# FACT SHEET

# 6-APB

November 2013

**For more information, please contact:**
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# A. General information

## *Recent collected sample in Belgium*

Substance: 6-APB
Date of analysis: First week of November, 2013
Product type: powder
Color: white
Region: Brussels
Sample origin: Modus Vivendi collected the sample from a user in the Brussels region

**Created**
June 2011

**Updated**
November 2013

**Type**
Psychotropic substances

**Group**
Others

**Name**
6-APB

**Systematic chemical name**
6-(2-aminopropyl)benzofuran

**Other names**
“Benzo Fury”

**Nature of substance**
6-APB is an aminoalkylbenzofuran which acts as a serotonin (5-HT(2c)) agonist. Like other APB compounds, it is a unsaturated benzofuran derivative of APDB compounds, and a deoxygenated derivative of MDA (a scheduled drug in the 1971 UN Convention on Psychotropic Substances).
APB compounds share structural features with phenethylamines, but the conjugation of the unsaturated bond in the furan ring with the phenyl ring grants distinctive properties.
There are four possible positional isomers of APB (i.e. 4-, 5-, 6- and 7-APB), and each of them can exist in two enantiomers (R and S) because of the chiral alpha-carbon atom.

# B. Alerts

Alerts

**United Kingdom:** Two fatal intoxications following the ingestion of “Benzo Fury” have been reported in the UK on 7 september 2012. It concerned two males (age 19 and 33). In the first case, [[5-APB]] (0.016 mg/L), [[6-APB]] (0.057 mg/L) and [[5-IT]] (0.379 mg/L) were found in blood.
In the second case, MDMA (0.502 mg/L), MDA (0.046 mg/L), [[6-APB]] (0.005 mg/L) and [[5-IT]] (0.3 mg/L) were found. These substances were also identified in urine.
Considering the presence of [[5-IT]], it seems unlikely that the cause of death can be solely attributed to the consumption of 6-APB.

Reports to EMCDDA
**Belgium:** On 8 November 2013, the BEWSD reported the analysis of a powder containing 6-APB in Brussels. The powder was tested in the framework of a pill-testing project (Modus Vivendi).

**Italy:** Intoxications with and seizures of 6-APB have been reported in 2013.

**Denmark:** On 7 February 2013 the NFP reported a seizure of 2 plastic bags containing each 0,5g beige powder, seized on 02/04/12 by the police at Odense.

**Croatia:** On 16 November 2012 the NFP reported a seizure of 53,25g (0,05g powder and 380 transparent capsules containing 53,20g powder) seized on 31/08/2012 by the Police.

**Germany:** On 16 August 2012 the NFP reported a seizure of 1,04g beige powder seized on 14/05/2012 by the Customs authority at Frankfurt. On 17 February 2012 the NFP reported a seizure of 47,5g seized on 31/10/2011 by the police at Heidi.

**Norway:** On 12 January 2012 the NFP reported a seizure of 0,35g beige powder seized on 01/10/2011 by the Police at Molde.

**Sweden:** On 22 December 2011 the NFP reported a seizure of 2 pink tablets seized on 21/10/2011 by the Swedish Police at Orebro.

**Hungary:** On 27 June 2011 the NFP reported a seizure of 0,13g blue-white capsule with light brown powder seized in May 2011 by the Police at Tolna county.

# C. Pictures
/

# D. Clinical information

### Usage
### Modes and scope of the established or expected use
6-APB, like 5-APB, acts like a stimulant with mild hallucinogenic properties. It has been compared to MDMA in terms of its effects in party-going consumers.

Mixtures of several APB's (for example [[5-APB]] and 6-APB) have been sold as legal highs, and were mostly branded "Benzo Fury". After the banning/scheduling of these substances, similar substances appeared (for example, 5/6-MAPB).

### Health risks

Very little is known about the specific toxicity of 6-APB, or the X-APB-series as a whole.
In case of overdose, stimulant intoxications might be observed (paranoia, anxiety, tachycardia, hypertension, hallucinations, palpations, psychosis, …).
Since no specific antidote is available, treatment is mostly supportive and symptomatic.
Diazepam is frequently used (as in most stimulant intoxications).
Abuse potential seems comparable to that of MDMA and other related phenethylamines, and seems rather low.

