
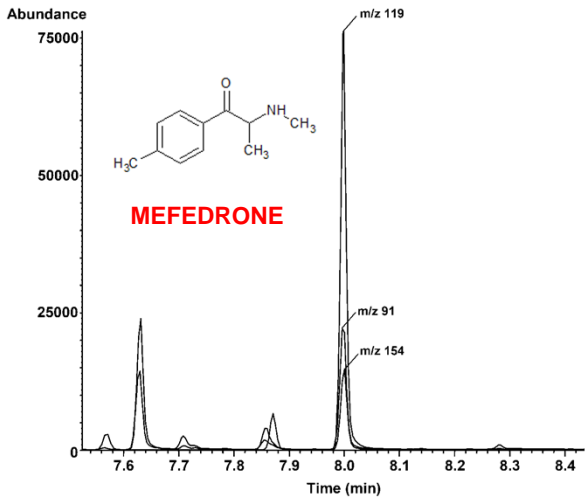


**INDAGINI AUTOPTICHE** *Catinoni e cannabinimimetici*



**Nuove droghe:  
le prime vittime**

*Toxicological findings in a fatal multidrug intoxication involving mephedrone*  
E. Gerace, M. Petrarulo, F. Bison, A. Salomone, M. Vincenti  
Forensic Science International, 2014, 243, 68-73



**MEFEDRONE**

**25 anni – trovato morto  
nel suo appartamento**

Cannabinoidi sintetici, catinoni sintetici, fenetilamine, fenciclidine

**THC**

**CBD**

**CBN**

**HU-210**

**JWH-018**

**JWH-122**

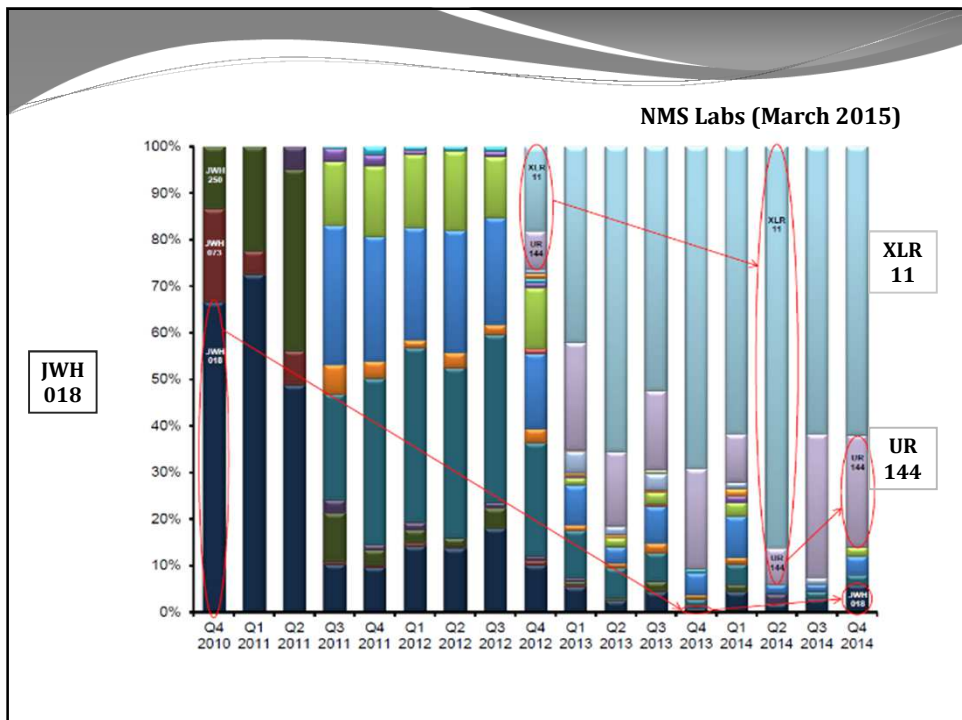
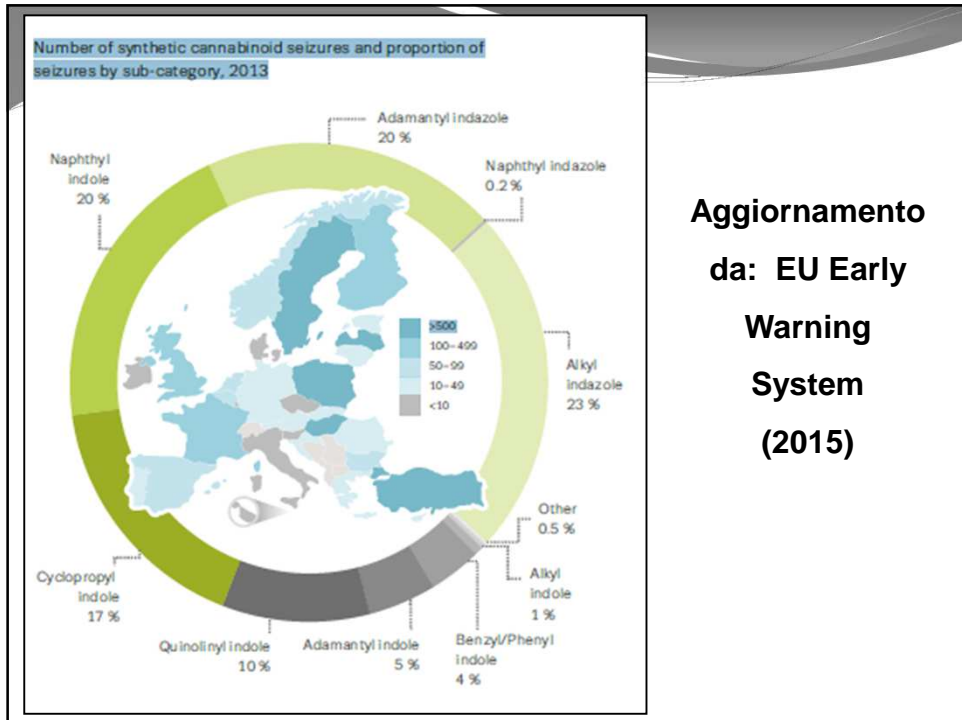
**JWH-073**

