

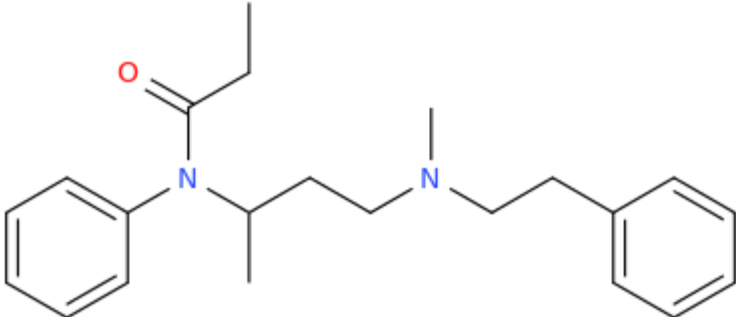
ANALYTICAL REPORT

2,3-seco-Fentanyl (C₂₂H₃₀N₂O)

N-{4-[methyl(2-phenylethyl)amino]butan-2-yl}-N-phenylpropanamide

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

Sample ID:	1968-18
Sample description:	powder - white
Sample type:	RM-reference material
Comments:	CAY Lot# 0534101-3,
Date of entry (DD/MM/YYYY):	02/10/2018

Substance identified- structure ¹ (base form)	
Systematic name:	N-{4-[methyl(2-phenylethyl)amino]butan-2-yl}-N-phenylpropanamide
Other names:	N-(4-(methyl(phenethyl)amino)butan-2-yl)-N-phenylpropionamide
Formula (per base form)	C ₂₂ H ₃₀ N ₂ O
M _w (g/mol)	338,5
Salt form:	HCl
StdInChIKey (per base form)	TVSLDWMMAUJGPV-UHFFFAOYSA-N
Other active cpd. detected	none
Add.info (purity..)	≥95%

¹ Created by OPSIN free tool: <http://opsin.ch.cam.ac.uk/> DOI: 10.1021/ci100384d

Report updates

date	comments (explanation)

Supporting information

Analytical technique:	applied	remarks
GC-MS (EI ionization)	+	NFL GC-RT (min): 9,81 BP(1): 204; BP(2): 120,BP(3) :247,
FTIR-ATR	+	direct measurement
GC-IR (condensed phase)	+	always as base form
HPLC-TOF	+	exact mass theoretical: 338,2358 / measured Δ ppm: 0,03

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 μ m. 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 4 cm^{-1}

3. GC- (MS)-IR condensed phase (GC-MS (Agilent) & IR (Spectra analyses-Danny)

GC-method: Injection volume 1 ml and split mode (1:5). Injector temperature 280 °C. Chromatographic separation as above **(1)**. Split MS: IR = 1 : 9.

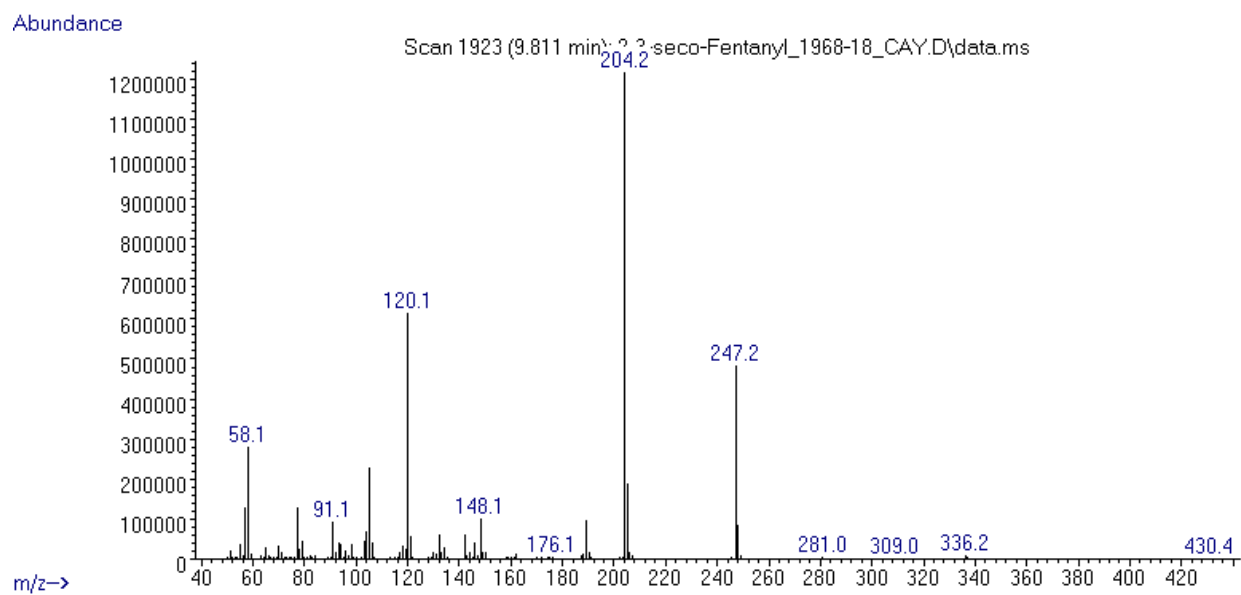
MSD source EI = 70 eV. GC-MS transfer line T= 235°C, source and quadropole temperatures 280°C and 180°C, respectively. Scan range m/z scan range: from 50 (30 until 6 min.) to 550 (300) amu.

