ANCONA, ITALY

18th September 2009

Research chemical drugs: the state of the art

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Research Chemicals

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Journal of Pharmaceutical and Biomedical Analysis 47 (2008) 335–342

JOURNAL OF PHARMACEUTICAL AND BIOMEDICAL ANALYSIS

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Liquid chromatography–atmospheric pressure ionization electrospray mass spectrometry determination of "hallucinogenic designer drugs" in urine of consumers

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Received 9 October 2007; received in revised form 20 December 2007; accepted 21 December 2007
Available online 4 January 2008

Abstract

A procedure based on liquid chromatography–mass spectrometry (LC–MS) is described for determination of 3,4-methylenedioxy-methamphetamine (MDMA), 2,5-dimethoxy-4-methyl-phenethylamine (2C-D), 4-bromo-2,5-dimethoxy-β-phenethylamine (2C-B), 1-(8-bromo-2,3,6,7-tetrahydrobenzo[1,2-b:4,5-b'] difuran-4-yl)-2-aminoethane (2C-B-Fly), 4-ethylthio-2,5-dimethoxy-β-phenethylamine (2C-T-2), 4-iodo-2,5-dimethoxy-β-phenethylamine (2C-I), and 4-ethyl-2,5-dimethoxy-β-phenethylamine (2C-E), 1-(m-chlorophenyl)piperazine (m-CPP), 4-hydroxy-*N*,*N*-diisopropyltryptamine (4-OH-DIPT) and 4-acetoxy-*N*,*N*-diisopropyltryptamine (4-acetoxy-DIPT) in urine of consumers using 3,4 methylendioxypropylamphetamine (MDPA) as internal standard.

Research Chemicals

- Research Chemical vs. Designer drugs
  - Different mean by different people
  - Some times used as interchangeable terms

Research Chemicals

Published in final edited form as:
Subst Use Misuse. 2008 ; 43(3-4): 389–402. doi:10.1080/00952990701202970.

"Research Chemicals": Tryptamine and Phenethylamine Use Among High-Risk Youth

Bill Sanders[1,2], **Stephen E. Lankenau**[1,2,3], **Jennifer Jackson Bloom**[2], and **Dodi Hathazi**[2]

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Abstract

Tryptamines and phenethylamines are two broad categories of psychoactive substances with a long history of licit and illicit use. Profiles of users of recently emerging tryptamines and phenethylamines are nonexistent, however, since surveillance studies do not query the use of these substances. This manuscript describes the types, modes of administration, onset of use, and context of use of a variety of lesser known tryptamines and phenethylamines among a sample of high-risk youth. Findings are

Definition

- Designer drugs
  - Substances intended for recreational use which are chemical congeners of illicit drugs or derivatives of approved drugs that are synthesized by “street chemists” with the purpose of circumventing the law
- Research Chemicals (RC)
  - Substances intended for recreational use which are chemical congeners of illicit drugs or derivatives of approved drugs that are synthesized by “fine chemistry companies” that are sold for research or analytical purposes. Purpose is circumventing the law

Designer drugs. Classification

- Phenylethylamines (amphetamine – mescaline derivatives): entactogen and hallucinogenic amphetamines: MDMA, 2-CE
- Tryptamines: 5-MeO-tryptamine
- Ephedrines: methcathinone or ephedrone, methylmethcathinone or mephedrone
- Piperazines: 1-benzylpiperazine or BZP
- Pyrrolidinophenones: MPPP
- Opioids: fentanyl (alfa-methyl-fentanyl) and meperidine derivatives (MPTP)
- Arylhexilamines: phencyclidine derivatives (PCE, TCP)
- Cannabinoids: spice drugs (JWH-018)
- Methaquolone: mecloqualone
- Others (GHB)

Designer drugs: Spice drugs

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Spice (drug)

From Wikipedia, the free encyclopedia

Spice is a brand name for a mixture of herbs that has been sold in smartshops in Europe, Canada and other parts of the world since around 2002, purportedly as an incense, as well as over the Internet as an "herbal smoking blend". Even though the manufacturer officially warns against human ingestion of Spice, it is usually smoked for its cannabis-like effects which are believed to be caused by a mixture of synthetic cannabinoid drugs. Several different "flavours" of Spice have been marketed which have been shown to contain different proportions of the synthetic cannabinoid active ingredients, and reportedly produce subtly different effects. A large number of competing products made by other manufacturers have also subsequently appeared around the world.

