ANALYTICAL REPORT

4-methyl-N-ethyl-norephedrine (C12H19NO)
1-(4-Methylphenyl)-2-ethylamino-1-propanol

Remark – other active cpd. detected: none

<table>
<thead>
<tr>
<th>Sample ID:</th>
<th>1345-16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample description:</td>
<td>powder - white</td>
</tr>
<tr>
<td>Sample type:</td>
<td>RM-reference material</td>
</tr>
<tr>
<td>Comments¹:</td>
<td>Lipomed #1455.1B2.1; RESPONSE -purchasing</td>
</tr>
<tr>
<td>Date of entry:</td>
<td>3/4/2016</td>
</tr>
</tbody>
</table>

Substance identified-structure² (base form)

Systematic name: 1-(4-Methylphenyl)-2-ethylamino-1-propanol

Other names: 2-(ethylamino)-1-(4-methylphenyl)propan-1-ol

Formula (per base form) C12H19NO

Mₜ (g/mol) 193.29

Salt form: HCl

StdInChIKey AQJDADTYOSUEIK-UHFFFAOYSA-N

Compound Class Phenethylamines

Other active cpd. detected none

Add.info (purity..) >98.5 (asHCl)

¹ This report has been produced with the financial support of the Prevention of and Fight against Crime Programme of the European Union (grant agreement number JUST/2013/ISEC/DRUGS/AG/6413). The contents of this report are the sole responsibility of the National Forensic Laboratory and can in no way be taken to reflect the views of the European Commission.

² Created by OPSIN free tool: http://opsin.ch.cam.ac.uk/ DOI: 10.1021/ci100384d
Report updates

<table>
<thead>
<tr>
<th>date</th>
<th>comments (explanation)</th>
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<tbody>
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Supporting information

<table>
<thead>
<tr>
<th>Analytical technique</th>
<th>applied</th>
<th>remarks</th>
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</thead>
<tbody>
<tr>
<td>GC-MS (EI ionization)</td>
<td>+</td>
<td>NFL GC-RT (min): 4 BP(1): 72; BP(2): 44, BP(3): 91,</td>
</tr>
<tr>
<td>FTIR-ATR</td>
<td>+</td>
<td>direct measurement</td>
</tr>
<tr>
<td>GC-IR (condensed phase)</td>
<td>+</td>
<td></td>
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</tbody>
</table>

**GC-MS (Agilent):**
GC-method is RT locked to tetracosane (RT=9.53 min).
Injection volume 1 ml and split mode (1:50).
Injector temperature: 280 °C.
Chromatographic separation
Column: HP1-MS (100% dimethylpolysiloxane), length 30 m, internal diameter 0.25 mm, film thickens 0.25 mm.
Carrier gas He: flow-rate 1.2 ml/min. GC oven program: 170 °C for 1 min, followed by heating up to 293 °C at a rate of 18 °C/min, hold for 6.1 min, than heating at 50 °C/min up to 325 °C and finally 2.8 min isothermal.
MSD source EI = 70 eV. GC-MS transfer line T= 235°C, source and quadropole temperatures 280°C and 180°C, respectively. Scan range m/z scan range: from 50 (30 until 6 min) to 550 (300) amu.

**FTIR-ATR (Perkin Elmer):** scan range 4000-400 cm⁻¹; resolution 4cm⁻¹

**GC- (MS)-IR condensed phase (GC-MS (Agilent) & IR (Spectra analyses-Danny) IR scan range 4000 to 7000, resolution 4cm⁻¹**
GC-method:
Injection volume 1 ml and split mode (1:5).
Injector temperature: 280 °C.
Chromatographic separation
Column: HP1-MS (100% dimethylpolysiloxane), length 30 m, internal diameter 0.25 mm, film thickens 0.25 mm.
Carrier gas He: flow-rate 1.2 ml/min. GC oven program: 170 °C for 1 min, followed by heating up to 293 °C at a rate of 18 °C/min, hold for 6.1 min, than heating at 50 °C/min up to 325 °C and finally 2.8 min isothermal.
Split MS : IR : (1:9)
MSD source EI = 70 eV. GC-MS transfer line T= 235°C, source and quadropole temperatures 280°C and 180°C, respectively. Scan range m/z scan range: from 50 (30 until 6 min) to 550 (300) amu.
IR (condensed phase): IR scan range 4000 to 700, resolution 4cm⁻¹
FIGURES OF SPECTRA

MS (EI)

Abundance

Scan 646 (3.398 min): dl-4-Methyl-N-ethylnorep-HCL_1345-16_LP.D\data.ms

m/z->