### Other uses

None known.

## E. Legal status

**Belgium:** non-controlled. It's isomer [[5-APB]] however is scheduled.

**Denmark: controlled**

**Germany: controlled**

**Hungary: controlled**
As of 3 April 2012, generic definitions for 4 groups of substances (certain synthetic cannabinoid receptor agonists, cathinones, tryptamines and piperazines) have been included in the new Schedule C list.

**Italy: controlled**

**Lithuania: non-controlled**

**Portugal: controlled**

**Slovenia: controlled**

**Sweden: controlled**

**United Kingdom: controlled**
Temporary class drug order (TCDO) on two groups of new psychoactive substances (NPS) – the 'NBOMe' and 'Benzofuran' substances ([[25I-NBOMe]] and 5- and 6-APB respectively, including other related substances) – under the Misuse of Drugs Act 1971, came into force on Monday 10 June 2013 for up to 12 months.

# F. Chemistry

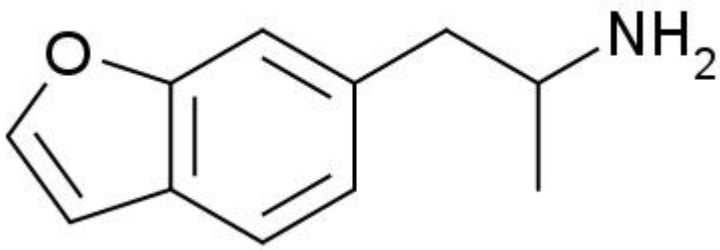
### Systematic chemical name
6-(2-aminopropyl)benzofuran

### Other chemical names and variants
1-benzofuran-6-ylpropan-2-amine

### Chemical Abstracts Service (CAS) registry number
286834-85-3

### Molecular information

**Molecular structure**:




**Molecular formula:** $C_{11}H_{13}NO$

**Molecular weight:** 175.23 g/mol

### Synthesis, manufacture and precursors
No data available.

### Physical description
White powder

### Identification and analytical profile were kindly provided by the Hungarian National Focal Point and can be found at the end of this document.

# G. References

Chan W. L. et al., Acute Psychosis Associated with Recreational Use of Benzofuran 6-(2-Aminopropyl)Benzofuran (6-APB) and Cannabis, J. Med. Toxicol. (2013) DOI 10.1007/s13181-013-0306-y.

Information sheet: Benzo Fury, DrugWatch, June 2012.

K. Briner *et al.,* Aminoalkylbenzofurans as serotonin (5-HT(2C)) agonists, US Patent 7,045,545 B1 to Eli Lilly and Co., 16 May 2006.

