



European Monitoring Centre  
for Drugs and Drug Addiction

# The role of the EMCDDA and the EU Early Warning System in the monitoring of new psychoactive substances in Europe

Paul Griffiths and Roumen Sedefov, International Conference New Drugs 2014, Rome, 14 -15 May 2014

# Overview

Locate the EWS within the context of:

- EMCDDA monitoring of the drug situation

Provide a brief overview of:

- historical developments
- the current situation



[emcdda.europa.eu](http://emcdda.europa.eu)

# EMCDDA: the EU drug information agency

28 Member States, Turkey and Norway

- A decentralized agency of the European Union based in Lisbon. Provides the EU and its Member States with a factual overview of European drug problems and a solid evidence base to support the drugs debate
- It also helps professionals and practitioners to pinpoint best practice and new areas of research
- *Under a three-step legal framework it plays a central role in identifying, monitoring and responding to new drugs including implementing...*
- **Real time EU Early warning system on new drugs** with National Early Warning Systems, Europol, EMA and other partners since 1997. Forensic science at the core of the system.



# The origins of the EWS

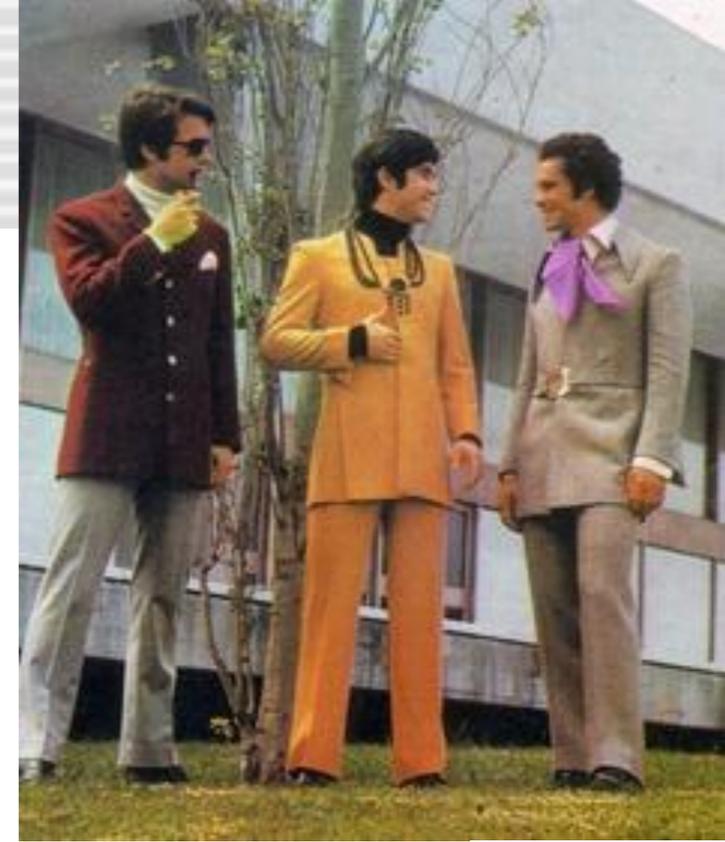
And why Europe was ahead of the game on the new drugs phenomenon...

214  
75  
If history repeats  
itself, and the  
unexpected always  
happens, how incapable  
must Man be of learning  
from experience.

*George Bernard Shaw*

# Old new drugs ... back in the 1970's

- Many things we might choose to forget
- Including 'look-alike drugs'
- Early legal high market (US)
  - Following clamp-down on the diversion of amphetamines
  - Caffeine, ephedrine & antihistamines, lidocaine
  - Names like U Zoom, HI Risers Supercaine, Ultracaine & Toot
  - Consumer interest.. but did substances fail to deliver?
  - Addressed by mixture of medicine regulation and consumer protection



It's A Real Novelty

# COCAINE

If you're in "**THE CROWD**" and need just a little something extra to impress the ladies (or gentlemen) in these times of inflation, just show off your stash of CHATTANOOGA TOOT-TOOT. Its authenticity in appearance and aroma will go unchallenged by even the most scrupulous **connoisseur**. Believe us — if your cocaine looks good, our CHATTANOOGA TOOT-TOOT NOVELTY COCAINE will look better.

Perfect novelty for parties and old fashion head gatherings. CHATTANOOGA TOOT-TOOT NOVELTY COCAINE will make you the life of any party, generating conversation to **last** and **stimulate** everyone throughout the night.

Mixed for perfection with a secret formula paralleled only by the formula for cocaine. We know it has the appearance and aroma similar to cocaine but the difference is **it's 100% legal**.

To order your CHATTANOOGA TOOT-TOOT NOVELTY COCAINE simply fill out order blank on reverse, or to save time and get immediate shipment call our office. We're open from 10:00 a.m. till 10:00 p.m. Monday through Saturday. Let your good **taste** show — order today. Call now! Dealer inquiries invited. Think of it as white gold.

**1-615-870-8616, Ext.401**

Not intended for human consumption



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Not intended for human consumption

# A deadly designer drug emerges (USA 1979)

## U.S. Drug Sleuths Finally Solve Mystery of the Deadly China White

**New Narcotic Identified  
After Monthlong Quest**

As Federal drug agents and California police stepped up their search for the sources of the China White, the forensic chemists turned their detection scales to a backlog of other, more routine cases. The challenge of identifying a new drug from the street comes no more than once or twice a year.



The New York Times / D. Gorton  
Andrew Allen, in lab at Drug Enforcement Administration, examines drug called China White

New York Times, 1980

# Legal highs – 1981 (£1.75)

## INTRODUCTION

The materials discussed in this book are legal despite the fact that they have psychotropic properties. Some are far more potent than many controlled substances. They have not been designated as illegal by any state or federal codes, because they are relatively obscure and have never been subjected to abuse. Although chemicals such as mescaline and lysergic acid amide are controlled by Title 21 of the United States Code (1970 edition), their plant sources (except for ergot and peyote) are not so controlled. It is therefore legal to possess San Pedro cactus, morning glory seeds, Hawaiian wood rose, etc., as long as there is no indication that they are intended for other than normal horticultural or ornamental purposes. The materials listed here are legal at the time of this writing. They may be outlawed at any future date. It may be of interest to some readers that the Church of the Tree of Life has declared as its religious sacraments most substances in this book. Because these substances were legal at the time of the Church's inception and incorporation, their use cannot be denied to members through any future legislation without directly violating the Constitution's guarantee of religious freedom.

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## CHEMICAL SOURCES

In earlier editions of *Legal Highs* we gave the names of several companies which sell various chemicals described in this book. Since that time, government restrictions have tightened. These companies have been ordered not to sell to individuals who are not part of an established research laboratory. Whenever we have published the names of suppliers of chemicals, the governmental authorities have made it a point to contact these companies and emphasize these restrictions. They are apparently not as concerned about herbs, plants and seeds as they are about chemicals.

Most the chemicals mentioned in *Legal Highs* are available from hundreds of chemical companies throughout the United States. To find the ones which carry the substance you seek, look in the annual listing entitled *Chemical Sources USA*, which may be found in any university library, or may be ordered from the publisher, Directories Publications, Inc., Flemington, N.J. This directory lists thousands of chemicals and tells which companies handle each substance. Because of the restrictions, it will be necessary to give the impression that you are a professional researcher who is using these substances on nonhuman subjects. It may be helpful to have a letterhead printed for your research group. Make your inquiries simply, soberly and discreetly. Good luck.

60

## Legal Highs



Adam Gottlieb

£1.75

## LEGAL HIGHS

LEGAL HIGHS is a concise encyclopedia of legal herbs and chemicals that possess psychoactive properties. Many of these potent substances are relatively unknown to both the general public and the legislatures. LEGAL HIGHS includes how they are obtained, how to use them and what their effects are.

Finally, this hard to obtain cult classic is once again available. Revised and updated.

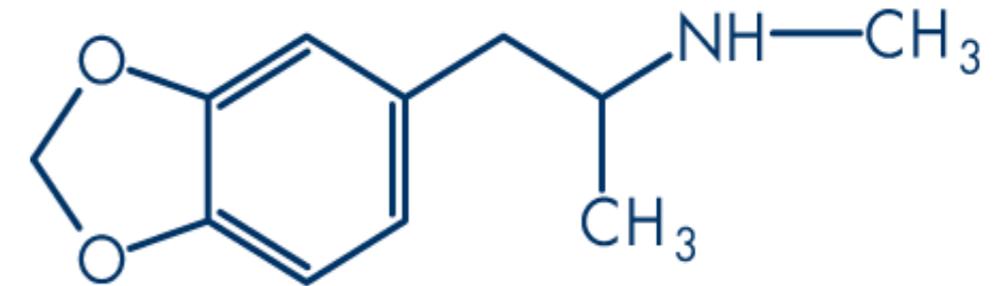
GREENHAM AND GOTTO

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# MDMA: a 100 years old 'new drug'

- First 'illicit' MDMA detected in Chicago in 1970 (analysed in 1972)
- Recreational use begins in earnest in the early 1980s
- Entrepreneurs in Texas produce and distribute MDMA using the brand name 'Sassyfras'
- Ordered by calling a free-phone number and paying by credit card and sold at bars (and subject to tax)



Holland, 2001



The rapid emergence of ecstasy in Europe as part dance music scene that:

- took policy and practice by surprise,
- generated considerable public concern, ...
- and raised the question could we be better prepared in the future to identify and respond to new threats?



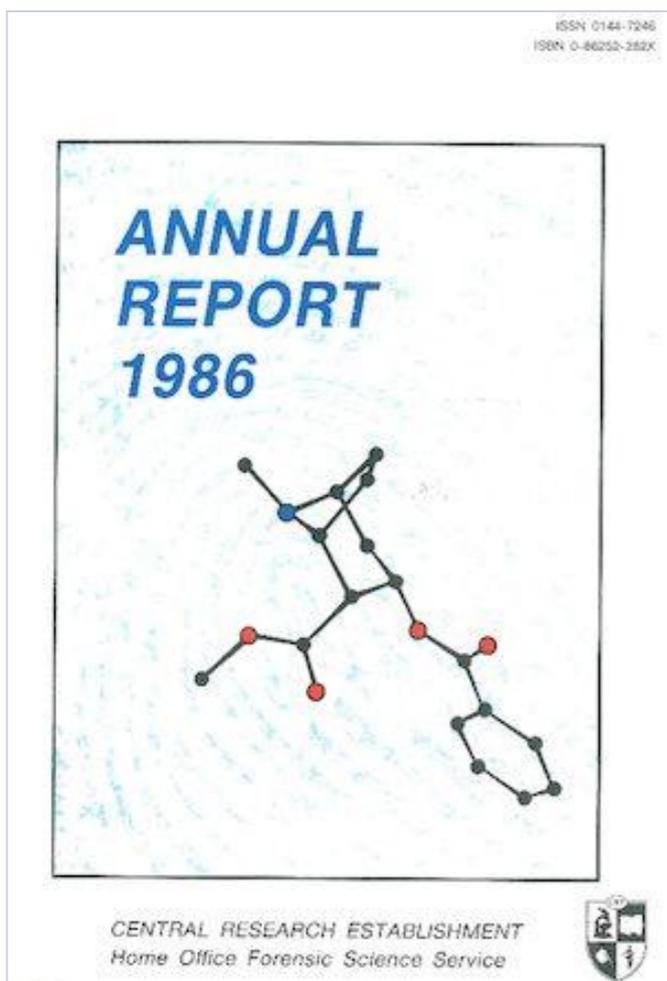
# Historical analysis of indicators of use & availability

- Experimentation early 1980s
- Mid-1980s trend began to be observable
- 1986 first forensic science report (UK)... 'passing fad'
- 1988 Second summer of love - widespread knowledge among young people
- Not until 1990s do we see policy awareness & data collection tools developed



**Lessons:** Information was available ... particularly **forensic science**, qualitative data, and add hoc but information but it was **not collated** or understood at the time. Need for a more proactive approach!