**JWH-250**

**CP 47,497**

**CP 47,497 C8**

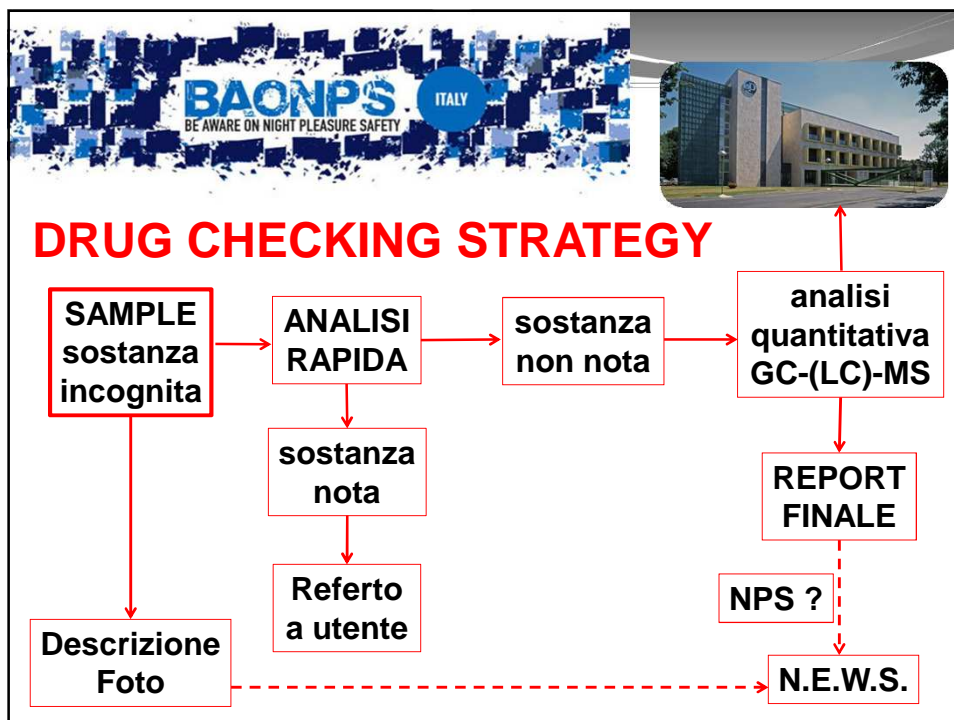
Quale sarà la prossima generazione?





- Progetto finanziato dall'Unione Europea (ref. JUST/2014/JDRU/AG/DRUG)
- Partners: DrogArt (Slovenia), APDES (Portugal) and FixPunkt (Germany)
- **Identificare le NPS e informare Early Warning System**
- **Aumentare la consapevolezza e la conoscenza sui rischi ed effetti fra i "partygoers"**
- **Comprendere i profili di consumo nella popolazione giovanile e le tendenze attuali e future**
- **Mantenere uno stretto collegamento con i Servizi per le Dipendenze della Sanità pubblica**

**DRUG CHECKING**



## Spettroscopia Raman

### TruNarc



### Color coded scan results



#### Alarm result

The instrument identified one or more controlled substances



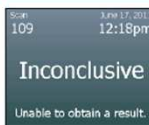
#### Precursor/Warning result

The instrument identified a precursor used in the manufacturing of illegal drugs



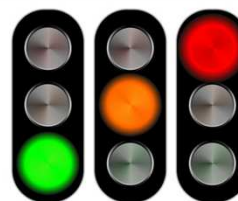
#### Clear result

The instrument did not identify any controlled substances



#### Inconclusive result

The instrument did not identify any of the controlled substances precursors, or cutting agents in the library




## TruNarc: Narcotics Identification capability

**TruNarc CAN Identify:**


- Cocaine
- Heroin
- Ketamine
- Methamphetamine
- MDMA (ecstasy)
- Synthetic Cannabinoids
  - In 'bulk' and after sprayed on leaves
- GHB / GBL
- Morphine
- PCP
- Oxycodone (high and low dose)
- Methadone
- MDPV
- + Many others!