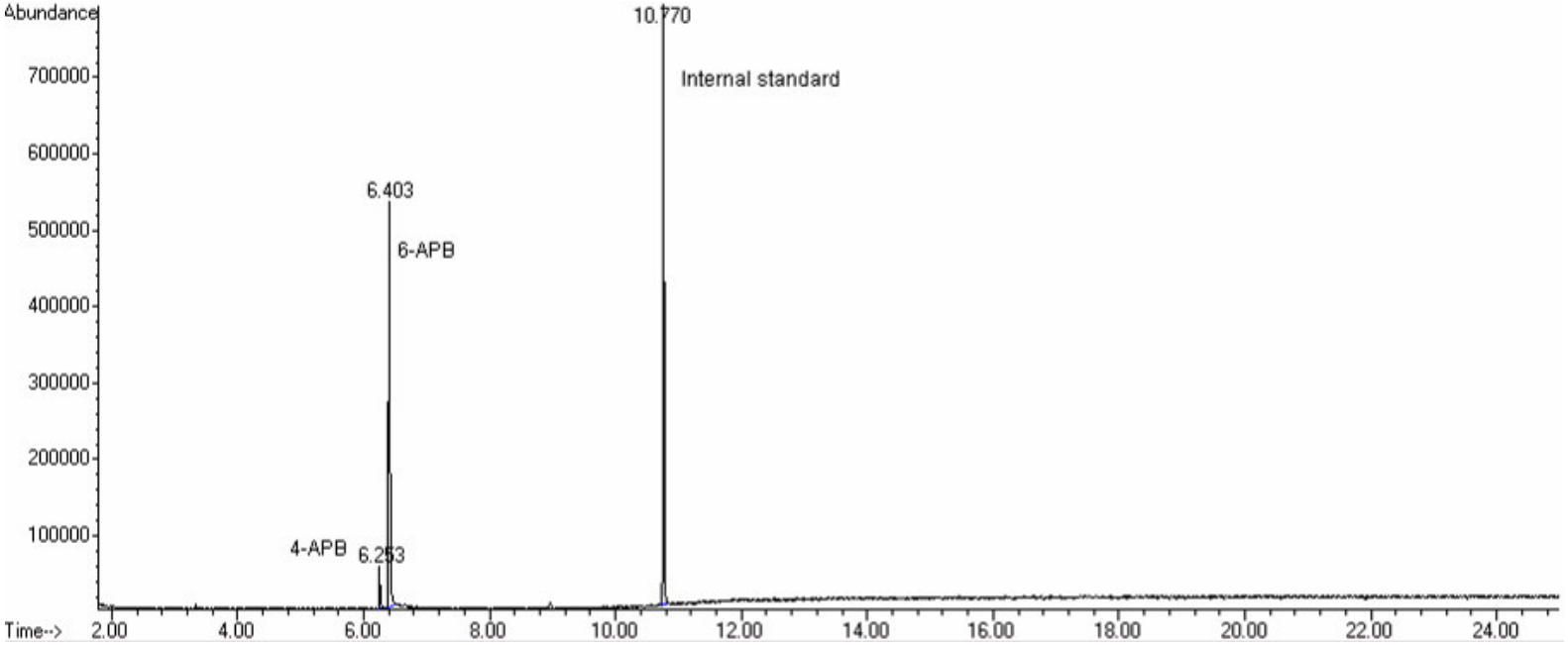
# Identification of 6-APB and 4-APB in seized material

- GC/MS
  - 2 peaks (major and minor) with similar spectra
  - spectra similar to MS of 5-APB reported by Simon Hudson HFL Sport Science Ltd