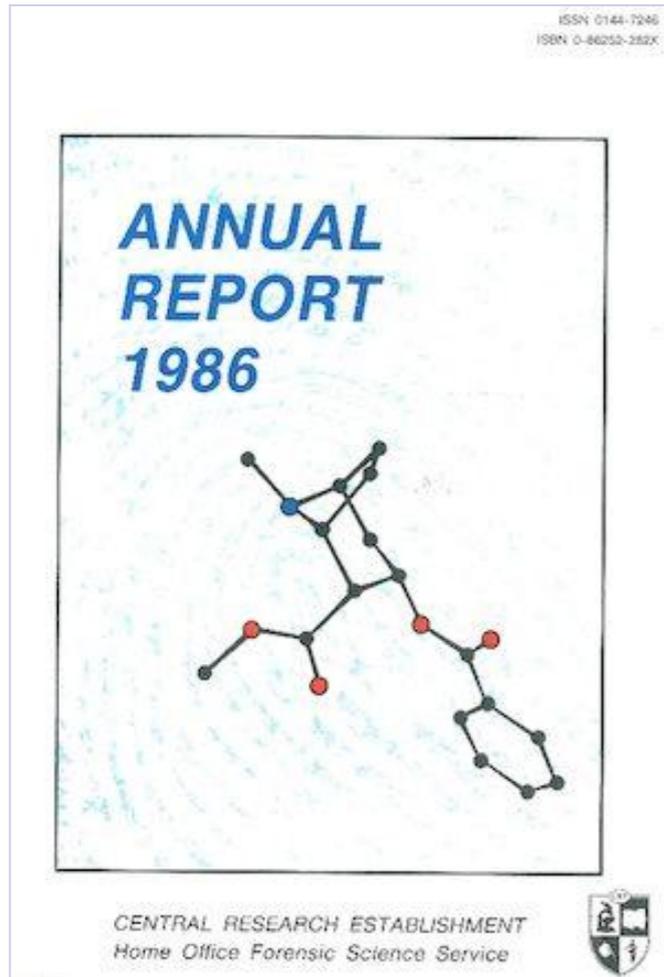
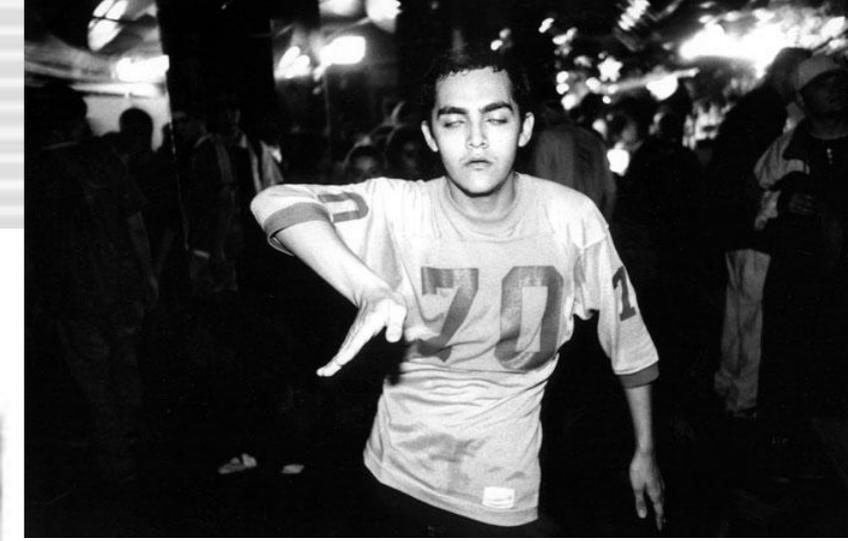
# 1986 first official report on MDMA



*DNA Laboratory*

A new form of cocaine freebase known as "crack" received much attention from the media during 1986 but there has been little evidence of this being available in the UK. Likewise, apart from isolated seizures of bromo-STP and methylenedioxy methyl amphetamine (MDMA), there has been no sign of the "designer drug" problem. The absence of such drugs in the UK is perhaps explained by the apparent ready availability of heroin, which during 1986 continued to be encountered in significant amounts, usually in the form of brown powders originating from the Indian sub-continent.

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# The EU EWS on NPS

Established in 1997 (Joint Action)

Scope extended in 1995 (council Decision)

Now comprises:

- 28 EU Member States
- Turkey and Norway
- The European Commission
- Europol
- European Medicines Agency



**EUROPOL**

Europol National Units

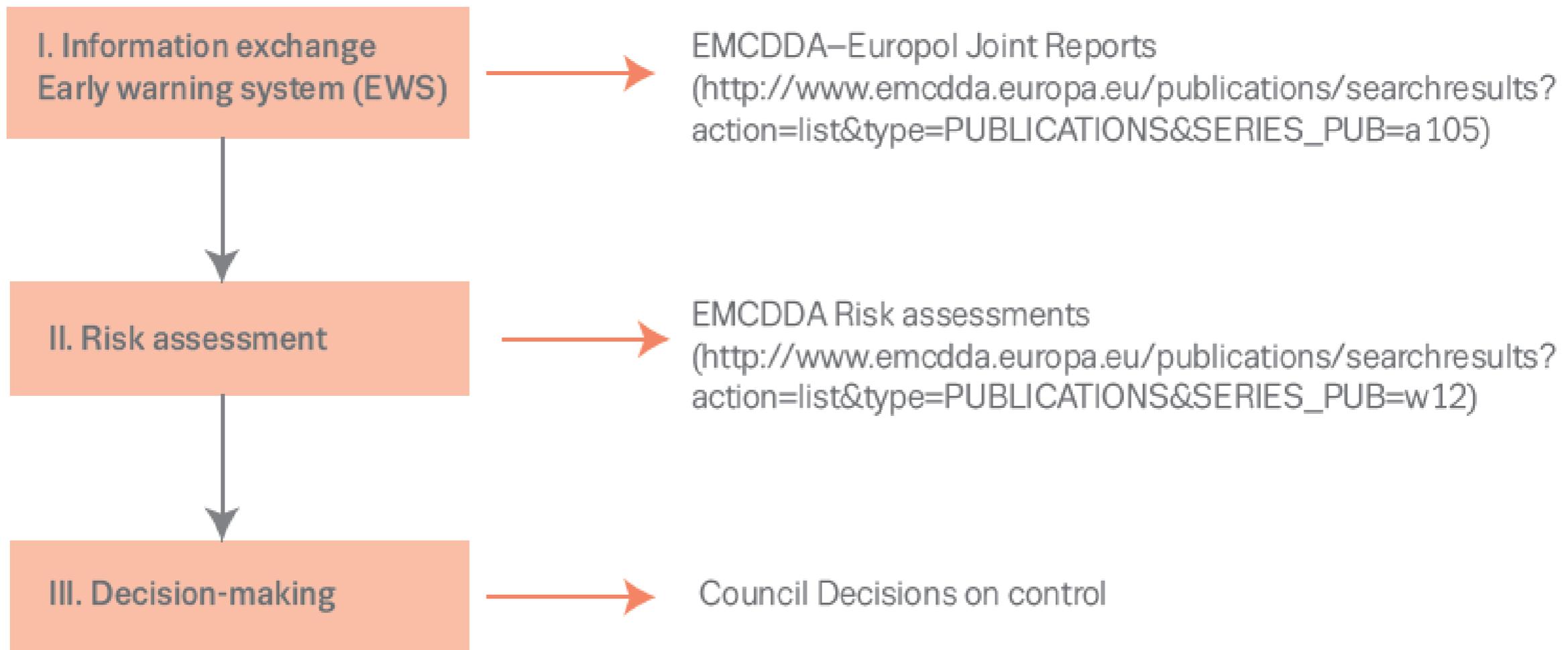
**EUROPEAN MEDICINES AGENCY**  
SCIENCE MEDICINES HEALTH

Pharmacovigilance system



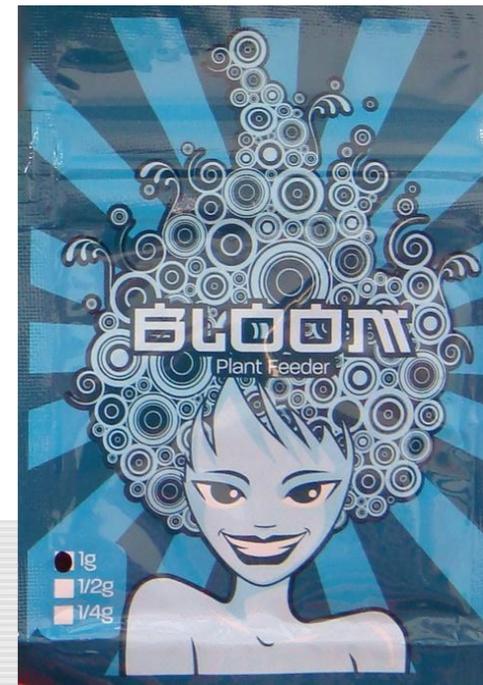
# The EU Early Warning System

Council Decision 2005/387/JHA of 10 May 2005 on the information exchange, risk-assessment and control of new psychoactive substances:  
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2005:127:0032:0037:EN:PDF>

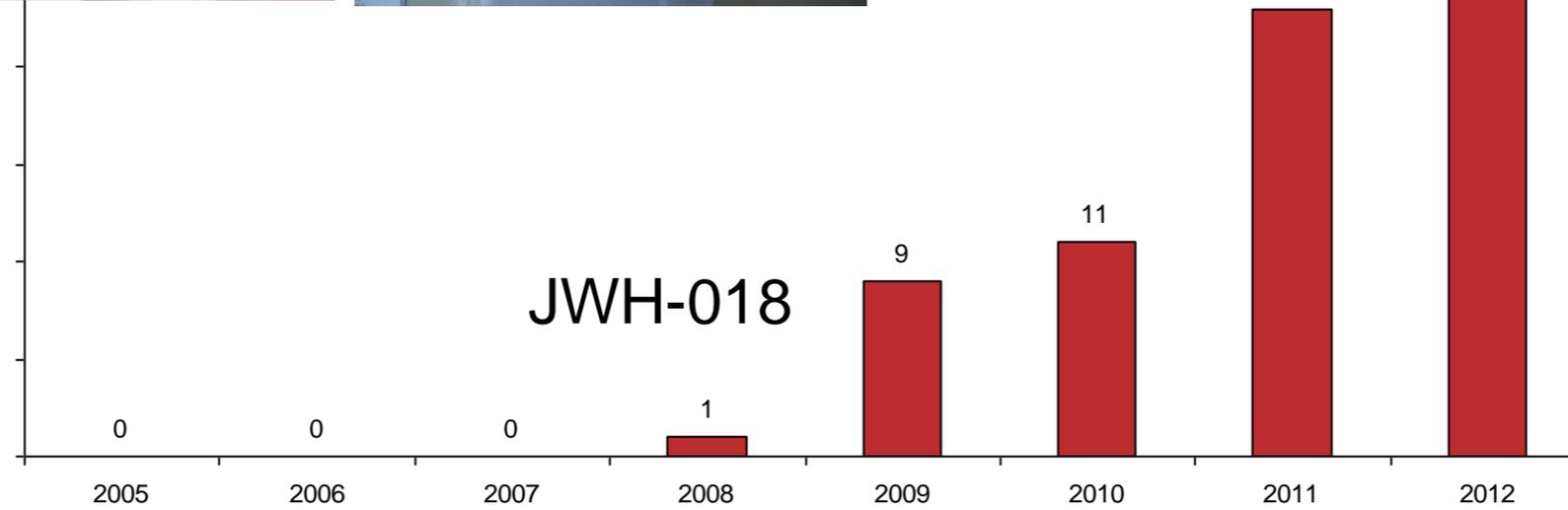
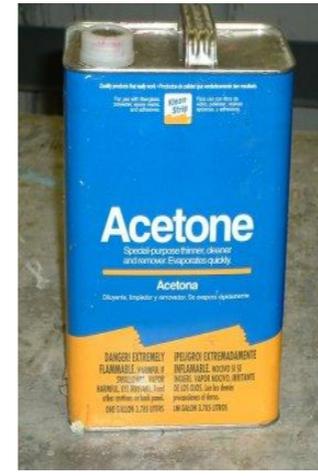
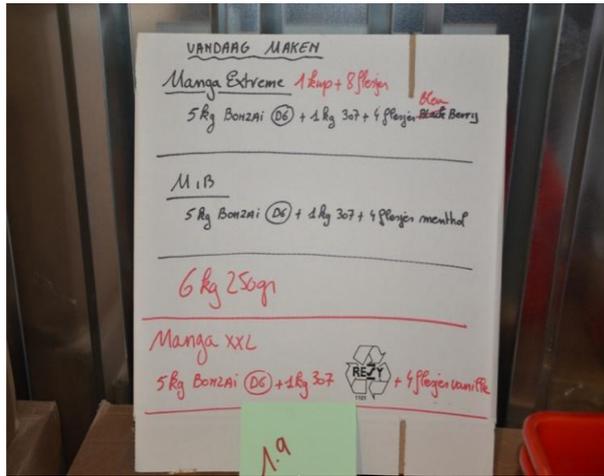


# The EU Early Warning System

- **1998 – 2005:** things relatively quiet
- But did provide time to develop and formalisation the methods & approach
- **2005-2008** things begin to get more interesting
- Dramatic change from 2008 onwards
- **Policy Success!**
- System in place to observe developments
- But - initially quite hard to get people to take it seriously!