Simple, quick, accurate test with easy to interpret results



**TruNarc CANNOT Identify:**

- Marijuana / Hashish / LSD / Opium
- Too fluorescent for Raman



## TruNarc Substance Library: Display Names


**Alarm**

Scan Result

321

Fentanyl

1. 250-NBOMe	47. 5-APB	76. AKS40 (PNAICA)	120. Ethcathinone	167. Methadone
2. 25C-NBOMe	48. 5-Chloro-AB-PNAICA	77. alpha-Methyltryptamine (AMT)	121. Etyhnone (cathinone)	168. Methamphetamine
3. 25D-NBOMe	49. 5-DBTIV	78. alpha-PVP (cathinone)	122. Erythronide	169. Methaqualone
4. 25E-NBOMe	50. 5-GAPB	79. AM-1235 (cathinone)	123. Etizoxim	170. Mefenorex
5. 25F-NBOMe	51. 5-Fluoro-ABICA	80. AM-1241 (cathinone)	124. FDU-FB-22 (cathinone)	171. Methedrone (cathinone)
6. 25N-NBOMe	52. 5-Fluoro-AB-PNAICA	81. AM-2201 (cathinone)	125. Fenethylone	172. Methcathinone (MOC)
7. 25P-NBOMe	53. 5-Fluoro-ADBICA	82. AM-2233 (cathinone)	127. Finghedrone (cathinone)	173. Methoxyphenidine (MOP)
8. 25T4-NBOMe	54. 5-Fluoro-AKS40 (cathinone)	83. AM-630 (cathinone)	128. Flubromazepam	174. Mephylene (cathinone)
9. 25T7-NBOMe	55. 5-Fluoro-AMK40 (cathinone)	84. AM-636 (cathinone)	129. FUB-AMB (cathinone)	175. Methylphenidate
10. 2-AI (Amiroindan)	56. 5-Fluoro-AMB (cathinone)	85. Amphetamine	130. FUB-FB-22 (cathinone)	176. MN-18 (cathinone)
11. 2C-8 (phenethylamine)	57. 5-Fluoro-MN-18	86. APICA (cathinone)	131. Fursyl tertanyl	177. MN-04 (NMI) (cathinone)
12. 2C-D (phenethylamine)	58. 5-Fluoro-NMI (cathinone)	87. APF-CHMINACA (cathinone)	132. Gaspentin	178. MN-25 (cathinone)
13. 2C-D (phenethylamine)	59. 5-Fluoro-NPS-22	88. APF-PICA (cathinone)	133. GBL	179. Morphine
14. 2C-E (phenethylamine)	60. 5-Fluoro-PB-22	89. BP-22 (cathinone)	134. GHB	180. MPPP (cathinone)
15. 2C-H (phenethylamine)	61. 5-IAI	90. BK-SIC-9	135. Heroin	181. Naphyrone (cathinone)
16. 2C-I (phenethylamine)	62. 5-IT	91. Bromo-drageFLY (phenethylamine)	136. HU-210 (cathinone)	182. Nimetazepam
17. 2C-N (phenethylamine)	63. 5-MAPB	92. Buphedrone (cathinone)	137. HU-211 (cathinone)	183. Nicotinic
18. 2C-P (phenethylamine)	64. 5-MKO-DALT	93. Buprenorphine	138. Hydromorphone	184. NPS-22 (cathinone)
19. 2C-T (phenethylamine)	65. 5-MKO-DPT	94. Butabital	139. JWH-015 (cathinone)	185. NRG-3 (cathinone)
20. 2C-T-7 (phenethylamine)	66. 6-APB	95. Butylone (cathinone)	140. JWH-018 (cathinone)	186. Oxazepam
21. 2-EMC (cathinone)	67. 6-EAPB	96. BCP	141. JWH-019 (cathinone)	187. Oxycodone
22. 2-Fluoromethamphetamine	68. 7-APB	97. Cartoprodiol	142. JWH-020 (cathinone)	188. Oxycodone
23. 2-MAPB	69. AB-001 (cathinone)	98. Cathinone	143. JWH-023 (cathinone)	189. PB-22 (cathinone)
24. 2-MMC (cathinone)	70. AB-CHMINACA (cathinone)	99. Chlorthalidone	144. JWH-081 (cathinone)	190. PCP
25. 3-Chloromethylcathinone (3-CMC)	71. AB-FUBINACA (cathinone)	100. Clozapem	145. JWH-122 (cathinone)	191. Perfedrone (cathinone)
26. 3-EMC (cathinone)	72. AB-PNAICA (cathinone)	101. Clozapem	146. JWH-122 (cathinone)	192. Pentylone (cathinone)
27. 3-Fluoro-amphetamine	73. Acetyl tertanyl	102. Cocaine	147. JWH-203 (cathinone)	193. Phentermine
28. 3-Fluoropropionamide	74. ADB-FUBINACA	103. Cocaine base	148. JWH-210 (cathinone)	194. PMA
29. 3-HMC (cathinone)	75. AH-7921	104. Cocaine HCl	149. JWH-250 (cathinone)	195. PMEA
30. 3-MKO-PCP		105. Cocaine	150. Ketamine	196. PMMA
31. 3-MMC (cathinone)		106. CP-47 497 (cathinone)	151. Lidocainethylamine	197. Praxidolone
32. 4-APB		107. CUMYL-THPNAICA (cathinone)	152. MAB-CHMINACA (cathinone)	198. PX-1 (cathinone)
33. 4-Bromomethylcathinone (4-BMC)		108. Cyclooxazepam	153. MAM-2201 (cathinone)	199. PX-2 (cathinone)
34. 4-Chloro-2,5-DMA (4-CMC)		109. Dextromethorphan (DMX)	154. mCPDP	200. RCT-4 (cathinone)
35. 4-Chloromethylcathinone (4-CMC)		110. Diazepam	155. MDA	201. RCT-8 (cathinone)
36. 4-Fluoro-amphetamine		111. Divalproex (div-DMBC)	156. MDJ	202. STS-135
37. 4-Fluoro-methamphetamine		112. Disazepam	157. MDEA	203. Trazepam
		113. Dimethyl cathinone	158. MDMA	204. TRMP
		114. Dimethyl methylcathinone	159. MDMB-CHMICA (cathinone)	205. THU-2201 (cathinone)
		115. Dimethylammonex (DMAX)	160. MDPSP (cathinone)	206. Tramadol
		116. Dimethylpyramine (DMT)	161. MDPV (cathinone)	207. U-67703
		117. Diphenidine	162. MDPVP (cathinone)	208. UR-144 (cathinone)
		118. Diphenpropionol (DPPM)	163. MDPV (cathinone)	209. UR-144 analog (cathinone)
		119. EAM-2251 (cathinone)	164. Mephedrone (cathinone)	210. W-18
			165. Mephramine (MPTA)	211. XLR-11 (cathinone)
			166. Mescaline-NBOMe	212. XLR-11 N-(4-pentyl)
				213. Zolpam