IR (condensed (solid) phase): IR scan range 4000 to 650, resolution 4 cm^{-1} .

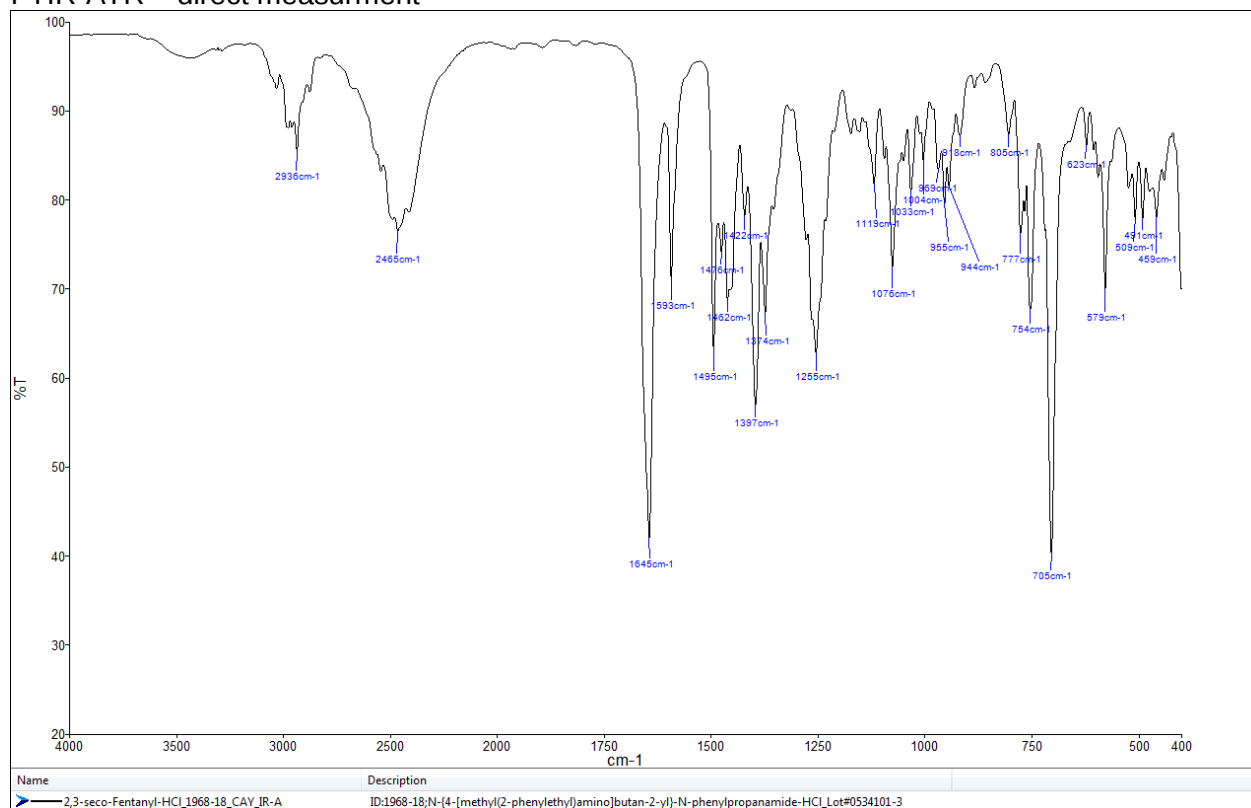
4. HPLC-TOF (Agilent): 6230B TOF with Agilent 1260 Infinity HPLC with binary pump, column: Zorbax Eclipse XDB-C18, 50 x 4.6 mm, 1.8 micron. Mobile phases (A) 0.1% formic acid and 1mM ammonium formate in water; (B) 0.1% formic acid in methanol (B). Gradient: starting at 5% B, changing to 40% B over 4 min, then to 70% over 2 min and in 5 min to 100%, hold 1 min and back to 5%, equilibration for 1.7 min. The flow rate: 1.0 ml/min; Injection volume 1 μ l. MS parameters: 2GHz, Extended Dynamic range mode to a maximum of 1700 amu, acquisition rate 1.30 spectra/sec. Sample ionisation: by Agilent Jet Stream technology (Dual AJS ESI). Ion source: positive ion scan mode with mass scanning from 82 to 1000 amu. Other TOF parameters: drying gas (N₂) and sheath temperature 325 °C; drying gas flow rate 6 l/min; sheath gas flow rate 8 l/min; nebulizer 25 psig; Vcap. 4000 V; nozzle 2000 V; skimmer 65 V; fragmentor 175 V and Octopole RF 750 V.

