ANALYTICAL REPORT

5-Fluoropentyl-3-pyridinoylindole (C19H19FN2O)
(1-(5-fluoropentyl)-1H-indol-3-yl)(pyridin-3-yl)methanone

Remark – other active cpd. detected: none

<table>
<thead>
<tr>
<th>Sample ID:</th>
<th>1372-15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample description:</td>
<td>crystalline - yellow</td>
</tr>
<tr>
<td>Sample type:</td>
<td>RM-reference material</td>
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<tr>
<td>Comments¹:</td>
<td>Cayman Lot#0447487; NFL- purchasing</td>
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<tr>
<td>Date of entry:</td>
<td>11/18/2015</td>
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</tbody>
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Substance identified-structure² (base form)

Systematic name: (1-(5-fluoropentyl)-1H-indol-3-yl)(pyridin-3-yl)methanone

Other names:

Formula (per base form) C19H19FN2O
Mₜₜ (g/mol) 310.36
Salt form: HCl
StdInChIKey CNMQLCYLJPWHEW-UHFFFAOYSA-N
Compound Class Cannabinoids
Other active cpd. detected none
Add.info (purity..) 98%

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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<tbody>
<tr>
<td>GC-MS (EI ionization)</td>
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<td>NFL GC-RT (min): 11.72</td>
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<tr>
<td></td>
<td></td>
<td>BP(1): 235; BP(2): 310, BP(3): 232,</td>
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<tr>
<td>FTIR-ATR</td>
<td></td>
<td>direct measurement</td>
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<tr>
<td>GC-IR (condensed phase)</td>
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**GC-MS (Agilent):**
- GC-method is RT locked to tetracotane (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 (40) to 550 amu.

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

**GC- (MS)-IR condensed phase (GC-MS (Agilent) & IR (Spectra analyses-Danny) IR scan range 4000 to 7000, resolution 4 cm⁻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 (40) to 550 amu.
  - IR (condensed phase): IR scan range 4000 to 7000, resolution 4 cm⁻¹
FIGURES OF SPECTRA

Average of 11.692 to 11.723 min.: 5-Fluoropentyl-2-aminopyrindylindole_HCl
FTIR-ATR

IR-Condensed phase

NOTE: This is condensed phase IR (per base form of substance) instrument (Diamond GC)

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ID 1372-15