SCHEDULED COMPOUNDS

**Scan Result**  
729  
Clear  
Benzocaine

- 2-Ethylamino-1-phenylbutane
- Atropine
- Atropine
- Baby powder
- Baking soda
- Benzocaine
- Boric acid
- Bucine
- Caffeine
- Calcium carbonate
- Calcium stearate
- Calcium sulfate
- Cellulose
- Chloroquine
- Chloric acid
- Confessioner's sugar
- Corn starch
- Creatine
- Dextrose
- Diazepam
- Dimethyl aminoantipyrine
- Dimethyl sulfone
- Diphenhydramine (Benadryl)
- Dipyrene
- Epsom salt
- Ethanol
- Fructose
- Glucose
- Glutamine
- Grisofulvin
- Guafenesin
- Gypsum
- Lactose
- Lactose (Tetramisole)
- Lidocaine
- Lorazepam
- Low density polyethylene
- Magnesium stearate
- Magnesium sulfate
- Maltose
- Mannitol
- Methyl salicylate
- Methylhexanamine (DMAA)
- Minoxidil
- Naloxone
- Nicotinamide
- Nicotine
- Nicotinic acid
- N-Methyl-phenethylamine
- Noocapine
- Papaverine
- Phenacetin
- Phenethylamine
- Pracastam
- Plaster of Paris
- Polypropylene glycol
- Polyethylene glycol
- Polyethylene terephthalate
- Polypropylene
- Polyvinyl chloride
- Procaine
- Propylphenazone
- Quinine
- Saccharin
- Silicon dioxide
- Sodium sulfate
- Sorbitol
- Sucrose
- Sugar
- Tetracaine
- Theophylline
- Titanium oxide
- Vitamin C

**Precursor/Chemical**

**Scan Result**  
726  
Ammonium nitrate  
Precursor/Chemical

- 1,4-Butanediol
- Acetic acid
- Acetic anhydride
- Acetone
- Acetyl bromide
- Acetyl chloride
- Ammonium chloride
- Ammonium nitrate
- Ammonium sulfate
- Antranilic acid
- APAA
- Barium sulfate
- Benzic acid
- Bromobenzene
- Chloroephedrine/Chloropseudoephedrine
- Chloroform
- Chlorophenyl cyclopentyl ketone
- Chloropseudoephedrine
- Cyclohexane
- Cyclohexanone
- Dichloromethane
- Diethyl ether
- Dihydrostrole
- Dimethylacetamide
- Ethyl acetate
- H-Ph- Cyclohexylamide
- Hydroxylamine
- Hypophosphorous acid
- Isopropanol
- Isosalitrole
- Lead acetate
- Methanol
- Methyl ethyl ketone (MEK)
- Methylamine HCl
- Norpseudoephedrine
- Palladium chloride
- Phenethylamine
- Phenyl-2-propanone (P2P; BMK)
- Phenylacetic acid
- Phenylpropene
- Phosphoric acid
- Piperidine
- Piperonal
- Piperonyl methyl ketone (PMK; MDP2P)
- PMK (MDP2P) methyl glycidate
- Potassium permanganate
- Propyl acetate
- Pseudoephedrine
- Red phosphorus
- Saltrol
- Sodium acetate
- Sodium carbonate
- Sulfuric acid
- Toluene
- White Fuel (camping)
- Xylene

**Warning**

**Scan Result**  
727  
Acetaminophen (Paracetamol)  
Cannot rule out presence of narcotics.

- Acetaminophen (Paracetamol)
- Aspirin
- Ephedrine
- Ibuprofen

Note: These substances have a strong flamm signal which can mask other narcotics. Additional testing via an alternate method is recommended.

## TruNarc: Come funziona?


**UTILIZZATORE**

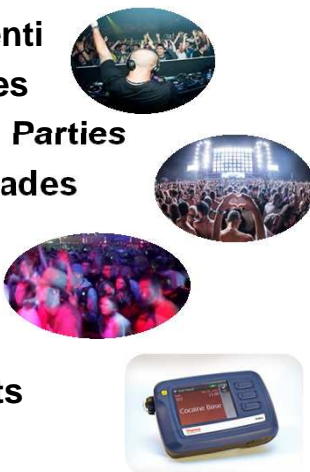
**OPERATORE**



- ✓ **Analisi non-invasiva e non-distruttiva**
- ✓ **Analisi rapida (meno di 1 minuto)**
- ✓ **La sostanza non viene manipolata dall'operatore**

# BAONPS ITALY: Drug Checking

- **14 Grandi Eventi**
  - **Goa Parties**
  - **Free/Rave Parties**
  - **Street Parades**
- **5 Regioni**
- **Più di 400 tests**
- **Warnings to National Early Warning System**




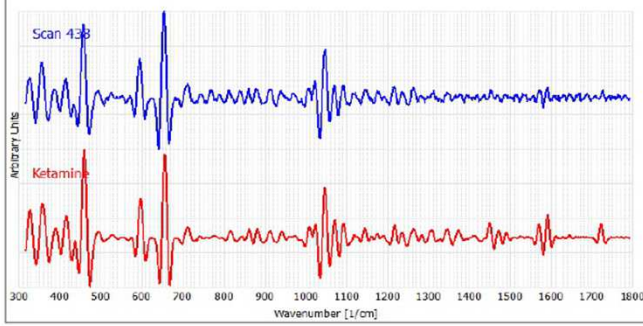


### TruNarc Scan Report

Created 11/17/16

Scan 438  <b style="color: white;">Ketamine</b>	ott 06, 2016 12:36	<b>Scan Result:</b> Alarm Name: Ketamine Scan ID: 438 Analyzer SN: TN3119 Time: ott 06, 2016 12:36:09	<b>Previous check:</b> Self Check Passed Scan ID: 437 Performed: ott 06, 2016 12:34:06 <b>Next check:</b> Self Check Passed Scan ID: 446 Performed: ott 16, 2016 02:24:06	
--	-----------------------	---	--	---



Scan 438  
 Detector: UNIS  
 Ketamin  
 Wavenumber [1/cm]

Comments: GC-MS: KETA 99%  
 Case ID:  
 Form: White powder  
 User declaration: Keta