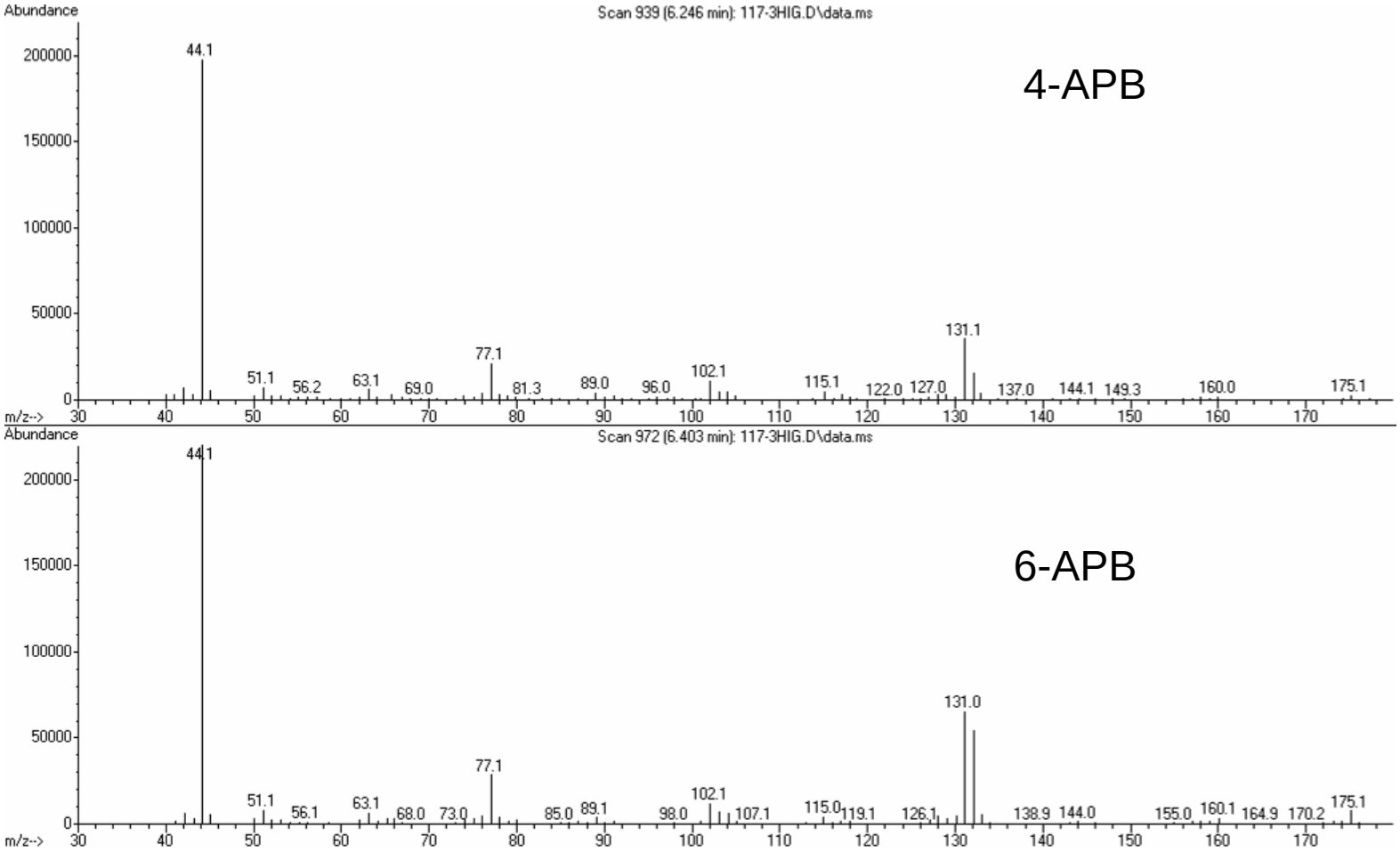
- NMR results
  - Signals assigned by 2D technique (not included in this summary)
  - Major component: 6-APB
  - Minor component: 4-APB

# GC

- 0.5 mg sample dissolved in MeOH
- GC separation
  - Column: HP5-MS 30m×0,25mm×0,25µm
  - Injector: 250°C
  - Carrier gas: He, 1.2 ml/min, constant flow
  - Temperature: 100°C for 2min; 20°C/min to 280°C; 280°C for 14 min