# Rapid emergence of synthetic cannabinoids



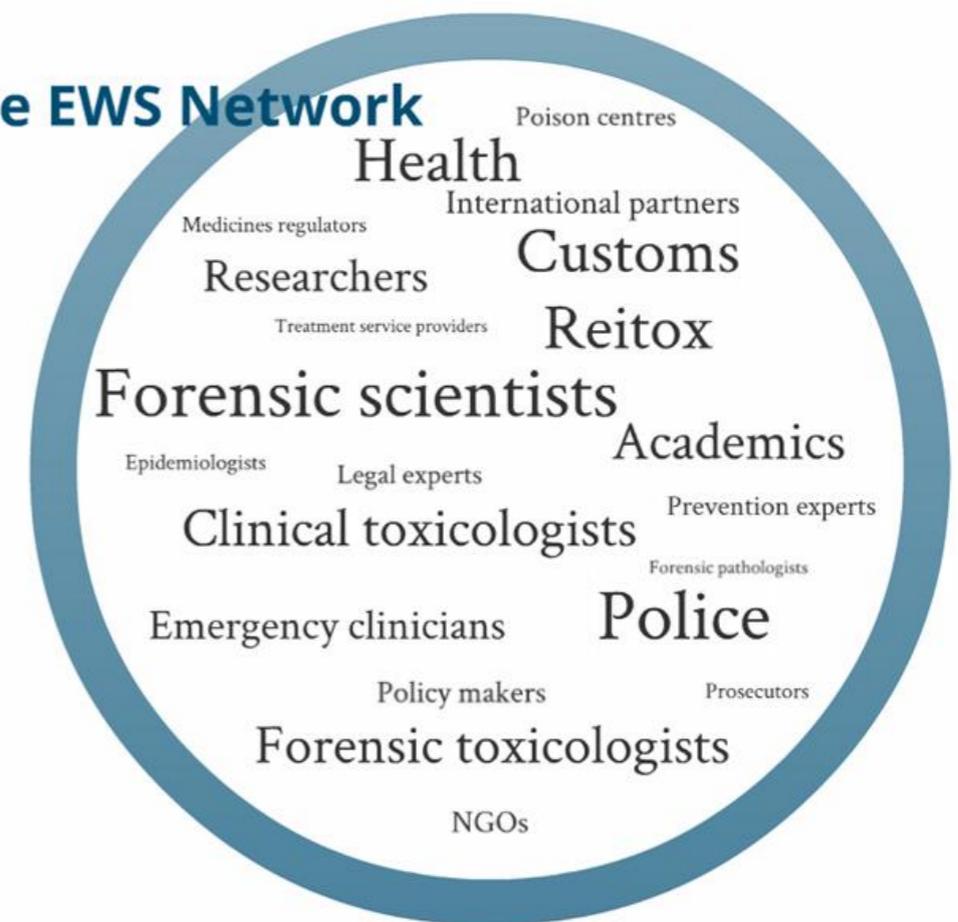
# Anatomy of the EU Early warning system

## Network driven:

Multidisciplinary & dependent on:

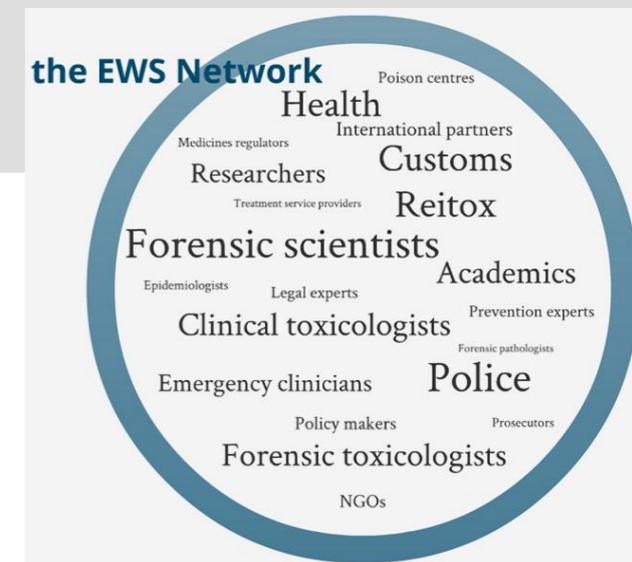
- mutual benefit,
- trust, &
- multi-directional information flow
- Successfully integrated forensic information

## the EWS Network

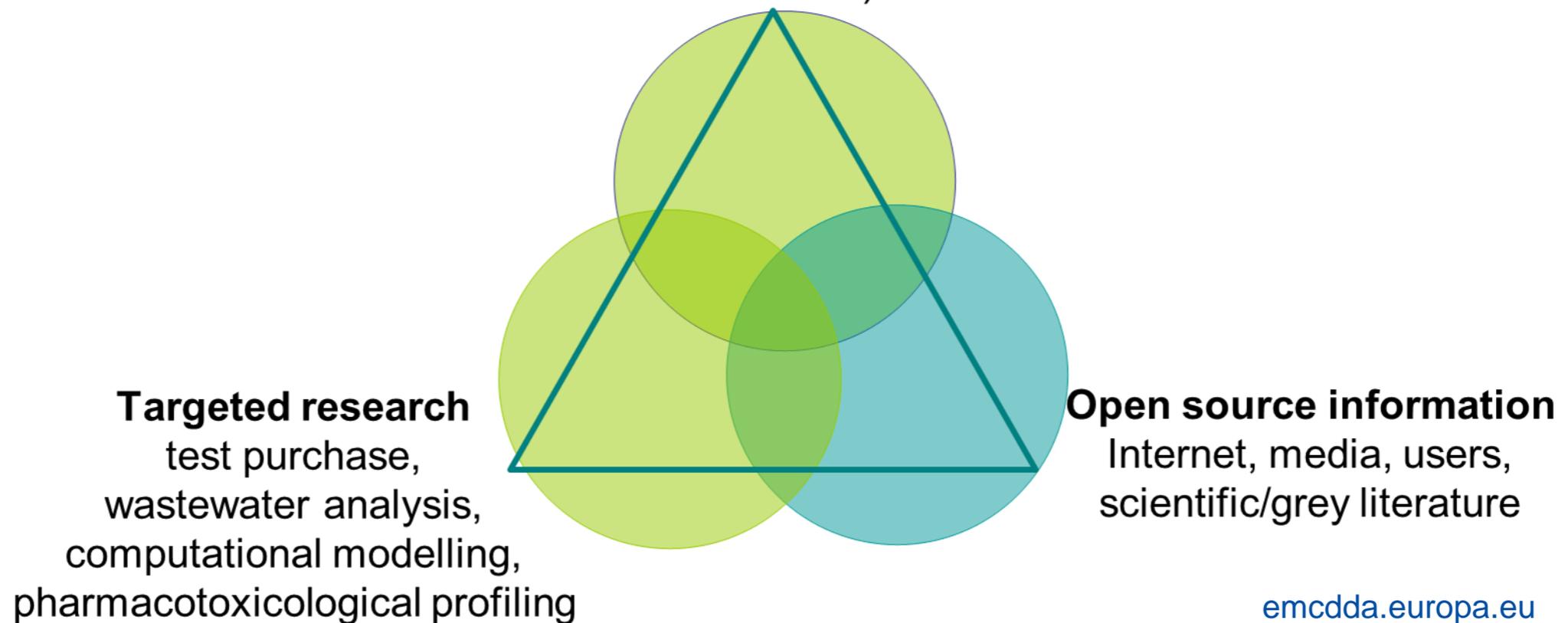


# The EU Early warning system

Network driven, multi sourced & linked with the EMCDDA's on-going monitoring of drug the situation



**EWS Reporting**  
Event based and non standard  
(forensic analysis toxicology, law enforcement, health care)



[emcdda.europa.eu](http://emcdda.europa.eu)

# The EU Early warning system

Network driven, multi sourced & linked with the EMCDDA's on-going monitoring of drug the situation

## the EWS Network



EMCDDA - REITOX  
Routine Monitoring  
(structured and  
standardized data)



**EWS Reporting**  
**Event based and non standard**  
(forensic analysis  
toxicology,  
law enforcement,  
health care)

**Targeted research**  
test purchase,  
wastewater analysis,  
computational modelling,  
pharmacotoxicological profiling

**Open source information**  
Internet, media, users,  
scientific/grey literature

[emcdda.europa.eu](http://emcdda.europa.eu)

# Tools – EMCDDA-Europol reporting forms

FROM : PHONE NO. : FEB. 02 1999 11:37AM P20

 <b>REPORTING FORM ON NEW SYNTHETIC DRUGS</b> 	
<small>In accordance with the joint action of 16 June 1997 adopted by the Council on the basis of article XXIII of the Treaty on European Union, concerning the information exchange, risk assessment and the control of new synthetic drugs.</small>	
1. Member State: <i>Sweden</i> Reporting authority: <input checked="" type="checkbox"/> ENU <input type="checkbox"/> REITOX Status: <input type="checkbox"/> confidential <input checked="" type="checkbox"/> open	Ref. n°: <i>1218-98-659</i> date: <i>23.12.1998</i>
2. Names/synonyms under which the new synthetic drug is known:	
3. Chemical description Chemical name: <i>Paramebixiamfebamin</i> Active ingredient(s): Other contents:	
4. Physical description: powder <input checked="" type="checkbox"/> pill <input type="checkbox"/> capsule <input type="checkbox"/> liquid <input type="checkbox"/> colour: <i>light beige</i> weight: <i>0.24g</i> size: diameter: shape: logo: markings:	
5. Seizing authority (to be filled in by ENU): <i>Skane Police Department</i> Originating source (to be filled in by REITOX): Date: <i>18.5.1998</i> Place: <i>Broby</i> Amount (weight, number of pills): 6. circumstances: <input type="checkbox"/> production <input type="checkbox"/> trafficking <input type="checkbox"/> distribution <input checked="" type="checkbox"/> abuse	

 <b>REPORTING FORM FOR A NEW PSYCHOACTIVE DRUG</b> 	
<small>In accordance with Council Decision 2005/387/JHA of 10 May 2005 on information exchange, risk assessment and control of new psychoactive substances.</small>	
This section should be filled in by Europol or EMCDDA Transmitted by Europol <input type="checkbox"/> Transmitted by EMCDDA <input checked="" type="checkbox"/> Ref. n°: <i>OEDT/SAT(11)1180</i> Date of transmission: <i>7/7/11</i>	
The following sections should be filled by the Europol National Units (ENU) or REITOX National Focal Points (NFP) based on the information available and their respective competences	
1. Member State: <i>ITALY</i> Ref. n°: <i>Date: July 05<sup>th</sup> 2011</i>	Reporting authority: <i>NFP at the Department for Antidrug Polices</i> <input type="checkbox"/> ENU <input checked="" type="checkbox"/> REITOX
2. Chemical name: <i>(4-ethylnaphthalen-1-yl)-(1-pentylindol-3-yl)methanone</i> Other name(s): <i>JWH-210</i> Street name(s):	
3. Source of information (fill one or more as appropriate) Seizure(s) <input checked="" type="checkbox"/> Specify amount (weight, number of tablets, etc.): <i>93 packs (4 g each) and 2 packs (25 g each) of herbal blends labelled as "Karma"</i>	
Seizing authority: <i>Police, Italy</i> Date: <i>January 2011</i> Place: <i>Vicenza province (Veneto Region)</i>	
Biological sample(s) <sup>1</sup> <input type="checkbox"/> Specify type: Identifying authority: Date: Place: Collected sample(s) <sup>2</sup> <input type="checkbox"/> Specify amount (weight, number of tablets, etc): Collecting authority: Date: Place: Other substances present (if more than one case, specify for which one): Psychoactive ingredients: <i>cannabidiol in the 25 g packages</i> Other ingredients:	

<sup>1</sup> Biological (human) samples e.g. body fluids (urine, blood), tissues, hair, etc.  
<sup>2</sup> Actively collected by drug monitoring systems for monitoring or research purposes

4. Physical description (in case of seizure/collection)

Form: powder  tablet  capsule  liquid  other   
 (specify): *roughly ground herbal mixture*

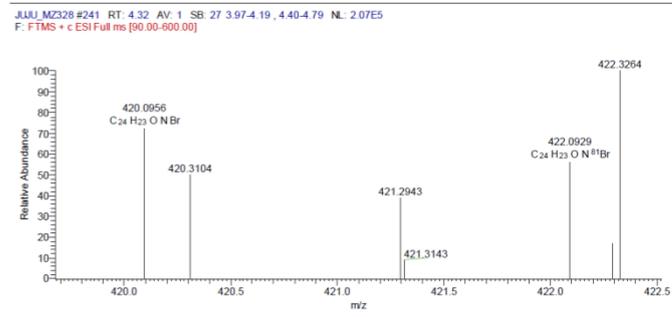
Colour: *green*

Dosage unit: weight: *4 g and 25 g* diameter: shape: logo/markings: *see pictures below*

*Herbal blend collected by the Police, details of the 4 g packages:*




JUUU\_M2326 #241 RT: 4.32 AV: 1 SB: 27 3.97-4.19, 4.40-4.79 NL: 2.07E5  
 F: FTMS + c ESI Full ms [90.00-600.00]



m/z	Relative Abundance
420.0956	~75
420.3104	~55
421.2943	~45
421.3143	~15
422.0929	~65
422.3264	~95

# Tools – EMCDDA database on new drugs

Substances Reporting forms Reports Search EDND Alerts Trainings Meetings Announcements Analytical databank

Miscellaneous

EDND >

Current user: vandali | [Logout](#)