**MIXTURE**

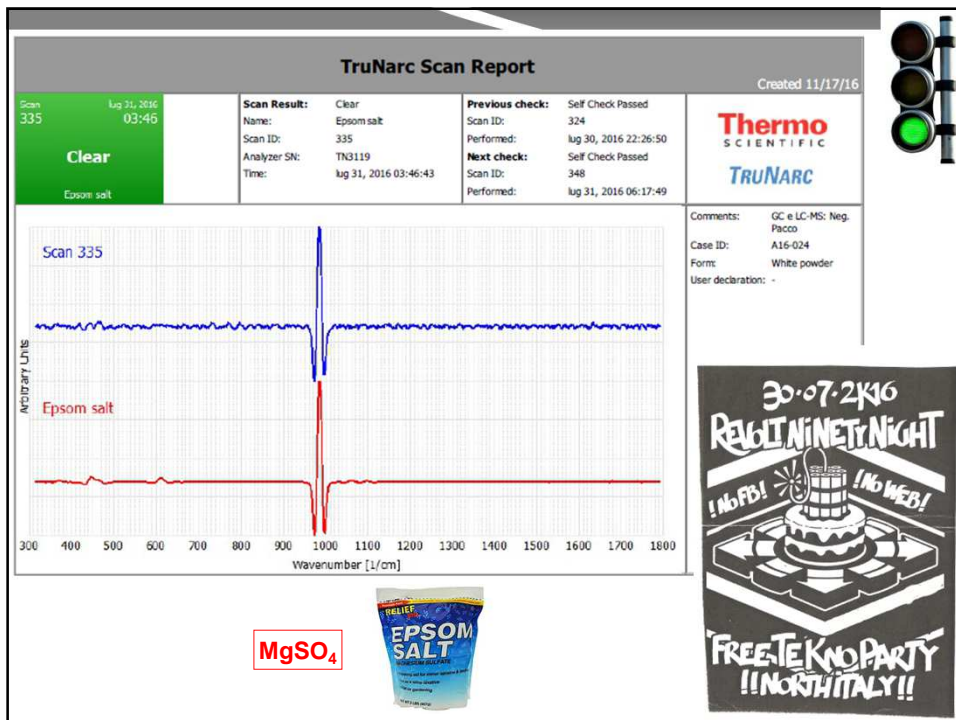
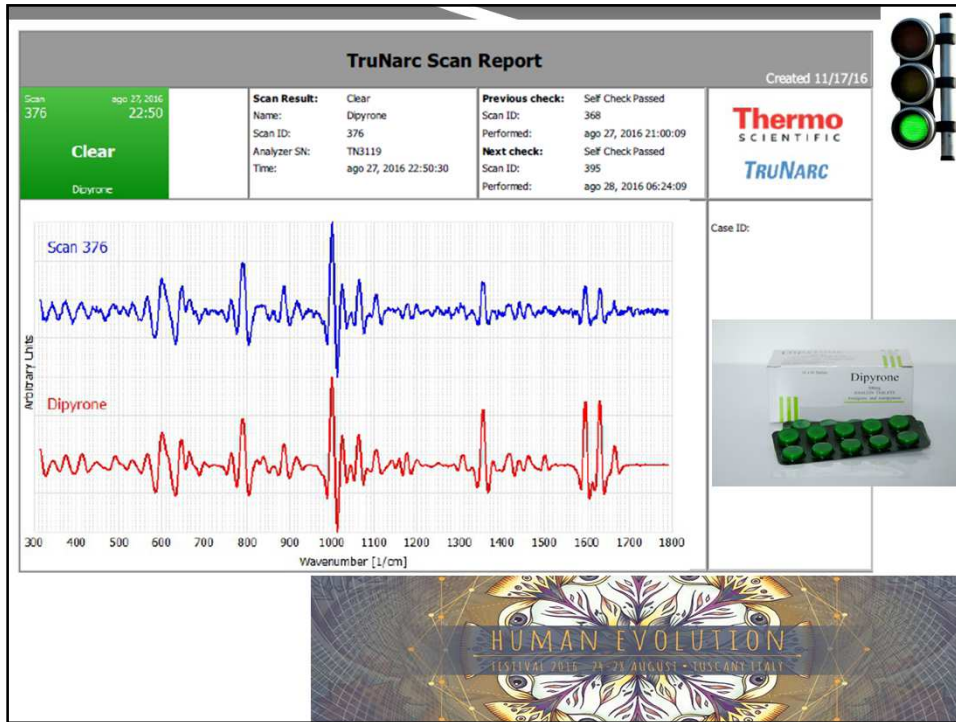
➤ **GC/LC-MS:**  
**Methylone (26%)**  
**4-FA (56%)**



**TruNarc Scan Report** Created 11/17/16

<b>Scan 260</b> mag 29, 2016 00:20 <b>Pseudoephedrine</b> Precursor/Chemical	<b>Scan Result:</b> Warning Name: Pseudoephedrine Scan ID: 260 Analyzer SN: TN3119 Time: mag 29, 2016 00:20:00	<b>Previous check:</b> Self Check Passed Scan ID: 259 Performed: mag 29, 2016 00:16:07 <b>Next check:</b> Self Check Passed Scan ID: 261 Performed: mag 29, 2016 22:57:15	<b>Thermo SCIENTIFIC</b> <b>TRUNARC</b> Comments: ACTIFED Case ID: A16-014 Form: White powder User declaration: Ketamine
---	--	--	---

**Colorimetric: MARQUIS/MANDELIN (no reaction)**  
**GC/LC-MS: Pseudoephedrine and Triprolidine**







 **DRUG CHECKING**  
Raman Spectra and Lab Confirmation  
NPS DETECTION 


- **Luogo:** Torino, Piemonte
- **Tipo di campione:** Polvere bianca
- **Secondo l'utente:** Speed (Amfetamina pura)

