## ANALYTICAL REPORT

### Cyclohexyl fentanyl (C26H34N2O)

**N-phenyl-N-[1-(2-phenylethyl)piperidin-4-yl]cyclohexanecarboxamide**

**Remark** – other active cpd. detected: none

<table>
<thead>
<tr>
<th>Sample ID:</th>
<th>1844-17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample description:</td>
<td>powder - white</td>
</tr>
<tr>
<td>Sample type:</td>
<td>RM-reference material</td>
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<tr>
<td>Comments:</td>
<td>CAY Lot#0507143-4,</td>
</tr>
<tr>
<td>Date of entry (DD/MM/YYYY):</td>
<td>18/08/2017</td>
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</table>

### Substance identified-structure^1 (base form)

```
N-phenyl-N-[1-(2-phenylethyl)piperidin-4-yl]cyclohexanecarboxamide
```

### Systematic name:

N-phenyl-N-[1-(2-phenylethyl)piperidin-4-yl]cyclohexanecarboxamide

### Other names:

N-(1-phenethyl)piperidin-4-yl)-N-phenylcyclohexanecarboxamide

### Formula (per base form):

C26H34N2O

### M_w (g/mol)

390,57

### Salt form:

HCl

### StdInChIKey (per base form):

CWLVCTNETVWMMZ-UHFFFAOYSA-N

### Other active cpd. detected:

none

### Add.info (purity..)

100,0%

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^1 Created by OPSIN free tool: [http://opsin.ch.cam.ac.uk/](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>
</tr>
</thead>
<tbody>
<tr>
<td>GC-MS (EI ionization)</td>
<td>+</td>
<td>NFL GC-RT (min): 14,74 BP(1): 83; BP(2): 299; BP(3): 189,</td>
</tr>
<tr>
<td>FTIR-ATR</td>
<td>+</td>
<td>direct measurement</td>
</tr>
<tr>
<td>GC-IR (condensed phase)</td>
<td>+</td>
<td>always as base form</td>
</tr>
</tbody>
</table>

1. **GC-MS** (Agilent): GC-method is RT locked to tetracosane (9.258 min). Injection volume 1 ml and split mode (1:50). Injector temperature: 280 °C. Chromatographic separation: on column HP1-MS (100% dimethylpolysiloxane), length 30 m, internal diameter 0.25 mm, film thickness 0.25 µm. Carrier gas He: flow-rate 1.2 ml/min. GC oven program: 170 °C for 1 min, followed by heating up to 190 °C at rate 8 °C/min, then heating up to 293 °C at a rate of 18 °C/min, hold for 7.1 min, then heating at 50 °C/min up to 325 °C and finally 6.1 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 until 6 min) amu.

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

3. **GC- (MS)-IR** condensed phase (GC-MS (Agilent) & IR (Spectra analyses-Danny))
   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 until 6 min) amu.
   IR (condensed (solid) phase): IR scan range 4000 to 650, resolution 4 cm⁻¹.

4. **HPLC-TOF** for exact monoisotopic mass and empirical formula control - results are not shown in the report.
ANALYTICAL RESULTS

MS (EI)

Abundance

Scan 2705 (14.743 min). Cyclohexyl fentanyl_1844-17_CaryFolate.mz
FTIR-ATR - sample as received

IR (condensed phase – after chromatographic separation)

NOTE: This is condensed phase IR (per base form of substance)
Instrument: ILSA 200R-DC