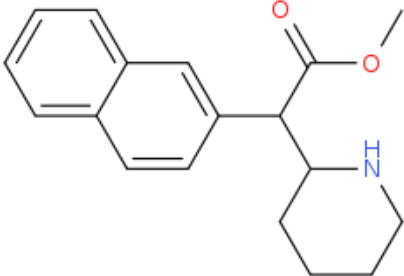




ANALYTICAL REPORT¹
HDMP-28 (C₁₈H₂₁NO₂)
methyl 2-(2-naphthyl)-2-(2-piperidyl)acetate

Remark – other NPS detected: **none**

Sample ID:	1409-16
Sample description:	powder - white
Sample type:	test purchase /RESPONSE -purchasing
Date of sample receipt (M/D/Y):	1/6/2016
Date of entry (M/D/Y) into NFL database:	2/11/2016
Report updates (if any) will be published here:	http://www.policija.si/apps/nfl_response_web/seznam.php

Substance identified - structure ² (base form)	
Systematic name	methyl 2-(2-naphthyl)-2-(2-piperidyl)acetate
Other names	methylnaphthidate
Formula (per base form)	C ₁₈ H ₂₁ NO ₂
M _w (g/mol)	283,36
Salt form/anions detected	chloride
StdInChIKey	DNRNSIJBSCBESJ-UHFFFAOYSA-N
Compound Class	Piperidines & pyrrolidines
Other NPS detected	none
Add.info (purity..)	pure by GC-MS, HPLC-TOF

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

date	comments (explanation)

Instrumental methods (if applied) in NFL

1. GC-MS (Agilent): GC-method is RT locked to tetracosane (RT=9.53 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 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, 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) amu.

2. 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 µl. 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.

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

4. 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 phase): IR scan range 4000 to 650, resolution 4 cm⁻¹.

5. IC (anions) (Thermo Scientific, Dionex ICS 2100), Column: IonPac AS19, 2 x 250mm; Eluent: 10mM from 0 to 10 min, 10-58 mM from 10 to 40min; Flow rate: 0.25 ml/min; Temperature: 30°C; Suppressor: AERS 500 2mm, suppressor current 13mA; Inj. Volume: 25 µl

Supporting information

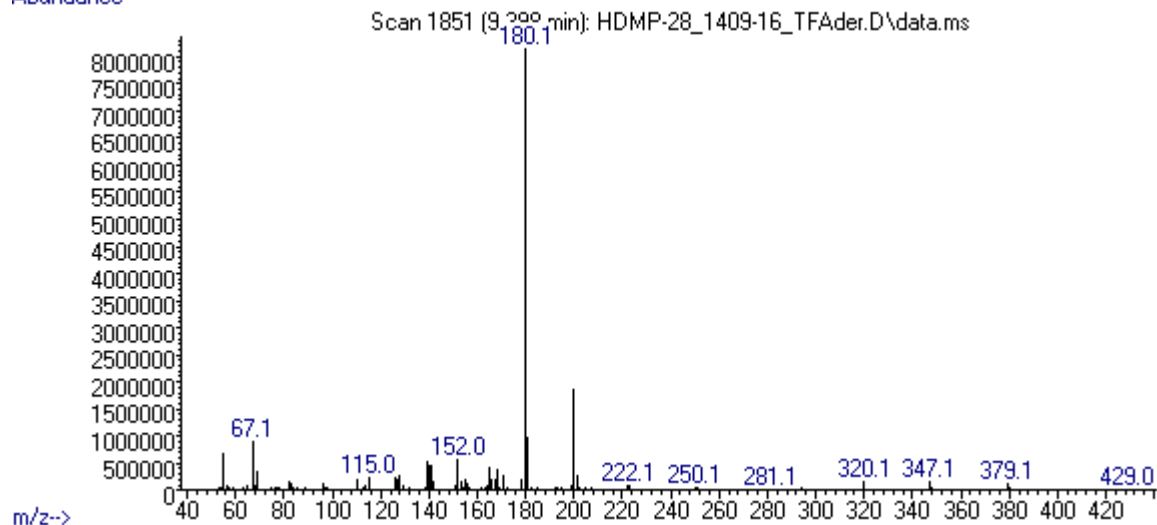
Solubility in	result/remark
CH ₂ Cl ₂	partially
MeOH	soluble
H ₂ O	partially