**DRUG CHECKING**

- Colorimetrico: MARQUIS (soft pink), MANDELIN (green)
- RAMAN: 4-fluoroamphetamine (4-FA)
- GC/LC-MS: **4-fluoroamphetamine (4-FA)**

 **DRUG CHECKING**  
Raman Spectra and Lab Confirmation  
NPS DETECTION 

- **Luogo:** Pisa, Toscana
- **Tipo di campione:** «Francobollo»
- **Secondo l'utente:** Amide di acido lisergico (LSA)




**DRUG CHECKING**

- Colorimetrico: EHRLICH (no reaction)
- RAMAN: Inconclusivo
- GC/LC-MS: **25B-NBOMe (1000 µg)**

**BAONPS**  
BE AWARE IN NIGHT PLEASANT SAFETY


**DRUG CHECKING**  
Raman Spectra and Lab Confirmation  
NPS DETECTION



- **Luogo:** Perugia, Umbria
- **Tipo di campione:** «Francobollo rosso/nero»
- **Secondo l'utente:** LSD (125 µg)


**DRUG CHECKING**

- Colorimetrico: EHRlich (no reaction)
- RAMAN: Inconclusivo
- GC/LC-MS: **25I-NBOMe**



**BAONPS**  
BE AWARE IN NIGHT PLEASANT SAFETY


**DRUG CHECKING**  
Raman Spectra and Lab Confirmation  
NPS DETECTION



- **Place:** Torino, Piemonte
- **Tipo di campione:** Pillola blu (superman logo)
- **Secondo l'utente:** Mescalina + Amfetamina

**DRUG CHECKING**

- Colorimetrico: MARQUIS/LIEBERMAN (no reaction)
- RAMAN: Inconclusivo
- GC/LC-MS: **5-Meo-MiPT**  
*(5-methoxy-N-methyl-N-isopropyltryptamine)*




**BAONPS**  
BE AWARE IN NIGHT PLEASURE SAFETY


## DRUG CHECKING

### Raman Spectra and Lab Confirmation

### NPS DETECTION



- **Luogo:** Arezzo, Toscana
- **Tipo di campione:** Pillola gialla (no logo)
- **Secondo l'utente:** Mescaline + 2C-B (Solaris)




**DRUG CHECKING**

- Colorimetrico: non eseguito
- RAMAN: Inconclusivo
- GC/LC-MS: **25I-NBOMe (6 µg/mg)**

**BAONPS**  
BE AWARE IN NIGHT PLEASURE SAFETY

## DRUG CHECKING: SUMMARY

### Raman Spectra and Lab Confirmation



**ATTESI & CONFERMATE**

<u>DRUGHE</u>	<u>N° Identificazioni positive</u>
MDMA	63 campioni
Ketamina	41 campioni
Amfetamina	28 campioni
Cocaina	14 campioni
LSD	2 campioni
N,N-dimetiltriptamina (DMT)	1 campione
2,5-dimetossi-4-cloroamfetamina (DOC)	1 campione
2,5-dimetossi-4-metilamfetamina (DOM)	1 campione
Ossicodone	1 campione
Mefedrone	1 campione
<b>TOTALE</b>	<b>153 campioni</b>

*Last update: October 2016*

## DRUG CHECKING: fakes & hazards

### ATTESA:

MDMA  
MDMA  
MDMA  
MDMA  
MDMA  
MDMA  
MDMA  
MDMA  
MDMA  
AMP  
AMP  
AMP  
AMP+mescalina  
Ketamina  
Ketamina  
LSD  
LSA  
Solaris

### TROVATA:

Metilone  
Amfetaminae (3 casi)  
Metronidazolo  
Levomepromazina  
Lidocaina (2 casi)  
Buprenorfina + Lidocaina  
Dipirone  
Eroina - 36%!  
Caffeina (7 casi)  
Metilone + 4-fluoroamfetamina  
Modafinil  
5-MeO-MiPT  
Cocaina  
Pseudoefedrina  
25I-NBOMe  
25B-NBOMe  
25I-NBOMe



## DRUG CHECKING: truffe & rischi

DICHIARATO MDMA: 75 Campioni



Composto trovato

- n = 63 → MDMA
- n = 3 → Amphetamine
- n = 2 → Lidocaine
- n = 1 → Heroin
- n = 1 → Metronidazole
- n = 1 → Dipyrone
- n = 1 → Baking Soda
- n = 1 → Levomepromazine
- n = 1 → Buprenorphine + Lidocaine
- n = 1 → Methylone



RISULTATI  
DISCORDANTI 16%



ASSUNZIONE  
INCONSAPEVOLE



## Assunzione inconsapevole - Erbe

**POLI-ABUSO - Domanda: è reale? Sì, ma non-intenzionale**

- Non c'è corrispondenza sistematica tra il nome della miscela (erbe da fumo) e il componente attivo
- Gli ingredienti attivi variano da lotto a lotto, anche se riportano lo stesso nome commerciale
- Le concentrazioni variano fra un pacchetto e l'altro dello stesso prodotto commerciale
- Alcune miscele contengono due o più composti attivi

**I CONSUMATORI SONO RARAMENTE CONSAPEVOLI DELLA REALE COMPOSIZIONE DI CIO' CHE ASSUMONO**

## New Psychoactive Substances



Drug and Alcohol Dependence 161 (2016) 200–205

Contents lists available at ScienceDirect

Drug and Alcohol Dependence

journal homepage: [www.elsevier.com/locate/drugalcdep](http://www.elsevier.com/locate/drugalcdep)

Full length article

Detection of "bath salts" and other novel psychoactive substances in hair samples of ecstasy/MDMA/"Molly" users