A bag of *Spice*

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Leonurus sibiricus. However when the product was analysed by laboratories in Germany and elsewhere, it was found that ma characteristic "fingerprint" molecules expected to be present from the claimed plant ingredients could not be located, and als large amounts of synthetic tocopherol present. This suggested that the actual ingredients might not be the same as what was packet, and a German government risk assessment of the product conducted in November 2008 concluded that it was unclea plant ingredients were, where the synthetic tocopherol had come from, and whether the subjective cannabis-like effects were produced by any of the claimed plant ingredients or instead might possibly be caused by a synthetic cannabinoid drug.[1]

Synthetic cannabinoid ingredients

On December 15th 2008, it was announced by German pharmaceutical company THCPharm, that JWH-018 had been found a active components in at least three versions of the supposedly "herbal" smoking blend, cannabis substitute drug Spice, which in a number of countries around the world since 2002 as an "incense" or legal substitute for marijuana.[2][3][4][5]

On January 19th 2009, it was announced by the University of Freiburg in Germany that the other main active substance in Sp undisclosed analogue of the synthetic cannabinoid CP 47,497.[6] On the 22nd January 2009, CP 47,497 along with its dimeth dimethyloctyl and dimethylnonyl homologues, were added to the German controlled drug schedules ("Betäubungsmittelgeset ratios of JWH-018 and CP 47,497 and their analogues had apparently been used in the various different varieties of Spice.

Another potent synthetic cannabinoid, HU-210, has been reported to have been found in Spice seized by the US Customs & [9] but no independent confirmation of this result has yet been made.

Legal status

Designer drugs: Spice drugs

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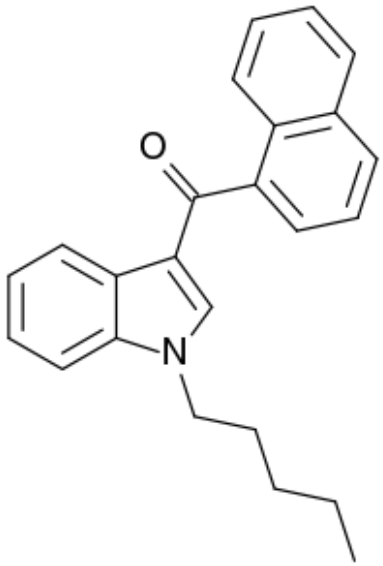
JWH-018

From Wikipedia, the free encyclopedia

JWH-018 (1-pentyl-3-(1-naphthoyl)indole) is an analgesic drug from the aminoalkylindole family, which acts as a cannabinoid agonist at both the CB_1 and CB_2 receptors, with some selectivity for CB_2.[1][2][3] It produces effects in animals very similar to those of THC itself, but with a shorter duration of action.[*citation needed*]

On December 15th 2008, it was announced by German pharmaceutical company THC Pharm, that JWH-018 was found as one of the active components in at least three versions of the herbal blend Spice, which has been sold as an incense, in a number of countries around the world since 2002. [4][5][6]



JWH-018

Systematic (IUPAC) name	
Naphthalen-1-yl-(1-pentylindol-3-yl)methanone	
Identifiers	
CAS number	209414-07-3

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Legal status [edit]

Austria [edit]

The Austrian Ministry of Health announced on 18th December 2008 that Spice would be