Substance: JWH-387

## Chemistry

### Other chemical names and variants

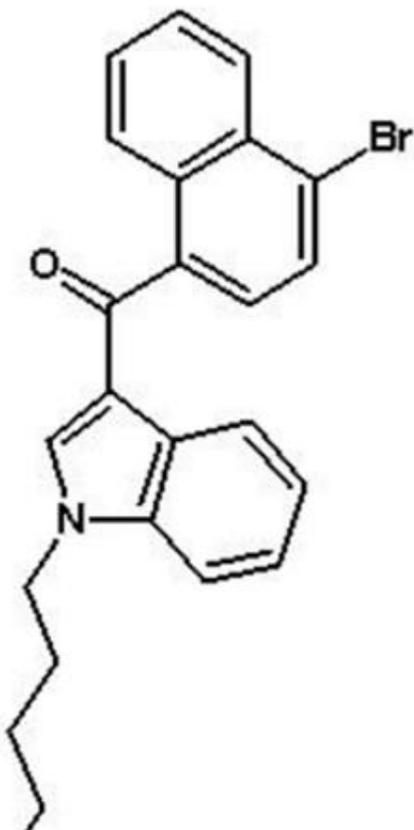
No information

### Chemical Abstracts Service (CAS) registry number

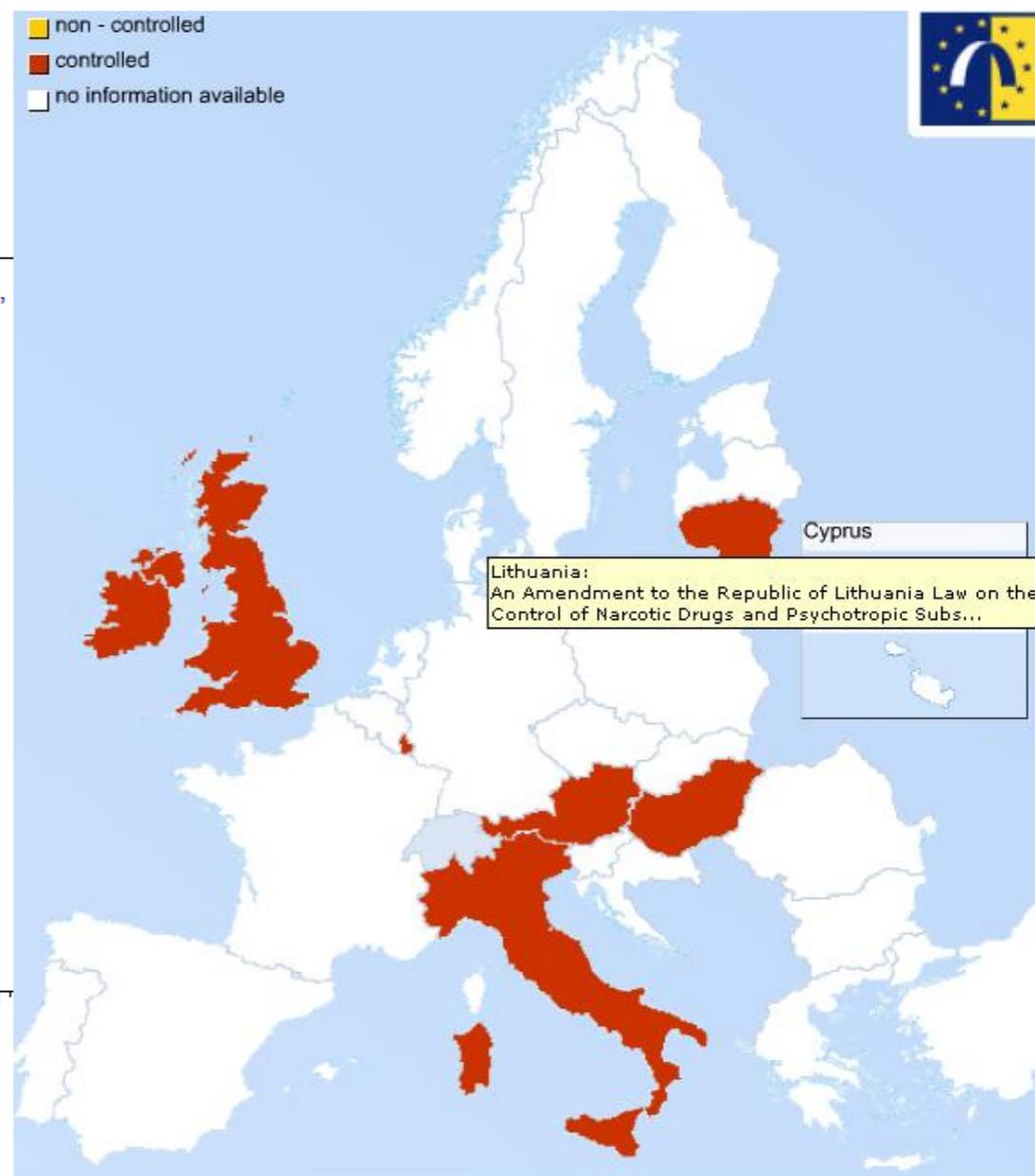
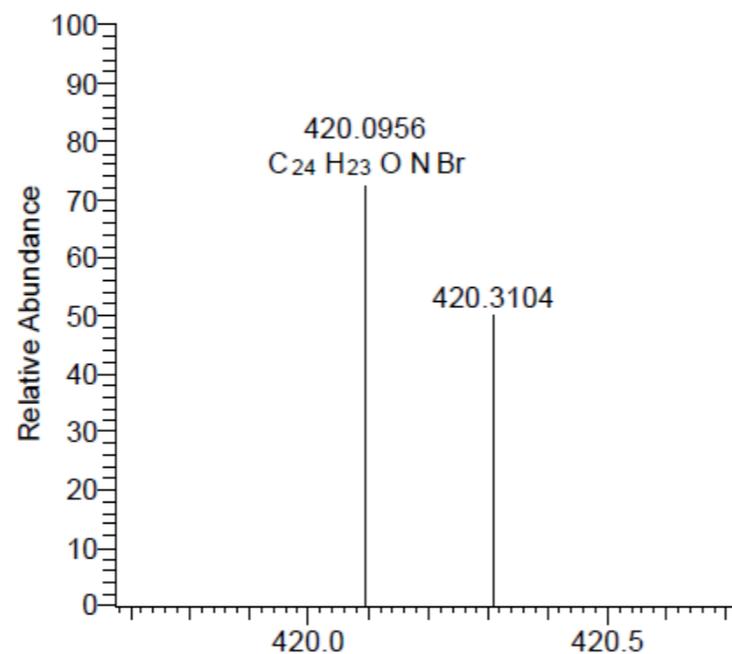
207227-49-4

### Molecular information

#### Molecular structure:

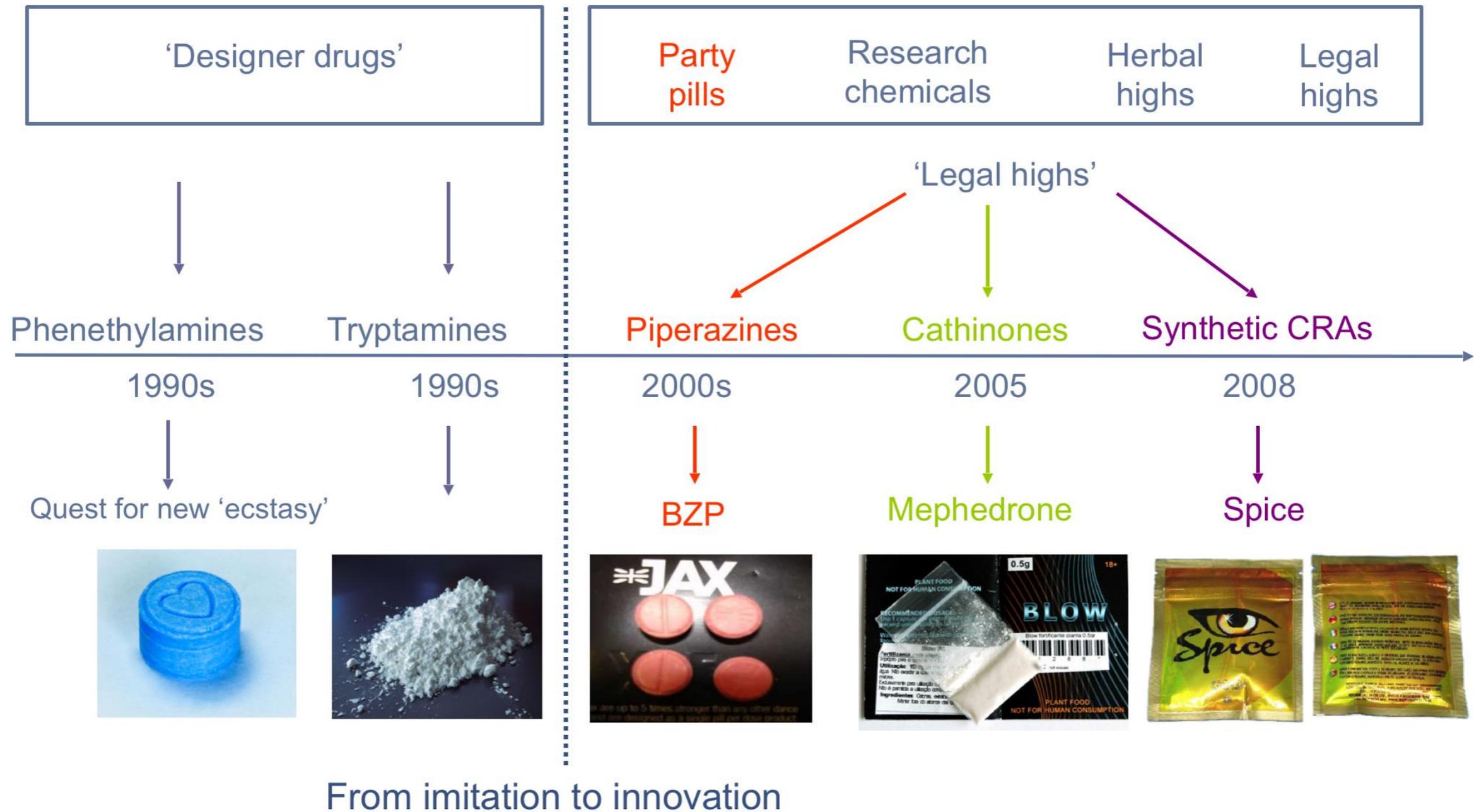


JWJU\_MZ328 #241 RT: 4.32 AV: 1 SB: 27 3.97-4.19 ,  
F: FTMS + c ESI Full ms [90.00-600.00]

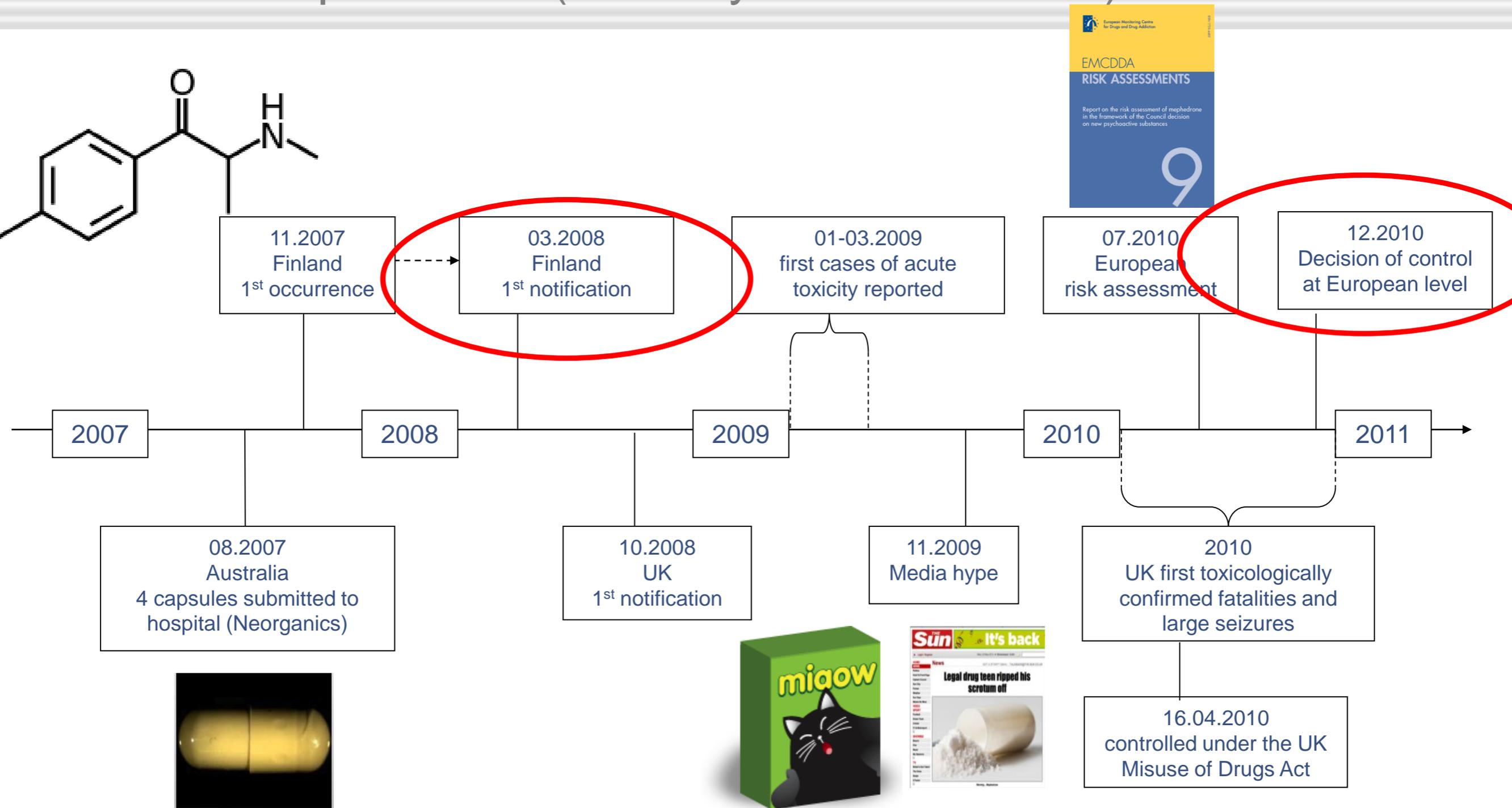
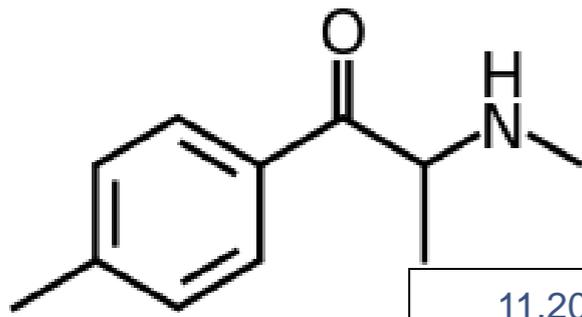