Joseph J. Palamar<sup>a,b,\*</sup>, Alberto Salomone<sup>c</sup>, Marco Vincenti<sup>c,d</sup>, Charles M. Cleland<sup>b,e</sup>

Publicato:  
DAD 2016



**18 eventi notturni (15 nightclubs - 3 grandi festival)**

**Ai partecipanti intervistati era richiesto di donare un campione di capelli**



## New Psychoactive Substances

- 679 interviste
- 177 campioni

TESTATI PER:

- 40 cannabinoidi sintetici
- 31 catinoni sintetici e altre NPS
- Droghe tradizionali d'abuso



## CATINONI SINTETICI

POPOLAZIONE → 48 si dichiarano utilizzatori di MDMA



- n = 34 dichiarano di non aver mai usato "bath salts" o pillole/polveri sconosciute
- n = 6 dichiarano uso continuato di "bath salts"
- n = 1 dichiara uso continuato di "bath salts" e pillole/polveri sconosciute
- n = 7 dichiarano uso continuato di pillole/polveri sconosciute

Drug detected	n	%
None	13	58.8
MDMA	7	
Butilone	5	41.2
MDMA + Butilone	4	
MDMA + Butilone + Metilone	2	
MDMA + Butilone + Metilone + alpha-PVP	1	
MDMA + 5/6-APB	1	
MDMA + 4-FA	1	

REPORT DISCORDANTE


Drug and Alcohol Dependence 2016, 161: 200-205

**A. Salomone et al. Drug Testing and Analysis (2014) 6, 126-134**

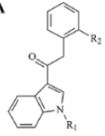



**23 analiti ricercati**  
**Periodo di investigazione (anni 2011-12)**

**Confrontare la diffusione dei cannabinimimetici fra differenti popolazioni di consumatori di sostanze stupefacenti e alcol**

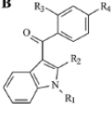


**A**



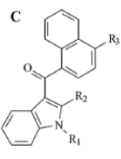
Compound	R <sub>1</sub>	R <sub>2</sub>
11 JWH-203	pentyl	chloro
9 JWH-250	pentyl	methoxy
12 JWH-251	pentyl	methyl
17 RCS-8	2-cyclohexylethyl	methoxy

**B**



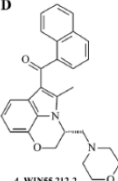
Compound	R <sub>1</sub>	R <sub>2</sub>	R <sub>3</sub>	R <sub>4</sub>
5 AM-694	5-fluoropentyl	H	iodo	H
8 RCS-4	pentyl	H	H	methoxy
1 WIN 48,098	4-ethylmorpholino	methyl	H	methoxy

**C**



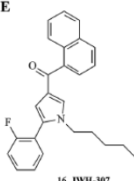
Compound	R <sub>1</sub>	R <sub>2</sub>	R <sub>3</sub>
2 AM-1220	1-methylpiperidin-2-yl-methyl	H	H
6 AM-2201	5-fluoropentyl	H	H
15 JWH-607	pentyl	methyl	H
7 JWH-015	propyl	methyl	H
13 JWH-018	pentyl	H	H
19 JWH-019	hexyl	H	H
23 JWH-020	heptyl	H	H
10 JWH-073	butyl	H	H
14 JWH-081	pentyl	H	methoxy
18 JWH-122	pentyl	H	methyl
3 JWH-200	2-morpholin-4-yl-ethyl	H	H
21 JWH-210	pentyl	H	ethyl
22 JWH-398	pentyl	H	chloro

**D**



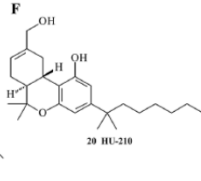
4 WINSS,212-2

**E**

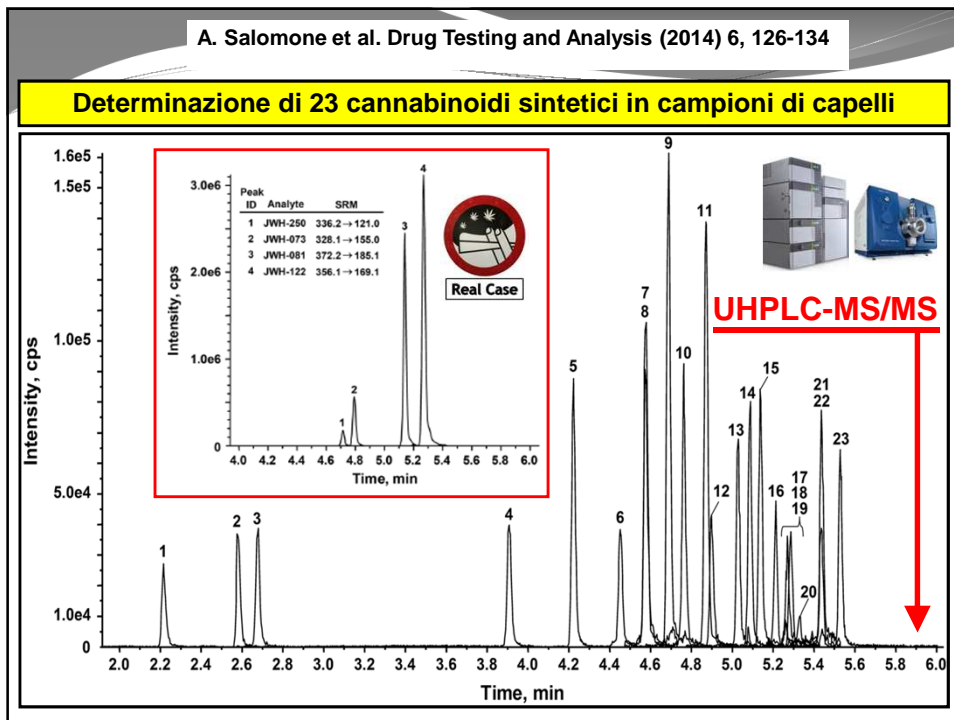


16 JWH-307

**F**



20 HU-210





## A. Salomone et al. Drug Testing and Analysis (2014) 6, 126-134

➤ 344 campioni di capelli

- 264 già positivi a sost. stupefacenti
- 80 già positivi ad alcol (EtG > 30)