Analytical technique:	applied	remarks
GC-MS (EI ionization)	+	NFL GC-RT (min): 9,4 (TFA derivative) BP(1): 180; BP(2): 200, BP(3) :181,
HPLC-TOF	+	Exact mass (theoretical): 283,1572; measured value Δppm: -0,38; formula: C ₁₈ H ₂₁ NO ₂
FTIR-ATR	+	direct measurement (sample as received)
FTIR (condensed phase) always as base form		not measured
IC (anions)	+	
NMR (in FKKT)	no	
validation		
other		

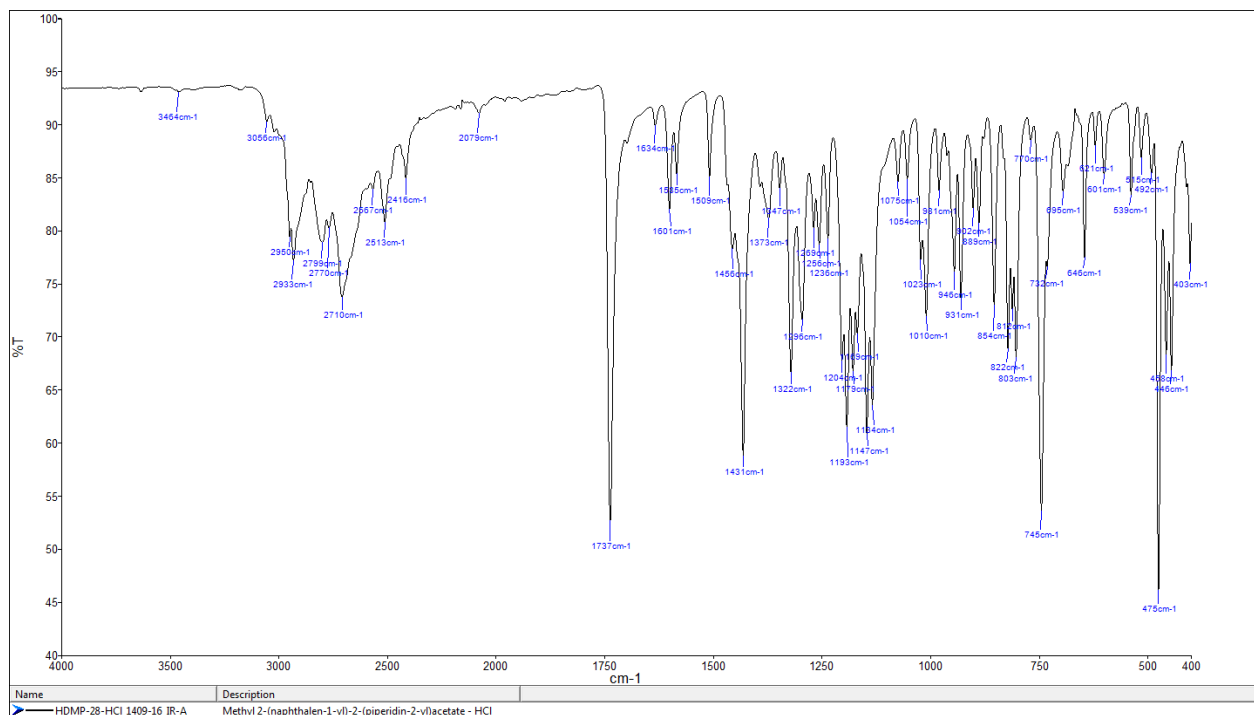
ANALYTICAL RESULTS

MS (EI) : as TFA derivative

Abundance



FTIR-ATR - direct measurement (sample as received)



TOF REPORT

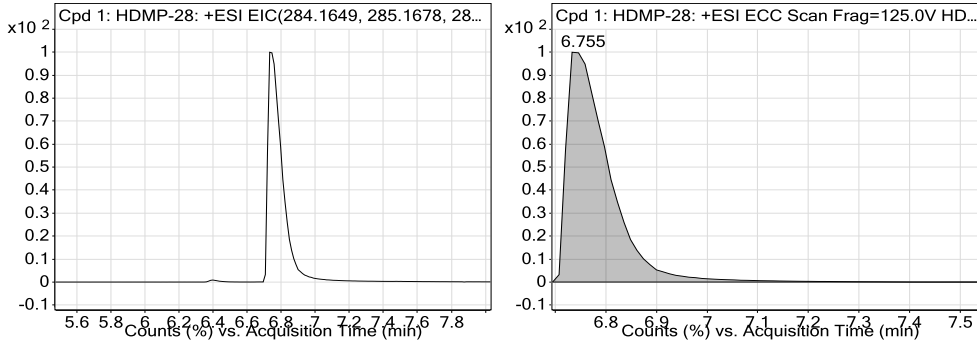
Data File	HDMP-28_1409-15_TOF.d	Sample Name	ID_1409-15
Sample Type	Sample	Position	P1-D7
Instrument Name	6230B TOF LC-MS	User Name	TG
Acq Method	general-1512015-XDB-C18-ESI-poz.m	Acquired Time	1/11/2016 12:31:17 PM
IRM Calibration Status	Success	DA Method	Drugs_NFL.m
Comment	extract in MeOH		