# The historical development of NPS in EU

## From 'designer drugs' to 'legal highs'



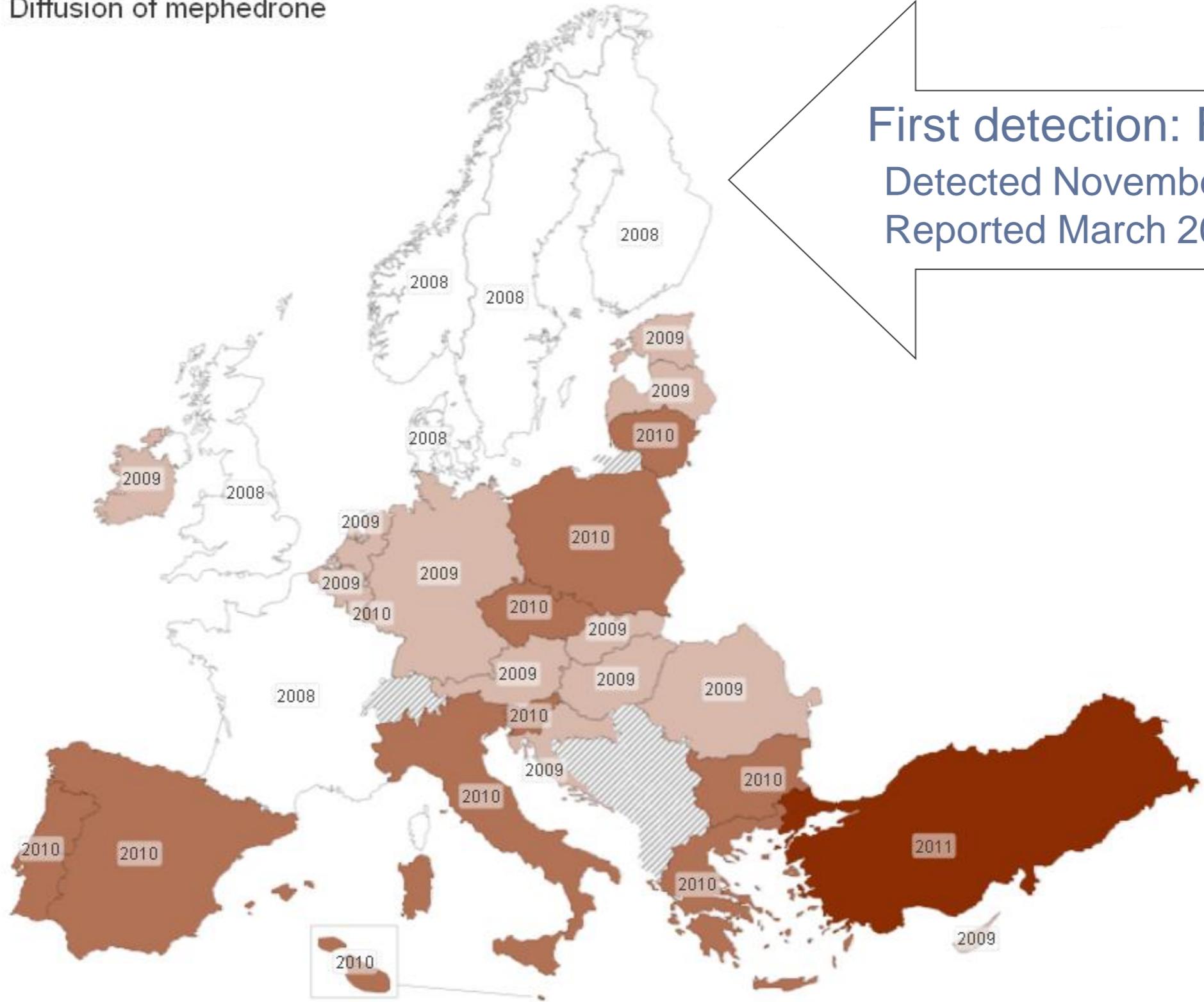
# Timeline: Mephedrone (4-methylmethcathinone)



In the context of dynamic stimulants market (interplay use & supply)

# Mephedrone – rapid diffusion across EU

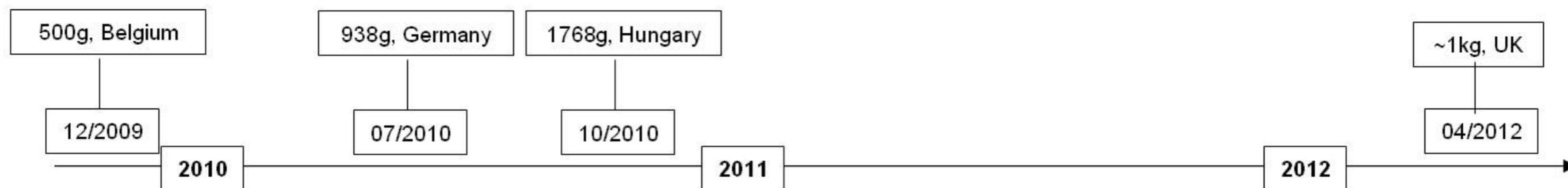
Diffusion of mephedrone



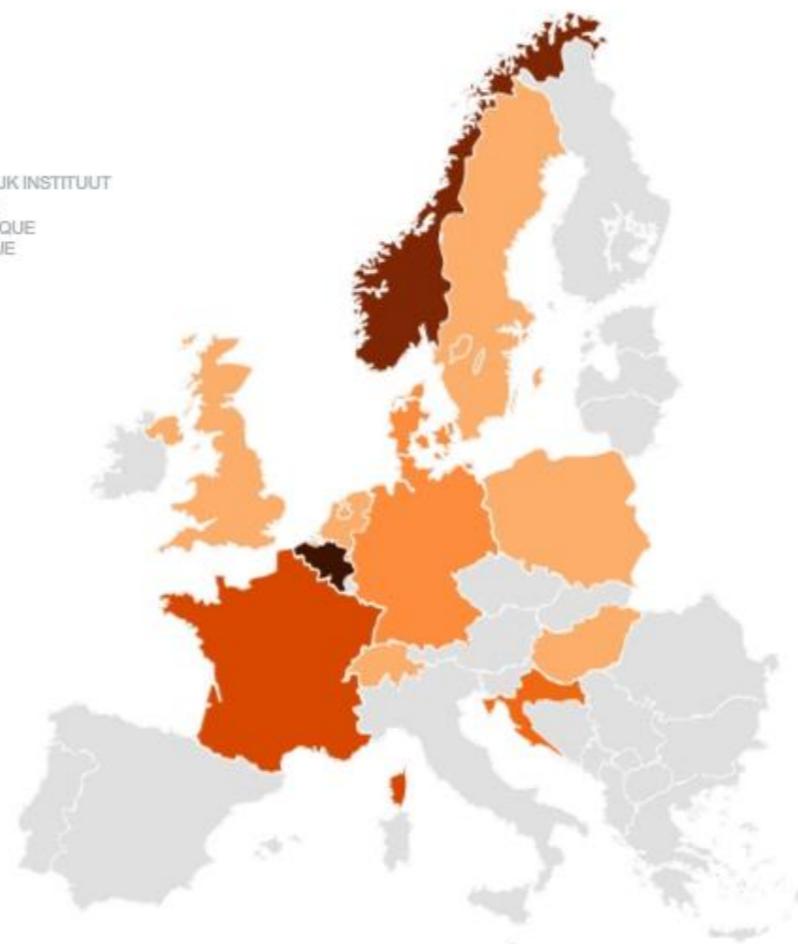
First detection: Finland  
Detected November 2007  
Reported March 2008

# 4-methylamphetamine – rapid but limited diffusion

## Large seizures of powder



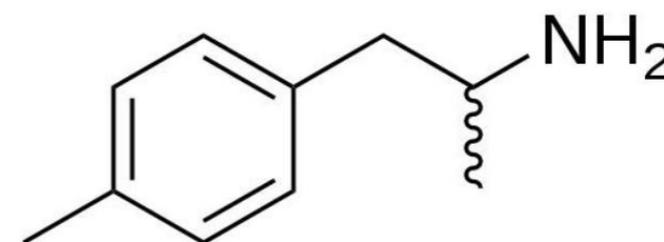
isp  
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WETENSCHAPPELIJK INSTITUUT  
VOLKSGEZONHEID  
INSTITUT SCIENTIFIQUE  
DE SANTÉ PUBLIQUE



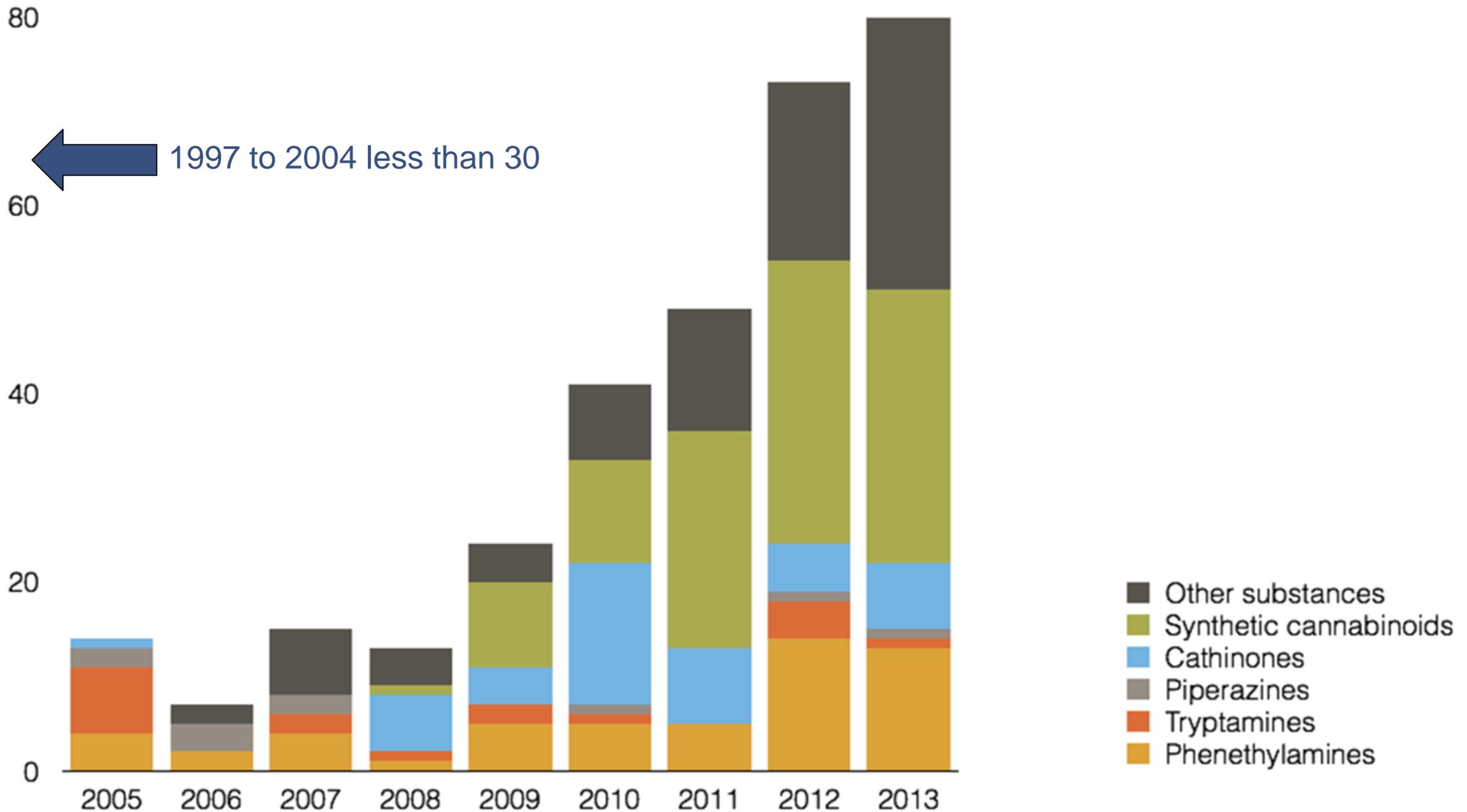
Countries reporting substance at time:



