ANALYTICAL REPORT

4-Fluoro acrylfentanyl (C22H25FN2O)
N-(4-fluorophenyl)-N-[1-(2-phenylethyl)piperidin-4-yl]prop-2-enamide

Remark – other active cpd. detected: none

<table>
<thead>
<tr>
<th>Sample ID:</th>
<th>1806-17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample description:</td>
<td>powder - white</td>
</tr>
<tr>
<td>Sample type:</td>
<td>RM-reference material</td>
</tr>
<tr>
<td>Comments¹:</td>
<td>CAY Lot#0496151-9; RESPONSE -purchasing</td>
</tr>
<tr>
<td>Date of entry (DD/MM/YYYY):</td>
<td>13/04/2017</td>
</tr>
</tbody>
</table>

Substance identified-structure² (base form)

![Structure Diagram]

Systematic name: N-(4-fluorophenyl)-N-[1-(2-phenylethyl)piperidin-4-yl]prop-2-enamide

Other names:
- 4-F Acrylfentanyl;
- p-fluoro Acrylfentanyl;
- para-fluoro Acrylfentanyl

Formula (per base form):
C22H25FN2O

Mₚ (g/mol):
352.45

Salt form:
base

StdInChIKey (per base form):
ZTLLQVADDIYJU-UHFFFAOYSA-N

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/](http://opsin.ch.cam.ac.uk/)  DOI: 10.1021/ci100384d
Report updates

<table>
<thead>
<tr>
<th>date</th>
<th>comments (explanation)</th>
</tr>
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<tbody>
<tr>
<td>18/05/2017</td>
<td>Typo error corrected: Acrylcarfentanyl in the title changed to acryl fentanyl.</td>
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</tbody>
</table>

Supporting information

Analytical technique: | applied | remarks |
--- | --- | --- |
GC-MS (EI ionization) | + | NFL GC-RT (min): 10,87 BP(1): 261; BP(2): 55, BP(3): 164, |
FTIR-ATR | + | direct measurement |
GC-IR (condensed phase) | + | always as base form |

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 quadrupole 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-IR** condensed phase (GC-MS (Agilent) & IR (Spectra analyses-Danny)
MSD source EI = 70 eV. GC-MS transfer line T= 235°C, source and quadrupole 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.
FTIR-ATR - sample as received

IR (condensed phase – after chromatographic separation)