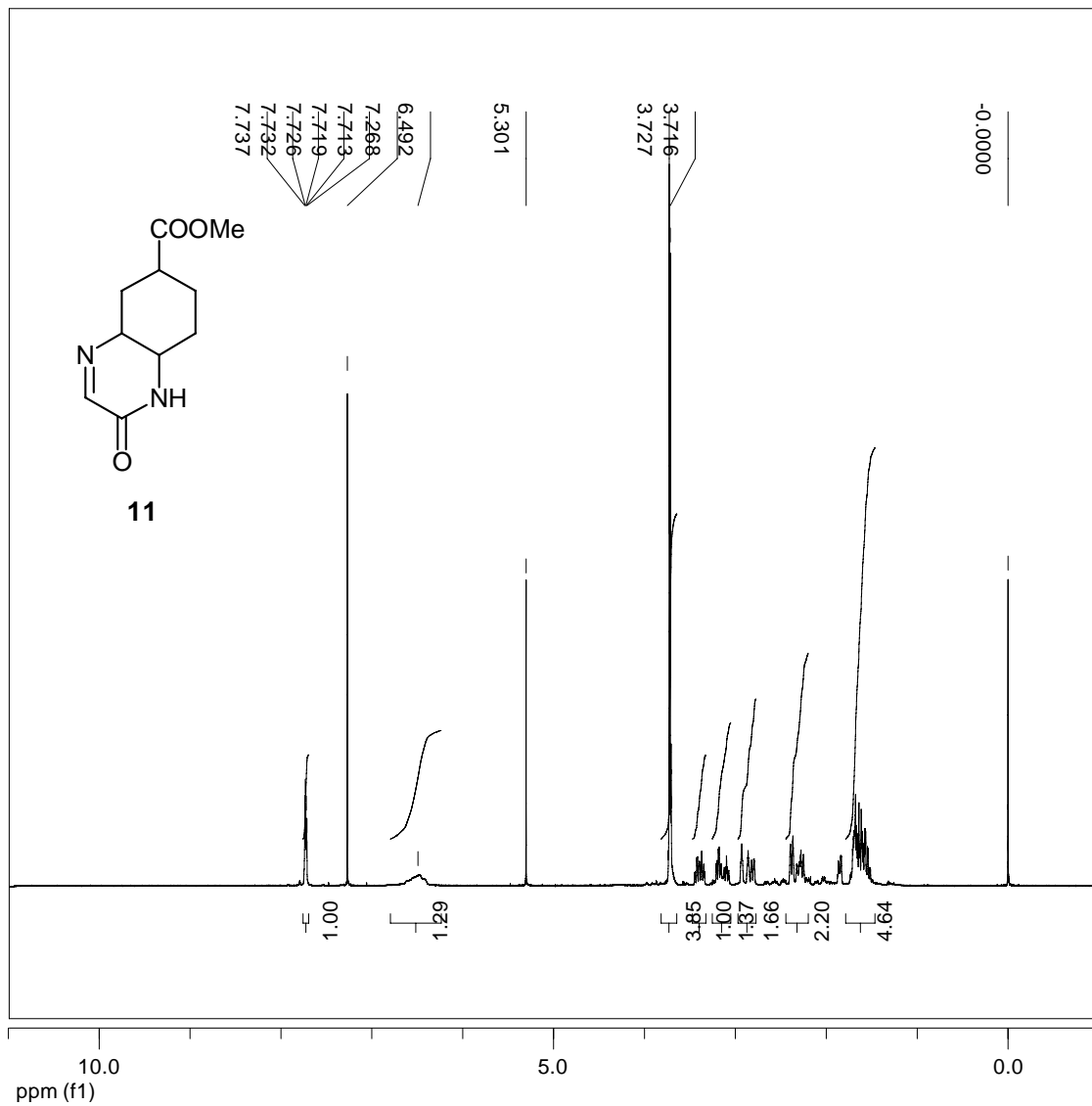
299.16

**Number of Scans:**

80

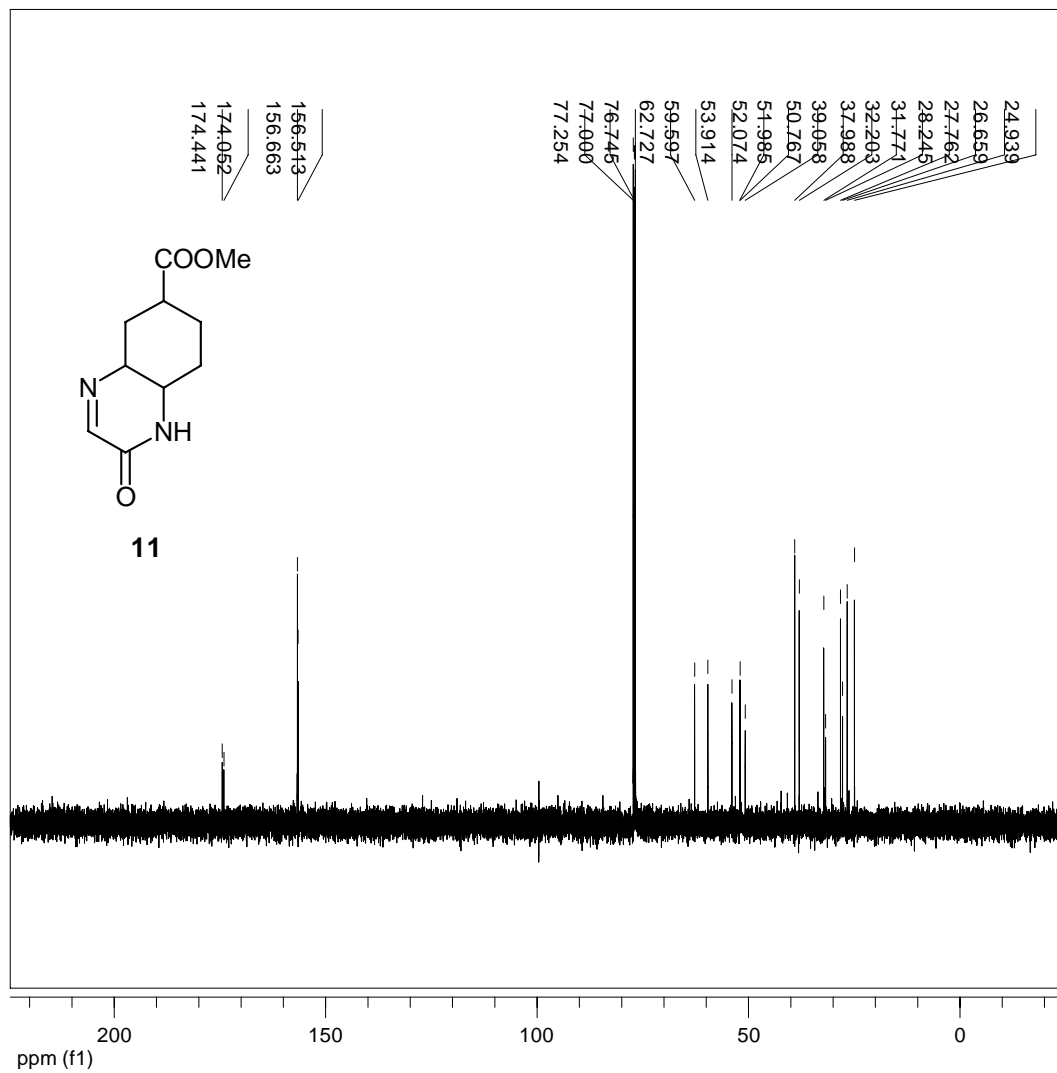
**Acq. Date:**

Fri Feb 08 07:28:11 PV



**Date:**  
 14 Mar 2008  
**Document's Title:**  
 1  
**Spectrum Title:**  
  
**Frequency (MHz):**  
 (f1) 500.133  
**Original Points Count:**  
 (f1) 16384  
**Actual Points Count:**  
 (f1) 32768  
**Acquisition Time (sec):**  
 (f1) 2.7263  
**Spectral Width (ppm):**  
 (f1) 12.016  
**Pulse Program:**  
 ZG30  
**Temperature:**  
 299.16  
**Number of Scans:**  
 16  
**Acq. Date:**  
 Mon Feb 11 06:16:39 PM





**Date:**

14 Mar 2008

**Document's Title:**

1

**Spectrum Title:**

C-13-APT, BBO Probe, DRX-500, using deptq-135 pulse, 5-2-08

**Frequency (MHz):**

(f1) 125.770

**Original Points Count:**

(f1) 16384

**Actual Points Count:**

(f1) 32768

**Acquisition Time (sec):**

(f1) 0.5210

**Spectral Width (ppm):**

(f1) 250.031

**Pulse Program:**

ZGPG45

**Temperature:**

299.16

**Number of Scans:**

160

**Acq. Date:**

Mon Feb 11 06:19:11 PM