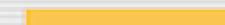
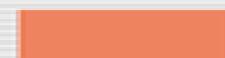
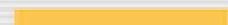
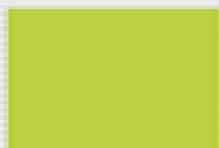
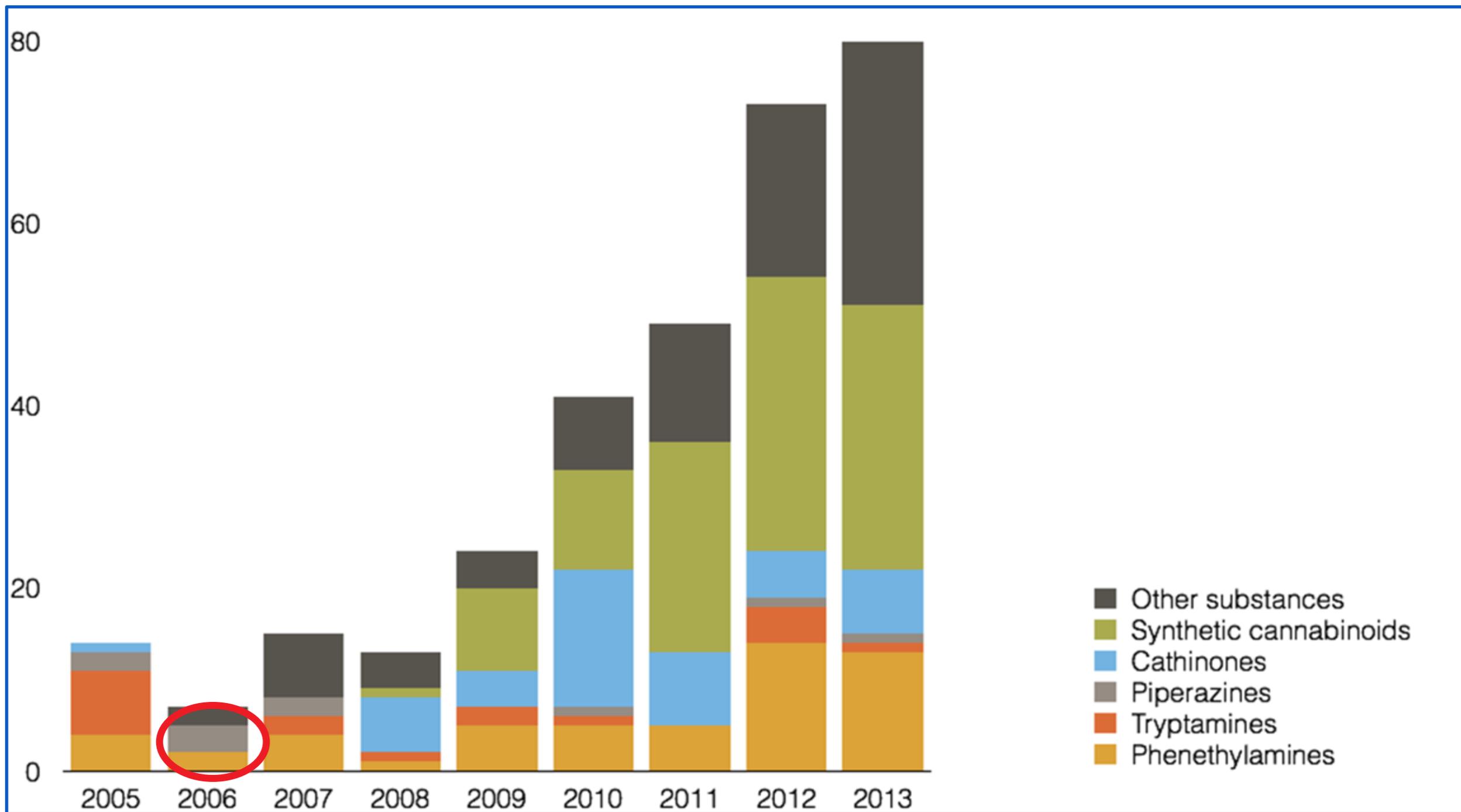
## First notifications by EU Member States



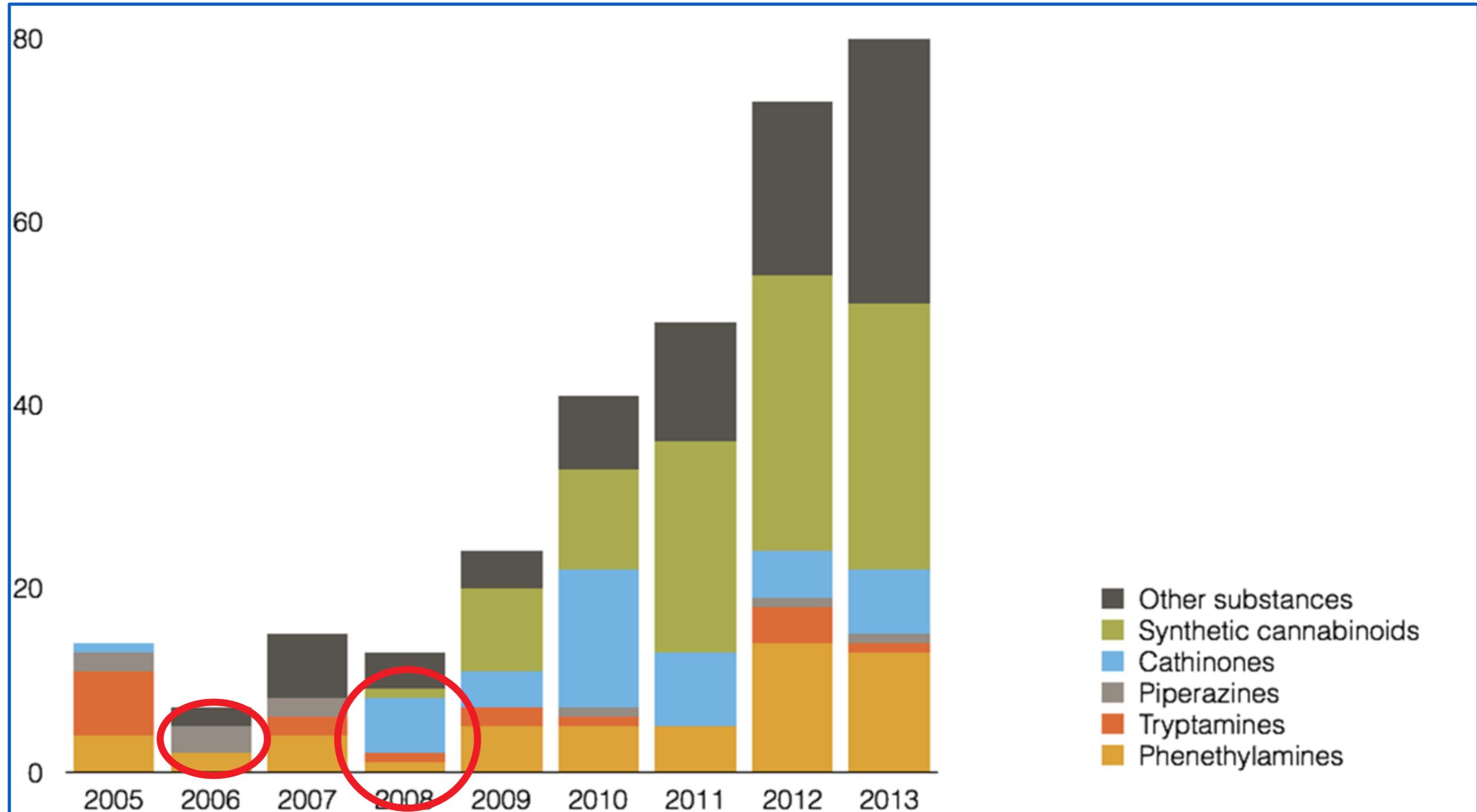
# Growth in notifications of NPS to EWS (2005–2013)



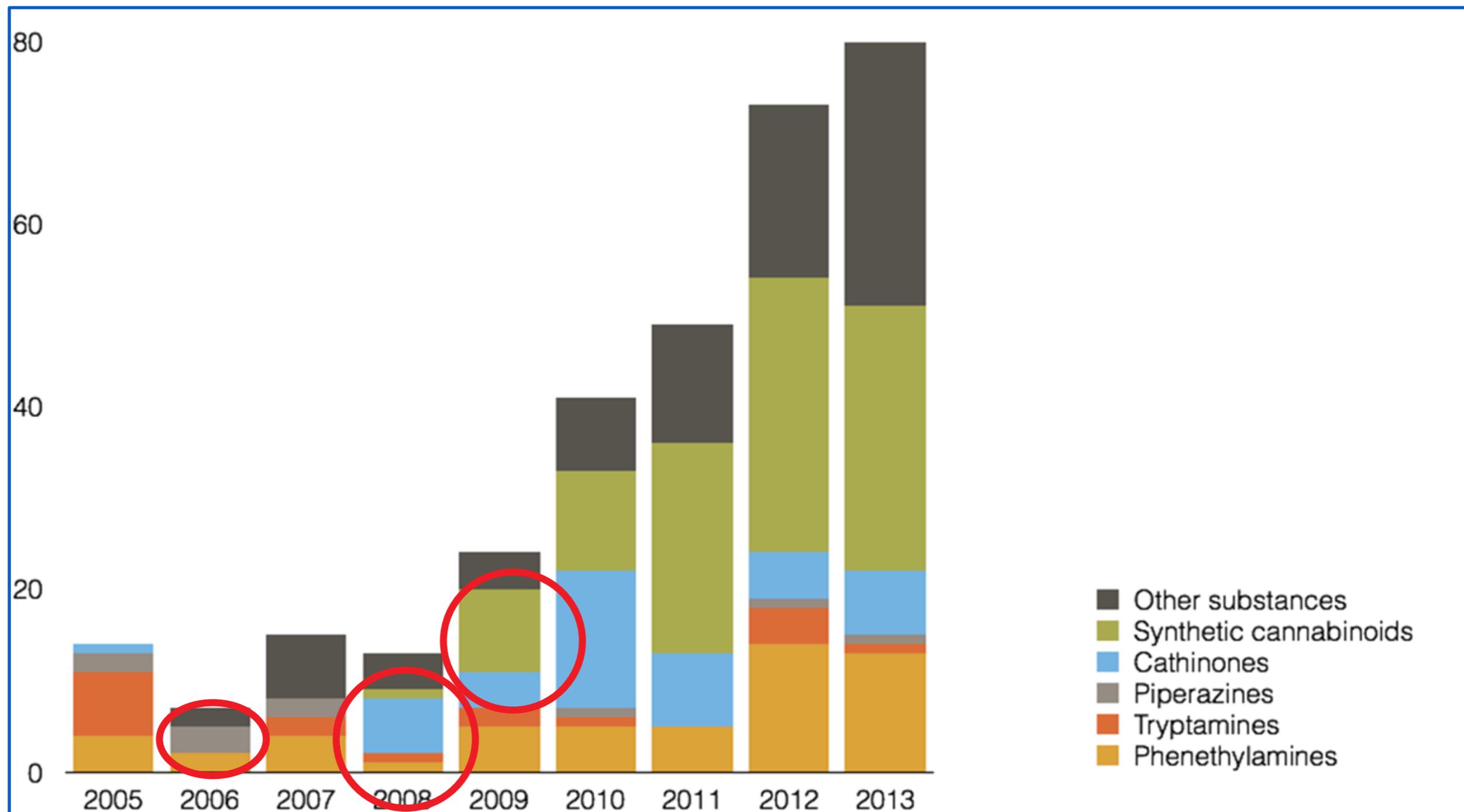
# Emergence of the NPS - Piperazines



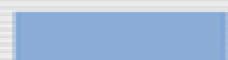
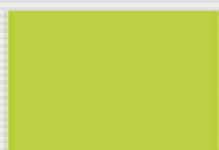
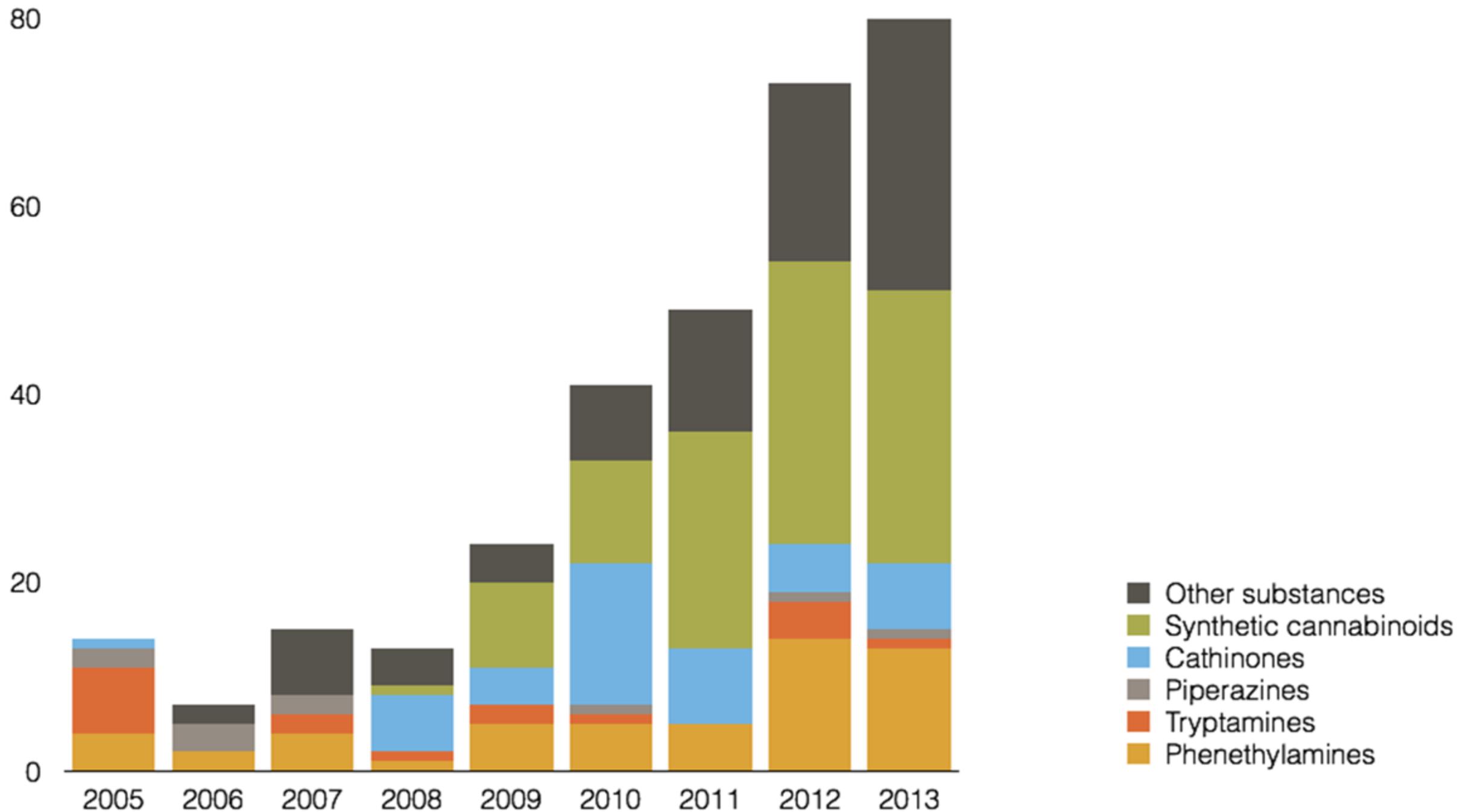
# Emergence of the NPS: piperazines, cathinones