**Table 3.** Synoptic summary of real samples positive to synthetic cannabinoids

Positive case	Group	Age	Gender	Type of hair	JWH-018 (pg/mg)	JWH-073 (pg/mg)	JWH-250 (pg/mg)	JWH-081 (pg/mg)	JWH-122 (pg/mg)	JWH-210 (pg/mg)	JWH-019 (pg/mg)	AM-1220	Other findings <sup>a</sup>
1	A	24	M	head	-	1.6	-	-	-	-	-	-	THC: 0.05 ng/mg; MDMA: 0.56 ng/mg
2	A	27	F	head	17.3	7.6	83.4	12.3	-	-	-	-	THC: 0.07 ng/mg
3	A	22	M	head	-	1.9	26.9	-	-	-	-	-	THC: 0.05 ng/mg; MDMA: 0.57 ng/mg
4	A	32	F	head	-	1.8	-	-	-	-	-	-	THC: 0.28 ng/mg
5	A	23	M	head	-	5.2	5.8	-	11.7	-	-	-	THC: 0.09 ng/mg
6	A	20	M	head	10.4	2.0	6.0	-	2800	2.3	-	1.3	THC: 0.14 ng/mg
7	A	25	M	head	-	1.8	-	-	-	-	-	-	THC: 0.27 ng/mg; AMP: 3.05 ng/mg; MDMA: 0.56 ng/mg
8	A	26	M	head	-	-	-	8.0	-	-	-	-	THC: 4.57 ng/mg; MDMA: 0.17 ng/mg
9	A	18	M	head	-	50.5	6.4	194	710	-	-	-	THC: 0.09 ng/mg
10	A	23	M	head	-	1.6	-	-	760	-	-	-	THC: 0.11 ng/mg
11	A	21	M	head	3.1	1.6	-	81.4	-	5.1	-	-	THC: 0.24 ng/mg
12	A	23	M	head	-	9.0	4.8	-	40.9	-	-	-	THC: 0.15 ng/mg
13	B	21	M	head	-	-	-	-	7.4	-	-	-	COC: 1.76 ng/mg; BZE: 0.22 ng/mg
14	B	32	F	head	-	-	-	-	11.2	-	3.8	-	COC: 0.60 ng/mg; BZE: 0.09 ng/mg; MOR: 0.08 ng/mg; 6-AM: 0.25 ng/mg
15	B	22	M	head	-	-	-	47.8	15.8	-	4.1	-	COC: 0.61 ng/mg; AMP: 0.53 ng/mg; MDMA: 0.89 ng/mg

<sup>a</sup>THC: Δ<sup>9</sup>-tetrahydrocannabinol; MDMA: 3,4-methylenedioxyamphetamine; AMP: Amphetamine; COC: Cocaine; MOR: Morphine; 6-AM: 6-acetylmorphine.

## « DRUG-FACILITATED CRIMES »

### Reati di violenza sessuale - Legislazione in Italia

L'articolo 609-bis punisce la violenza sessuale con la reclusione da 5 a 10 anni.

Pene aggiuntive per:

- ❖ L'utilizzo di armi, sostanze alcoliche, narcotiche o stupefacenti
- ❖ ....

#### Effetti delle « droghe da stupro » o « Rape drugs »:

- ❖ Sonnolenza e diminuzione dell'attenzione
- ❖ Sedazione
- ❖ Sottomissione e annullamento della volontà
- ❖ Amnesia anterograda
- ❖ Facilmente reperibili
- ❖ Facilmente somministrabili (incolore, inodore, insapore, solubili in acqua e alcol)



## « DRUG-FACILITATED CRIMES »

**singola assunzione di sostanza psicoattiva!**

- Tipiche “rape drugs”:

Benzodiazepine – Ipnotici – Sedativi

Ketamina

**GHB**

Narcotici

REQUISITI

Metodo versatile

**Estrema sensibilità**

Analisi segmentale

### Case report



- ✓ Lunghezza: 16 cm
- ✓ 0-6 cm: 6 segmenti di 1 cm (A→F)
- ✓ 6-16 cm: 5 segmenti di 2 cm (G→M)



- ✓ Lunghezza: 18 cm
- ✓ 0-18 cm: 9 segmenti di 2 cm (A→I)



- ✓ Lunghezza: 5 cm
- ✓ 0-5 cm: 2 segmenti di 2.5 cm (A→B)

# Risultati



• Segmento	• Finestra diagnostica • (Crescita stimata dei capelli: 1 cm/mese)	• Lunghezza (cm)	• Risultato (pg/mg)	
• A	• Ottobre 2009-Novembre 2009	1		Δ <sup>9</sup> -THC (24)
• B	• Settembre 2009-Ottobre 2009	1		Δ <sup>9</sup> -THC (24)
• C	• Agosto 2009-Settembre 2009	1	Zolpidem (2.8 )	Δ <sup>9</sup> -THC (50)
• D	• Luglio 2009-Agosto 2009	1		Δ <sup>9</sup> -THC (56)
• E	• Giugno 2009-Luglio 2009	1		Δ <sup>9</sup> -THC (47)
F	• Maggio 2009-Giugno 2009	1	Zolpidem (1.6)	Δ <sup>9</sup> -THC (166)
G	• Marzo 2009-Maggio 2009	2	Zolpidem (0.9)	
H	• Gennaio 2009-Marzo 2009	2		
I	• Novembre 2008-Gennaio 2009	2		
L	• Settembre 2008-Novembre 2008	2		
M	• Luglio 2008-Settembre 2008	2		