Compound Table

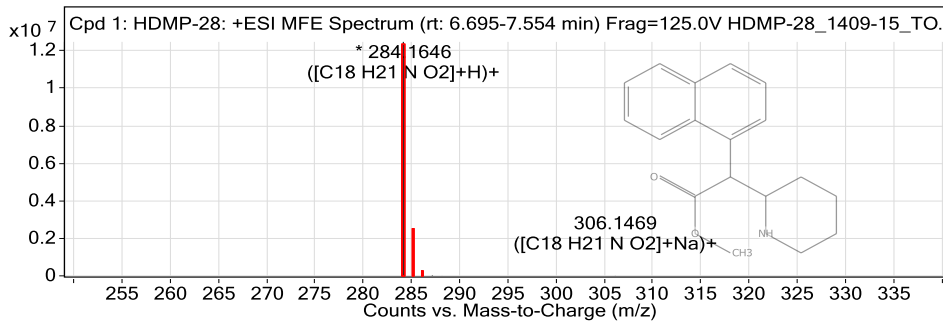
Label	Compound Name	MFG Formula	Obs. RT	Obs. Mass
Cpd 1: HDMP-28	HDMP-28	C18 H21 N O2	6.755	283.1573

Name	Obs. m/z	Obs. RT	Obs. Mass	DB RT	DB Formula	DB Mass	DB Mass Error (ppm)
HDMP-28	284.1646	6.755	283.1573	6.76	C18 H21 N O2	283.1572	-0.38

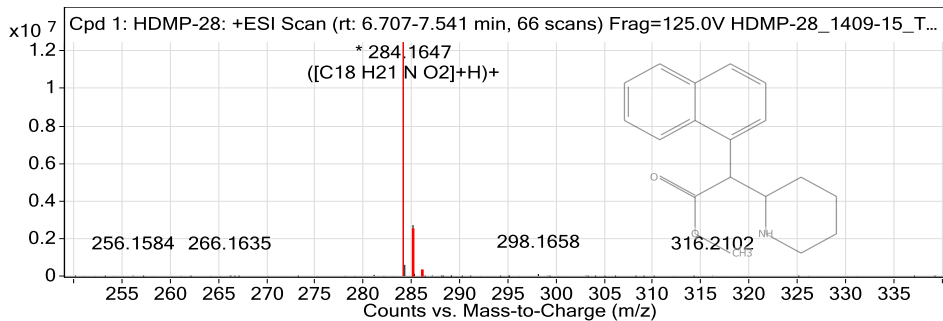
Compound Chromatograms



MFE MS Zoomed Spectrum



MS Zoomed Spectrum



MS Spectrum Peak List

Obs. m/z	Charge	Abund	Formula	Ion/Isotope
284.1646	1	12468649	C18 H21 N O2	(M+H)+
285.168	1	2363823.98	C18 H21 N O2	(M+H)+
286.1714	1	271689.12	C18 H21 N O2	(M+H)+
287.1738	1	23983.18	C18 H21 N O2	(M+H)+
288.1795	1	2276.06	C18 H21 N O2	(M+H)+
306.1469	1	4348.95	C18 H21 N O2	(M+Na)+

--- End Of Report ---

Peak Integration Report

Sample Name:	HDMP-28_1409-15_IC	Inj. Vol.:	25,00
Injection Type:	Unknown	Dilution Factor:	1,0000
Program:	ANIONI	Operator:	kemija
Inj. Date / Time:	11-jan-2016 / 17:23	Run Time:	42,00

No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount mg/L
1,00	8,78	Chloride	BMB	9,63	44,19	n.a.
		TOTAL:		9,63	44,19	0,00