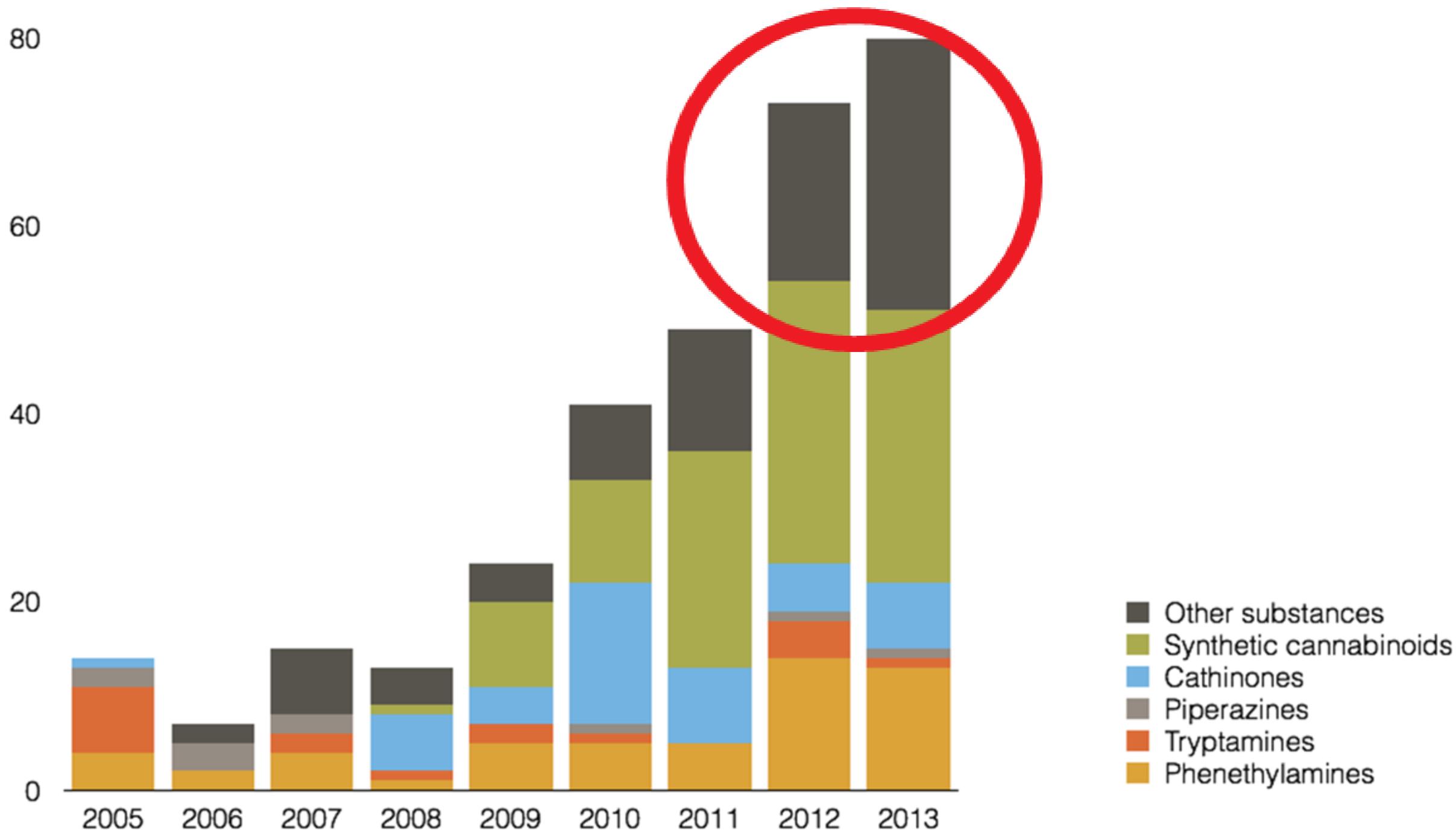
# Emergence of NPS: piperazines, cathinones & synthetic cannabinoids



# NPS in Europe – 317 new drugs notified (33 so far in 2014)



# NPS in Europe – ‘other substances’ become more important



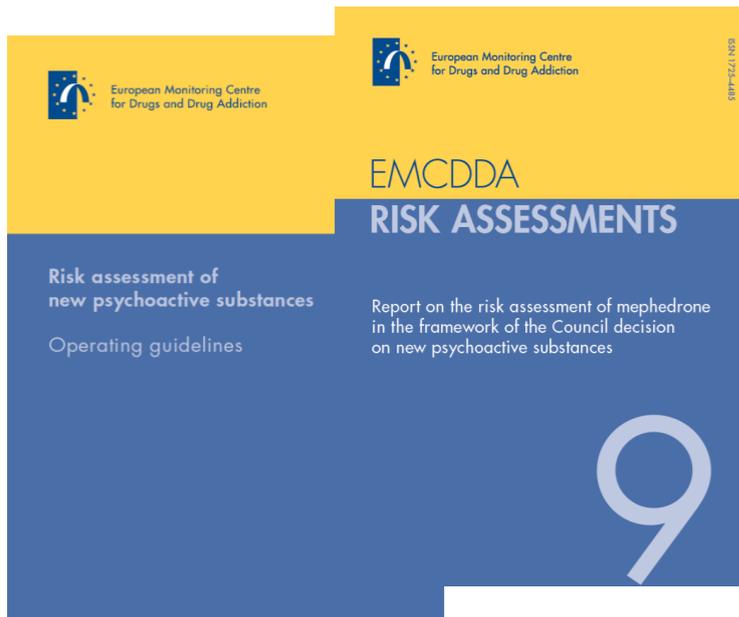
# NPS in Europe today

## Broad and overlapping groups

- More diversity and some worrying developments
  - Synthetic opioids
  - Injecting use – in new populations
  - Increasing interplay with illicit drug market?
- How respond to low prevalence toxic substances
- Detection of very potent compounds
- Evidence of use extremely weak with a disconnect between supply and epidemiological information
- CRITICAL- Need for the rapid exchange of better and more complete information on acute intoxications and deaths - toxicovigilance
- Evident in recent risk assessments (2014)



# Risk assessment of new substances 13 between 1998 & 2013



- Criteria leading to risk assessment
- Formalised guidelines:
- European dimension & diffusion potential

**MBDB** (1998) — not controlled  
**4-MTA** (1999) — controlled EU  
**GHB** (2000) — controlled UN level  
**Ketamine** (2000) — not controlled  
**PMMA** (2002) — controlled EU  
**2C-I, 2C-T-2, 2C-T-7, TMA-2** (2003) — controlled EU

**BZP** (2007) — controlled EU  
**Mephedrone** (2010) — controlled EU  
**4-MA** (2012) — controlled EU  
**5-IT** (2013) — controlled EU



# Risk assessment of NPS, so far in 2014...

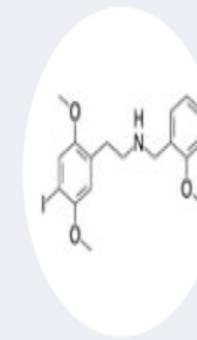
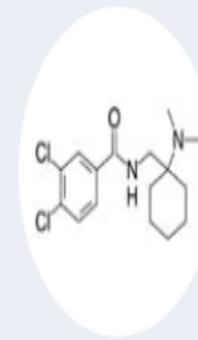
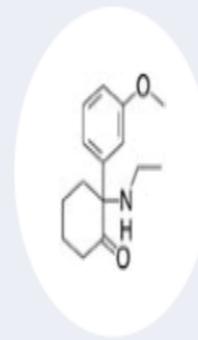
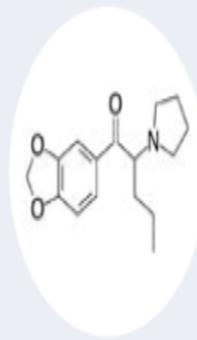
- 25I-NBOMe (hallucinogen)
- AH-7921 (opioid)
- MDPV (stimulant)
- Methoxetamine (ketamine-like)

Target main segments of illicit drug market

Two more under review

- 4,4,-DMAR
- MT-45

## FOUR SUBSTANCES RISK-ASSESSED IN 2014



MDPV	Methoxetamine	AH-7921	25I-NBOMe	Substance
Cathinones	Arylcyclohexamines	Opioids	Phenethylamines	Drug family
2008	2010	2012	2012	Year of first notification to the EU Early Warning System
99	20	15	1	Number of deaths associated with the substance
107	110	6	15	Number of non-fatal intoxications
29	24	8	24	Number of countries where it has been detected (EU, Turkey and Norway)
22	9	1	6	Number of countries where it is subject to control measures under drug control legislation (EU, Turkey and Norway)

- **synthetic analgesic** with an unusual structure **invented in the 1970s** not developed as medicine;
- EWS: first detected in the UK (July **2012**);
- **$\mu$ -opioid receptor agonist** with some affinity to  $\kappa$ -opioid receptors
- animal studies evidence **dependence liability**
- limited epidemiological information; **polydrug use** common, route oral, re-dosing & injecting...
- few **non-fatal intoxication** reported mostly from Sweden, associated with **15 deaths** (UK, Sweden and Norway)
- **Side-effect profiles similar to morphine**
- ***Naloxone reduces these effects significantly***

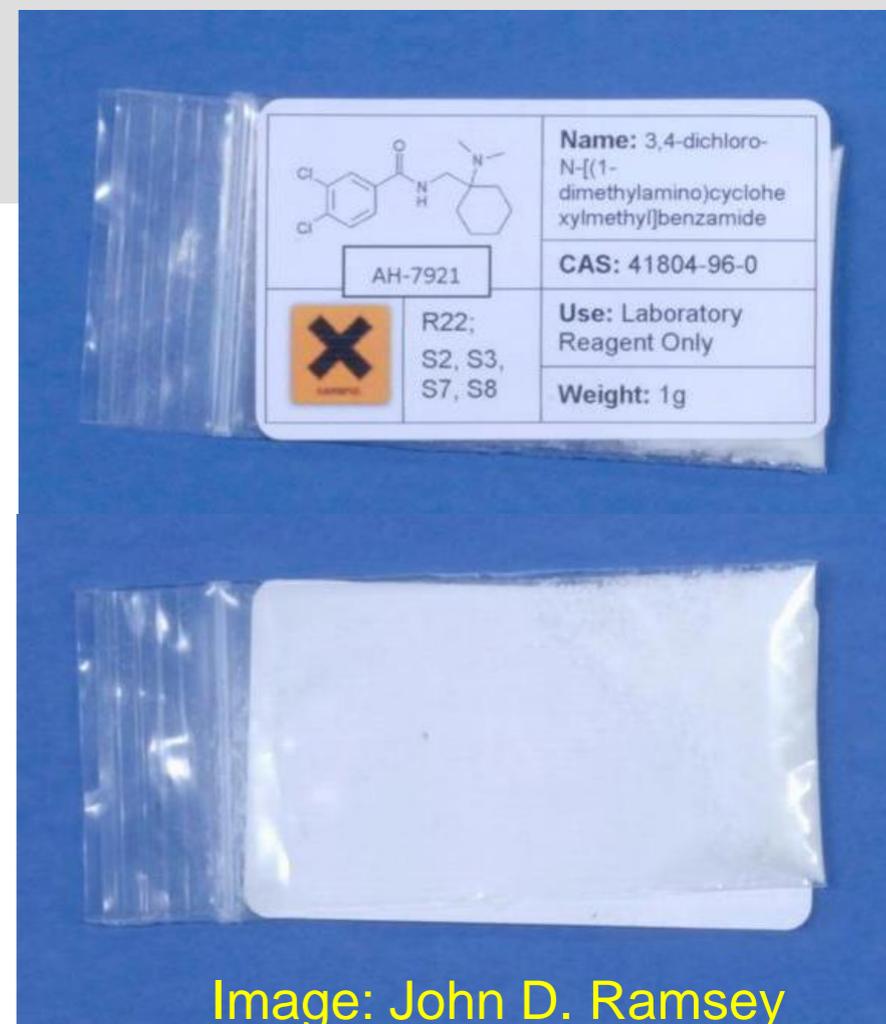
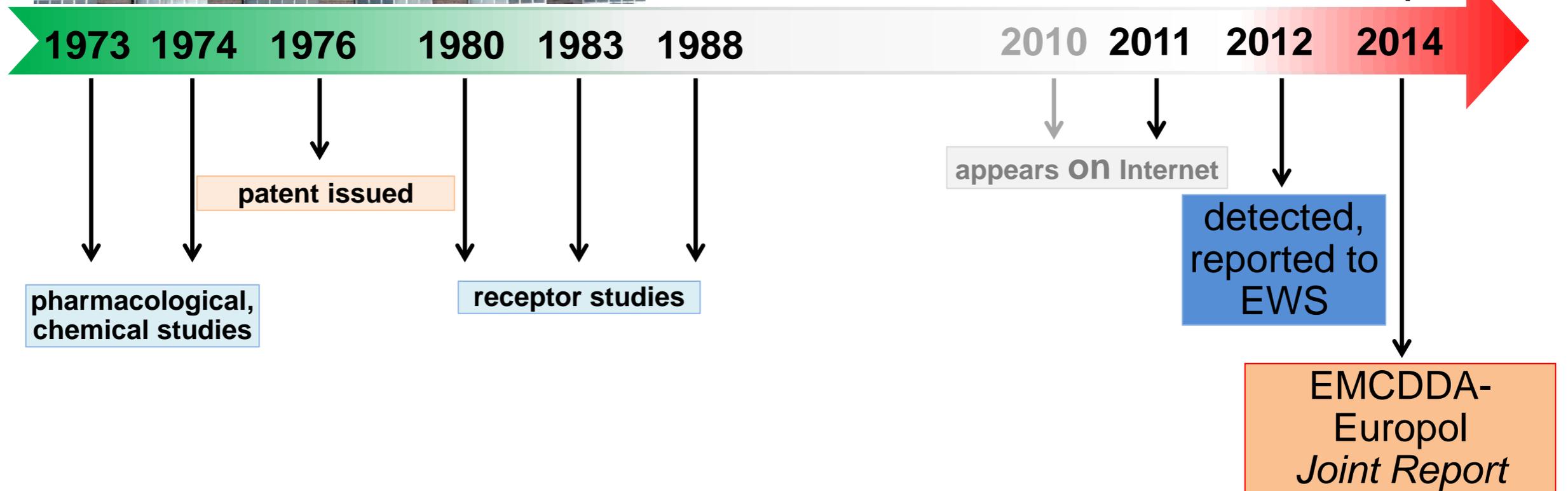