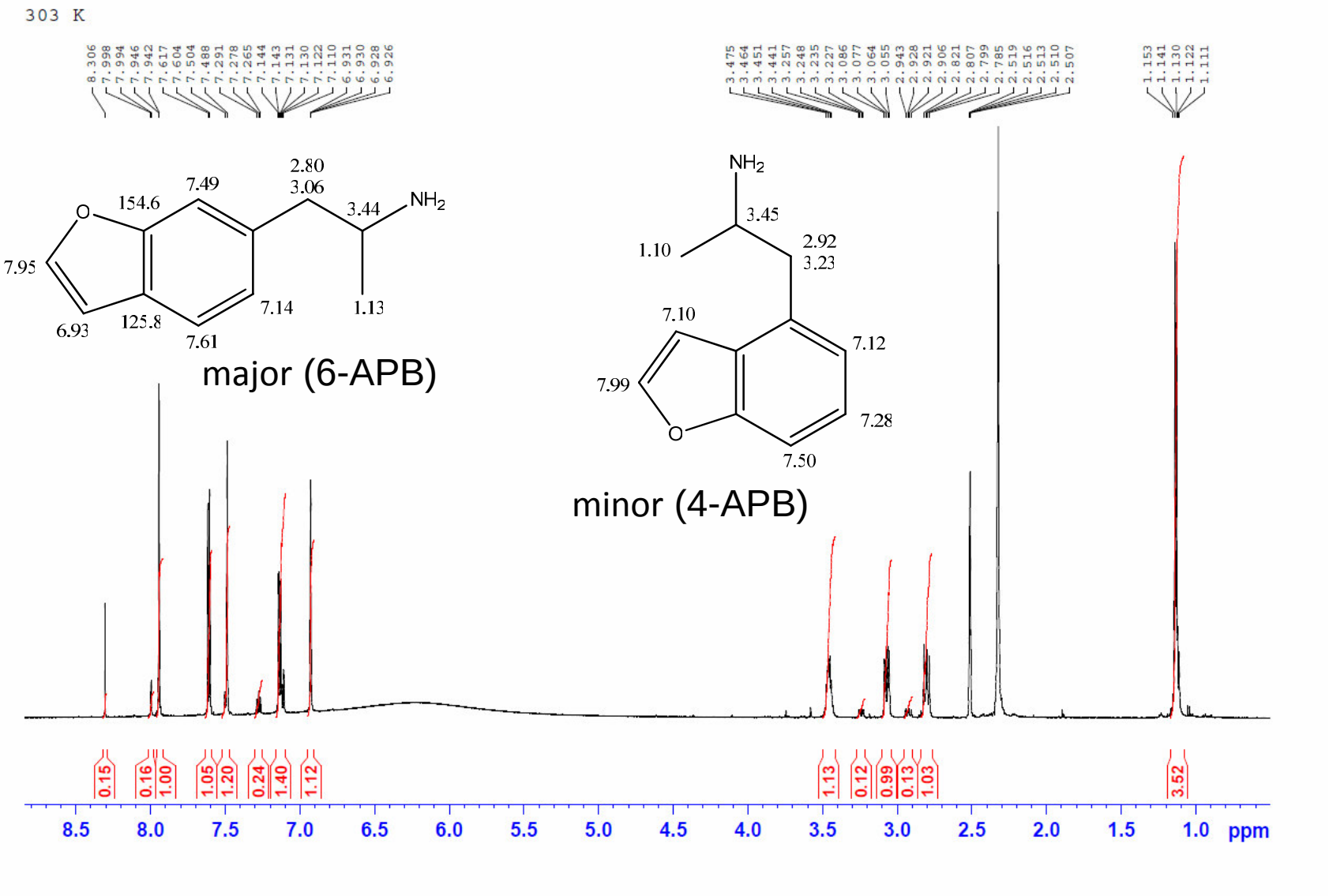
# MS




Scaled to equal abundance

# $^1$H NMR

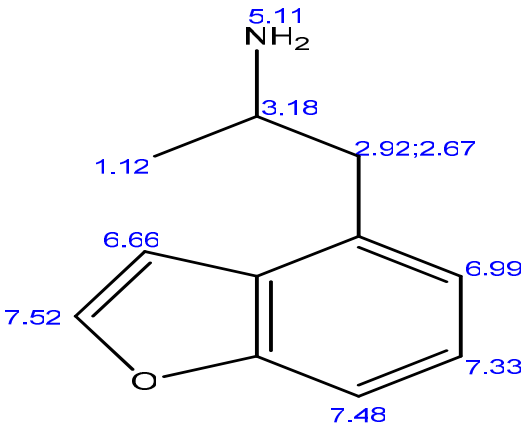
APB

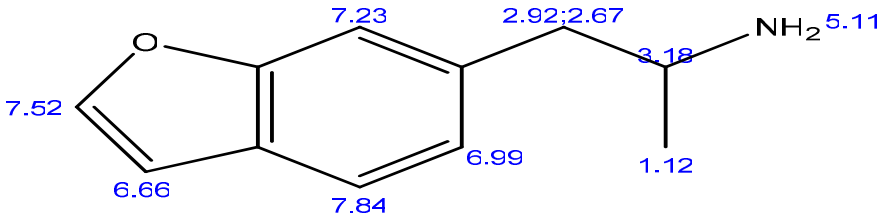



(Impurity peak at 8.306 ppm)

