ANALYTICAL REPORT

JWH-147 (C27H27NO)
(1-hexyl-5-phenyl-1H-pyrrol-3-yl)-1-naphthalenyl-methanone

Remark – other active cpd. detected: none

<table>
<thead>
<tr>
<th>Sample ID:</th>
<th>1230-15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample description:</td>
<td>liquid - yellow (oil)</td>
</tr>
<tr>
<td>Sample type:</td>
<td>RM-reference material</td>
</tr>
<tr>
<td>Comments¹:</td>
<td>Chiron AS Lot#11271; RESPONSE -purchasing</td>
</tr>
<tr>
<td>Date of entry:</td>
<td>8/31/2015</td>
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</tbody>
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Substance identified-structure² (base form)

Systematic name:                 (1-hexyl-5-phenyl-1H-pyrrol-3-yl)-1-naphthalenyl-methanone

Other names:

Formula (per base form)          C27H27NO

M_w (g/mol)                      381,51

Salt form:                       base

StdInChIKey                      FRMYAMAGHYHNKF-UHFFFAOYSA-N

Compound Class                   Cannabinoids

Other active cpd. detected       none

Add.info (purity..)              83%

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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Supporting information

<table>
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<tr>
<th>Analytical technique:</th>
<th>applied</th>
<th>remarks</th>
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</table>
| GC-MS (EI ionization) | +       | NFL GC-RT (min): 16.7  
BP(1): 381; BP(2): 155, BP(3): 127, |
| FTIR-ATR             | +       | direct measurement |
| GC-IR (condensed phase)| +      | spectrum is always for the base form of compound |

**GC-MS (Agilent):**

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 thickness 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 (40) to 550 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 700, 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 thickness 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 (40) to 550 amu.
IR (condensed phase): IR scan range 4000 to 700, resolution 4cm-1
FIGURES OF SPECTRA

MS (EI)
FTIR-ATR

IR-condensed phase

Sample: JWH-147, 1230-15