Image: John D. Ramsey

***benzamide derivative  
with an  
aminocyclohexane moiety***

# Timeline of AH-7921



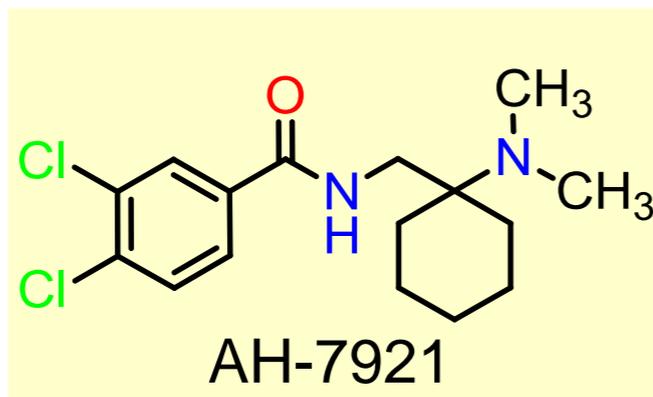
# Name mismatch with grave consequences?

## INTERNATIONAL BUSINESS TIMES

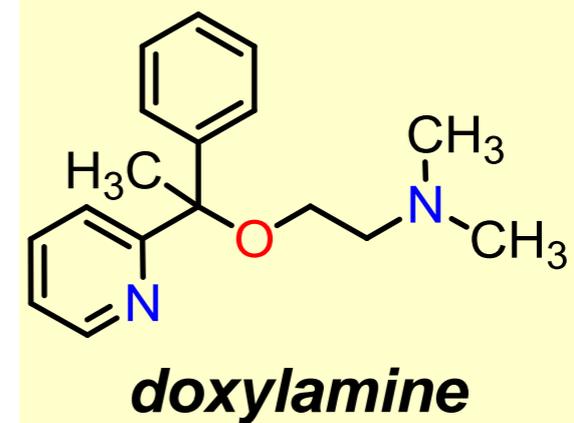
### New Deadly Drug AH-7921: Legal High Doxylam as Toxic as Heroin

By Lydia Smith February 28, 2014 15:57 GMT

One of the drugs is **AH-7921**, commercially known as **Doxylam**, which can be bought online for as little as £25. Last August, Jason Nock, a 41-year-old father-of-one from Cradley Heath, West Midlands, died in his sleep after taking the drug. As the substance is unregulated, he accidentally took five times the fatal amount of Doxylam. He hoped it would **cure his insomnia**, but he never awoke.



**opioid analgesic**



**doxylamine**  
**sedative-hypnotic**  
**antihistamine**

# EMCDDA Risk Assessment 2014: 25I-NBOMe

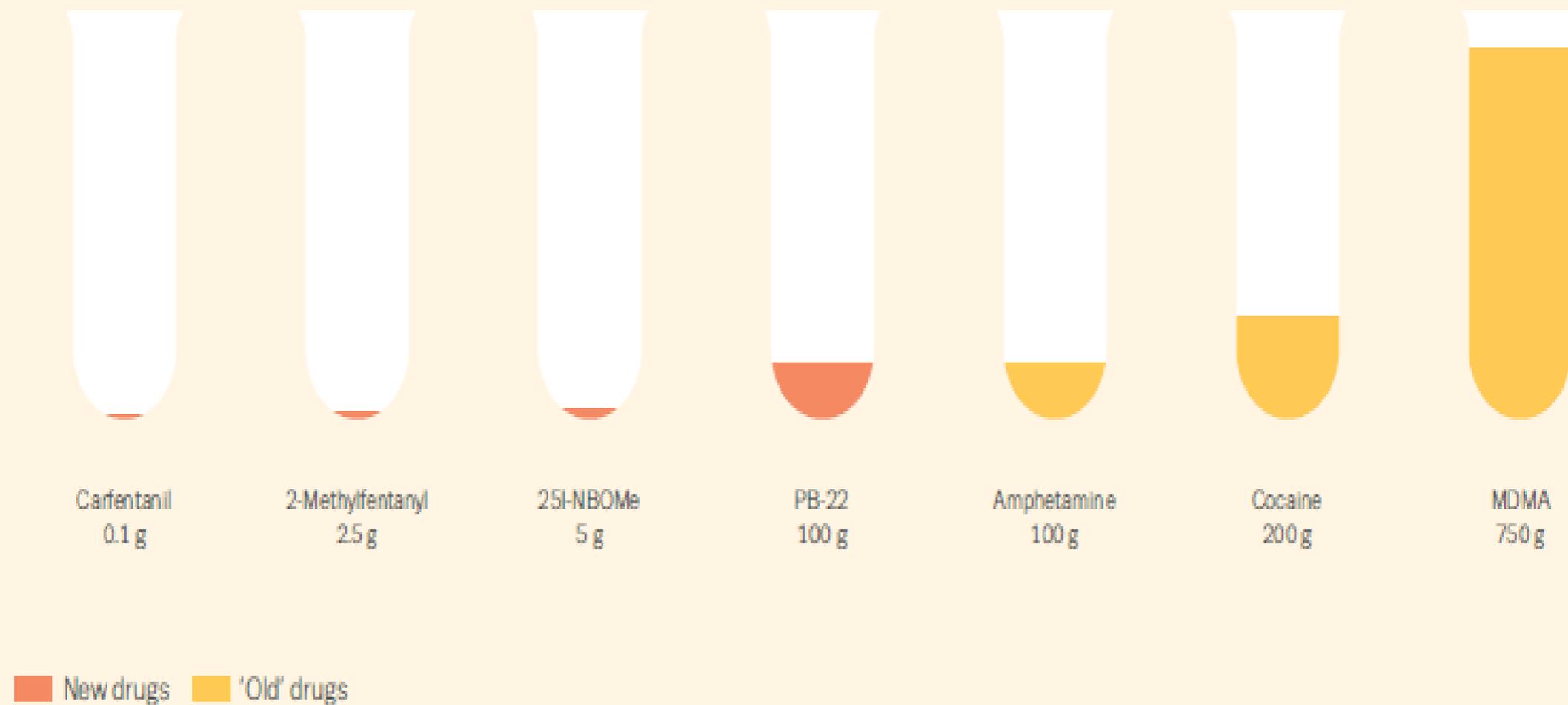


- 25I- shows features commonly associated with other “classical” **serotonergic hallucinogens**
- Symptoms may include hallucinations, agitation, aggression, tachycardia, hypertension, seizures
- Exposure **intentional or unintentional** after consuming a product with no indication that it contains 25I-NBOMe (maybe sold as LSD), route of administration sublingual and buccal (blotters), single use doses typically in the  $\mu\text{g}$  750 to 3750  $\mu\text{g}$ .
- **32 non-fatal intoxications** (Belgium, Poland, Sweden, UK) + USA
- **4 deaths** (Belgium, Poland, UK) + USA, Australia
- Many cases involve other drugs but limited toxicological data available
- 25I-NBOMe analysis challenging in biological fluid due to potency and subsequent very low concentration



# The challenge to public health and drug control of highly potent compounds!

HOW MUCH PURE DRUG IS NEEDED TO MAKE 10 000 DOSES?



# EMCDDA Risk Assessment 2014:

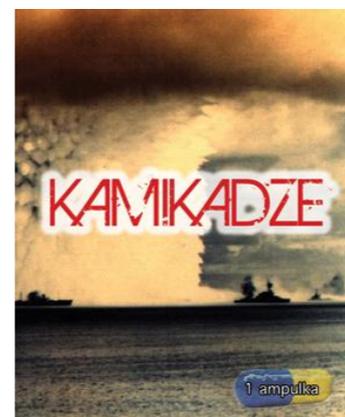
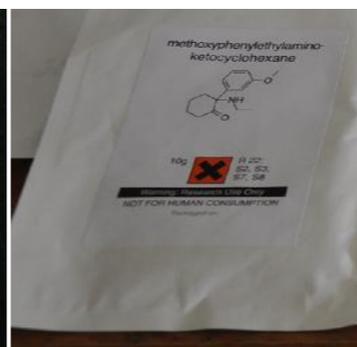
## Methoxetamine

- Arylcyclohexamine derivative of ketamine
- Animal studies: methoxetamine may cause similar bladder and renal toxicity to ketamine
- EWS: **121 non-fatal intoxications** in 5 Member States
- EWS: **20 deaths associated** with methoxetamine in 6 Member States

## MDPV

- A synthetic cathinone
- Animal studies: MDPV has stimulant effects and dependence potential
- EWS: **563 non-fatal intoxications** in 11 Member States
- EWS: **108 MDPV associated deaths** in 8 Member States and Norway

The data on associated deaths needs to be interpreted carefully



# EMCDDA-Europol Joint Reports 2014:

## 4,4'-DMAR

- Derivative of aminorex and 4-methylaminorex (both synthetic stimulants)
- EWS: first reported Dec 2012 (the Netherlands)
- *In vitro* study: ( $\pm$ )-*cis*-4,4'-DMAR is a potent, efficacious substrate-type releaser at transporters for dopamine, norepinephrine and serotonin.
- EWS: **27 deaths associated with 4,4'-DMAR** in 2 Member States

## MT-45

- MT-45 is a synthetic opioid, patented in the 1970s, activity similar to that of morphine. It is a substituted piperazine.
- EWS: first reported Dec 2013 (Sweden)
- EWS: 2 non-fatal intoxications in one Member State
- EWS: **12 deaths associated with MT-45** in one Member State

The data on associated deaths needs to be interpreted carefully



# NPS in Europe today - A crowded market!

## Overlapping groups

- **Legal highs:** sold openly, often as branded products in sophisticated packaging. Online, shop sales and by street-level drug dealers. Also called herbal highs, party pills, bath salts, plant food, incense etc.
- **Designer drugs:** sold on illicit market as 'ecstasy' (mCPP, PMAA) or 'speed' (4-methylamphetamine) or heroin (fentanyl). Users unaware that they are taking them
- **Controlled NPS** that have crossed over to the licit market. Generic mixtures and named – e.g. Mephedrone
- **Research chemicals:** largely sold online as zip-locked bags of powder with labeled chemical content,
- **Medicines:** diverted within EU (pregabalin, benzydamine) or imported from elsewhere (phenazepam)
- **Dietary supplements, training aids etc:** aimed at lifestyle users, sold on Amazon and eBay (phenibut and DMAA)



# Risk assessment of new substances – increasing burden on system

Overview: The system coming under increasing pressure

- Diverse set compounds (360+ compounds monitored)
- Challenge identification chemicals
- Challenge of identifying and reporting of adverse events
- Differential geographical reporting of acute toxicity?
- Capacity? or differential risks and patterns of use

# New drugs - here to stay?

## Future Trends

In the view of this author, it is likely that the future drugs of abuse will be synthetics rather than plant products. They will be synthesized from readily available chemicals, may be derivatives of pharmaceuticals, will be very potent, and often very selective in their action. In addition, they will be marketed very cleverly.

What about other drugs classes? The literature abounds with synthetic routes and pharmacological properties of thousands of narcotics, stimulants, hallucinogens, and sedative-hypnotic drugs. This information is so readily accessible that creative clandestine chemists can continue to exploit the pharmaceutical chemistry literature. Restricting access to the

**REFERENCE:** Henderson, G. L., "Designer Drugs: Past History and Future Prospects," *Journal of Forensic Sciences*. JFSCA, Vol. 33, No. 2, March 1988, pp. 569-575.

# NEW drugs – here to stay?

- Regardless of the ability of control policies to begin to find traction on the problem of re-engineering of substances to fall out side of legal definitions - the structural conditions exist to suggest that NPS will remain important part of future global drug problem.

# NEW drugs – here to stay?

- These include:
  - Demographic & social changes creating both markets and production opportunities in the less developed world
  - The market advantage that derives from the production & trafficking of low volume, high potency substances, especially those that can be produced near to their intended markets
  - The existence and continued development of information technology that allows new trends in both use & production to diffuse rapidly
  - A global commercial infrastructure that allows goods to be moved rapidly through multiple destinations
  - The possible willingness of some jurisdictions to experiment with regulated markets (both for traditional & new)
  - And an increasing grey area between what we consider drugs, medicines, foodstuffs & life style enhancers



European Monitoring Centre  
for Drugs and Drug Addiction

Risk assessment reports available at:

[www.emcdda.europa.eu](http://www.emcdda.europa.eu)