ANALYTICAL RESULTS

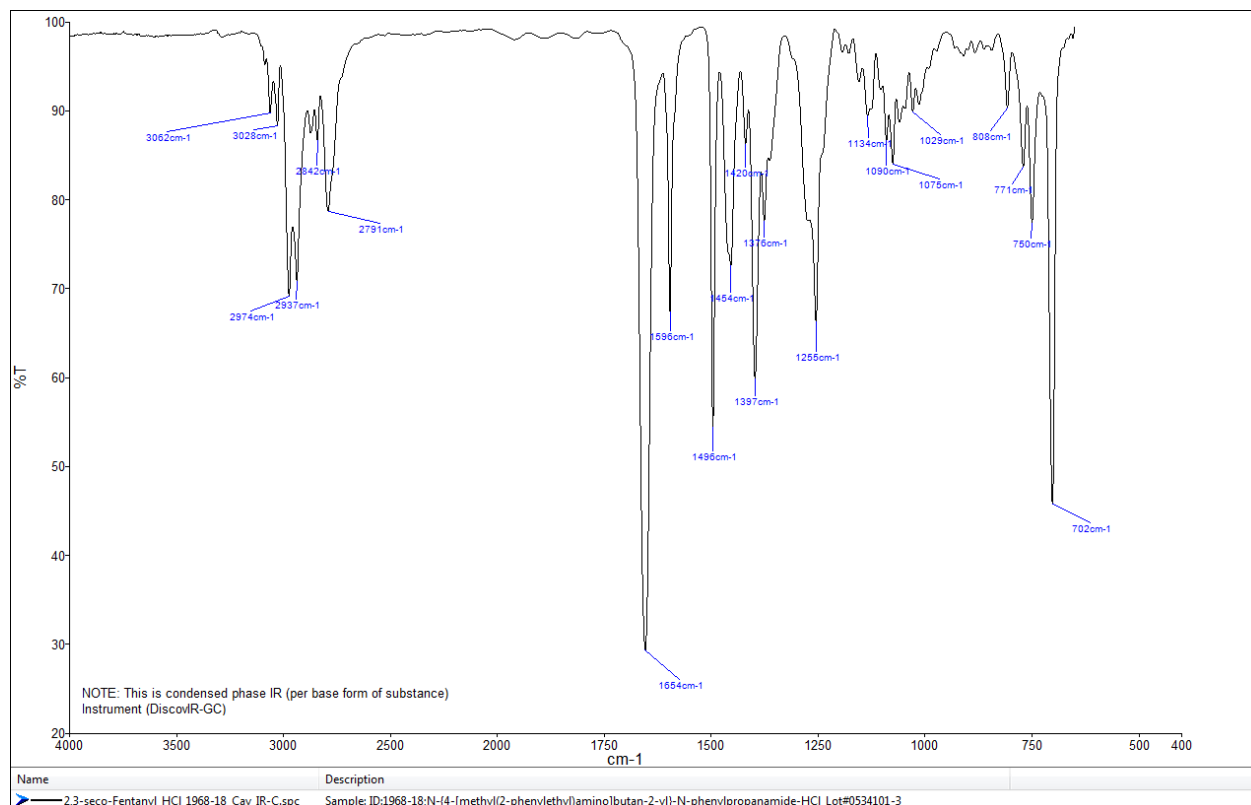
MS (EI)