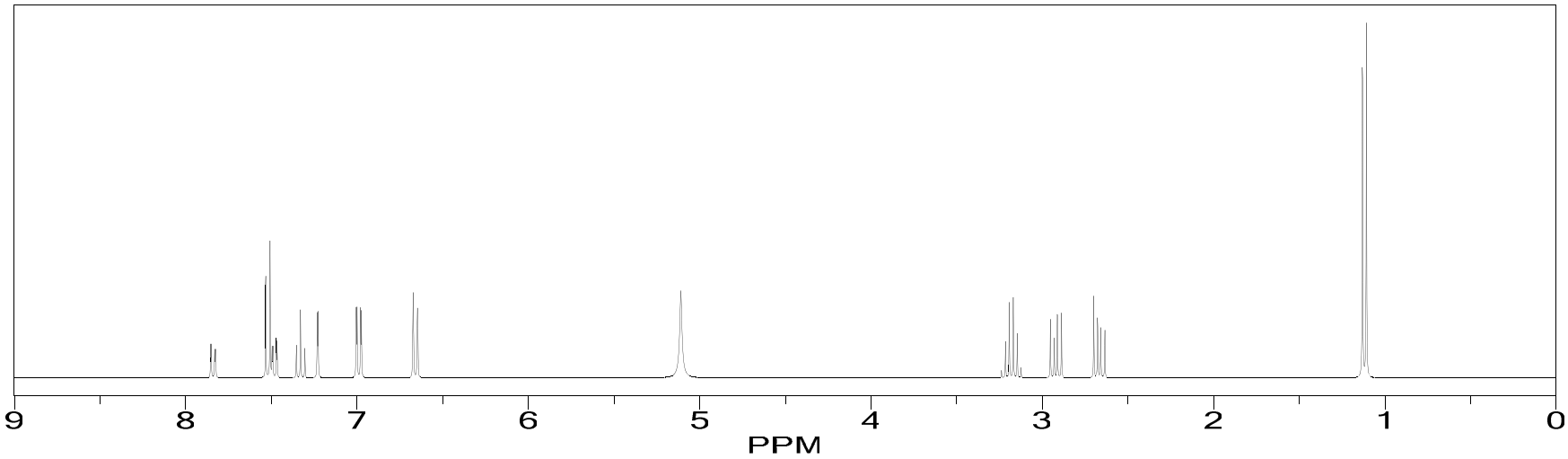
APB

# ChemNMR $^1$H Estimation



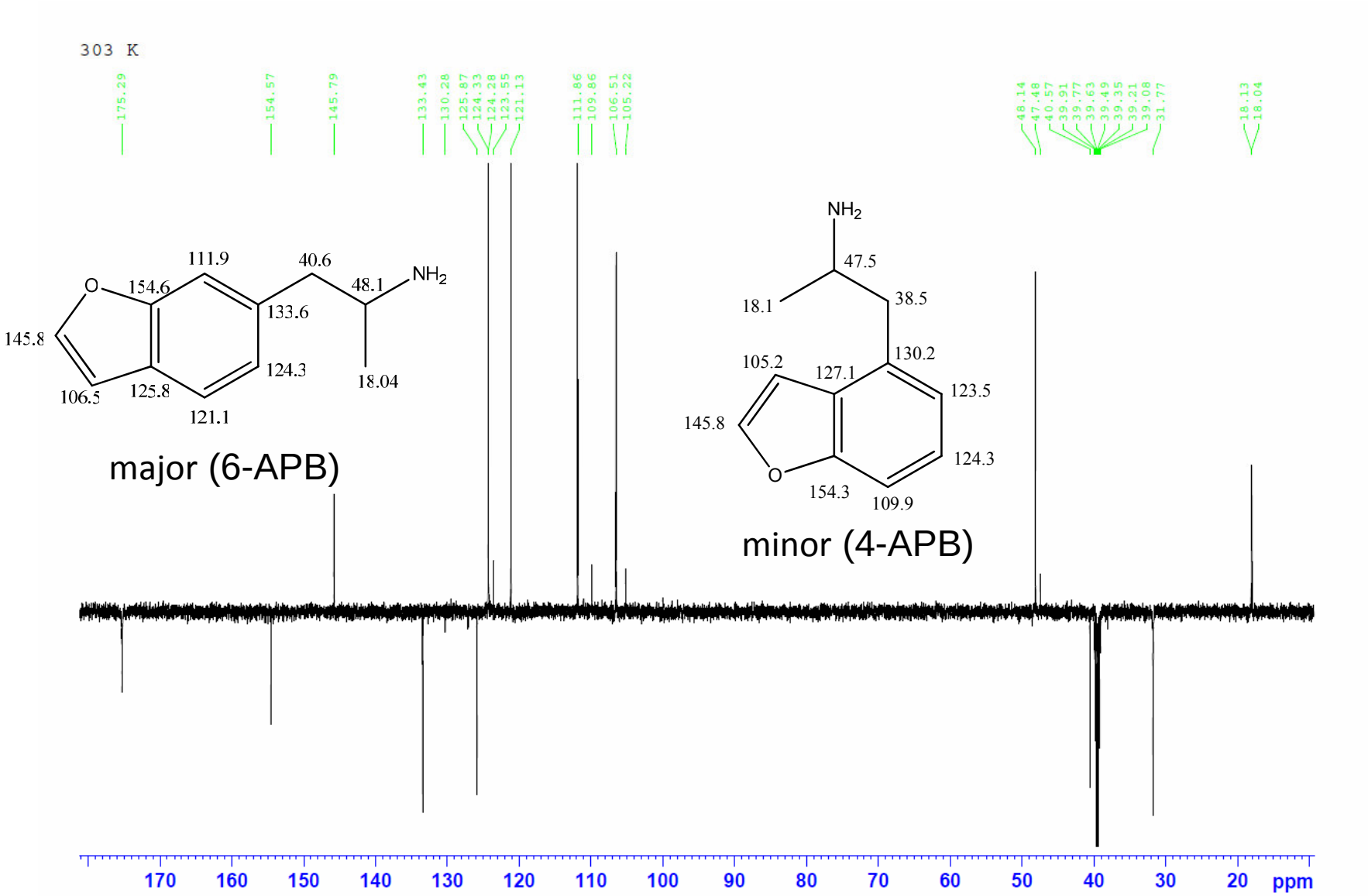




Estimation quality is indicated by color: good, medium, rough



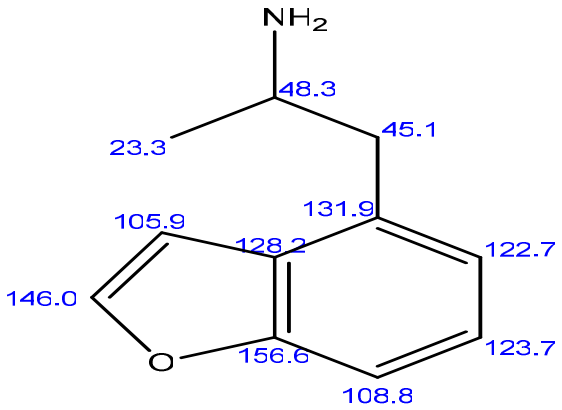
# $^{13}$C NMR

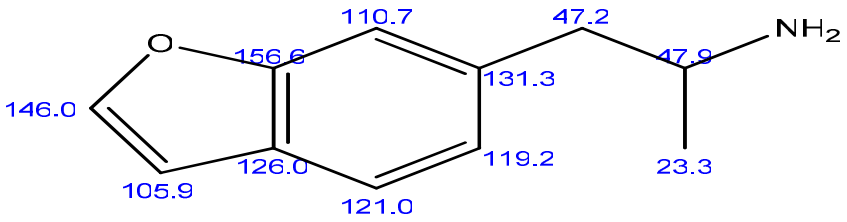
APB


303 K
175.29
154.57
145.79
133.43
130.28
125.87
124.33
124.28
123.55
121.13
111.86
109.86
106.51
105.22
48.14
47.48
40.57
39.91
39.77
39.63
39.49
39.35
39.21
39.08
31.77
18.13
18.04
O
111.9
40.6
48.1
NH2
154.6
133.6
145.8
124.3
106.5
125.8
18.04
121.1
major (6-APB)
NH2
47.5
18.1
38.5
130.2
105.2
127.1
123.5
145.8
124.3
O
154.3
109.9
minor (4-APB)
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
ppm

APB

# ChemNMR $^{13}$C Estimation




Estimation quality is indicated by color: good, medium, rough