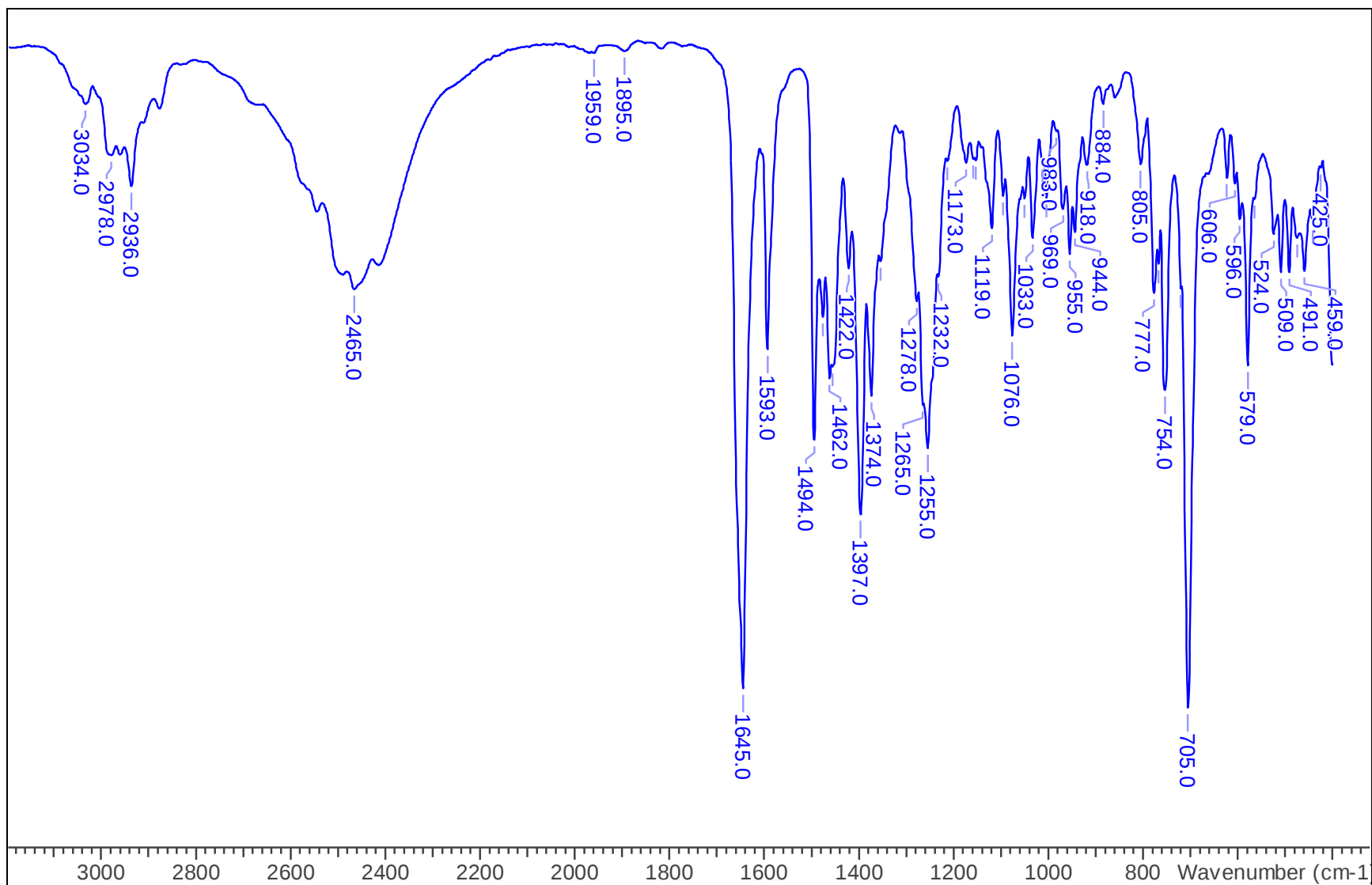
FTIR-ATR – direct measurement



IR- (condensed (solid) phase – after chromatographic separation) - spectrum per base form



FTIR-ATR (enlarged)



IR- (condensed (solid) phase – after chromatographic separation) - spectrum per base form (enlarged)