Research Chemicals. Classification

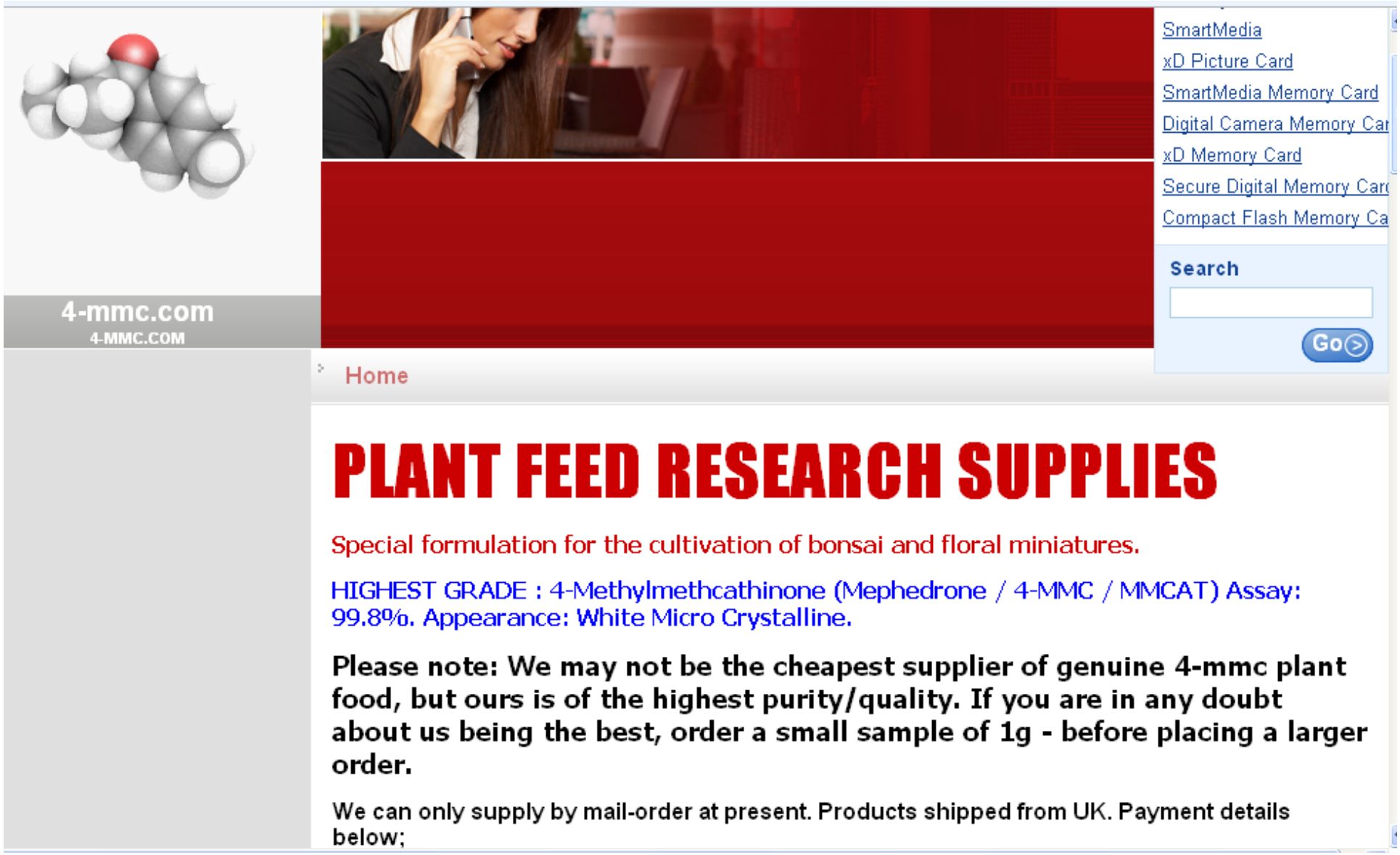
- Phenylethylamines (amphetamine – mescaline derivatives): entactogen and hallucinogenic amphetamines: MDMA
- Ephedrines: methcathinone or ephedrone, methylmethcathinone or mephedrone

- Tryptamines: 5-MeO-tryptamine

Distribution

- Designer drugs
  - Illegal market
  - Massive production and low quality
  - Local or wide distribution by drug dealers
  - Prize depends of disponibility
  - Millions of recreational users
- Research Chemicals
  - Legal or pseudo legal market
  - Limited production and high quality product
  - Disclaimer advice
  - Wide distribution trough internet sites
  - Powder capsulated by users
  - Prize high (depends of purity)
  - Selected population. Closed forums (in Spain)

Research Chemicals



Research Chemicals

- 4-Methylmethcathinone or mephedrone
- Prizes GBP
  - 1g - £14 GBP
  - 5g - £60 GBP
  - 10g - £110 GBP
  - 20g - £180 GBP
  - 50g - £440 GBP
  - Royal Mail Guaranteed Special Delivery : £5 GBP - whatever quantity you order.
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TRC05 **5-Methoxytryptamine hydrochloride** CAS [] **99.0%**	10GM	$ 290.00	O/S
TRC01 - 5MeO-DMT **N,N-Dimethyl-5-Methoxytryptamine base** CAS [1019-45-0] **99.0%**	500MG 1GM 5GM 10GM	$ 127.00 $ 200.00 $ 750.00 $ 1250.00	ADD ADD ADD ADD
TRC02 - 4HO-DET **N,N-Diethyl-4-Hydroxytryptamine base** CAS [] **99.0%**	500MG 1GM 5GM	$ 150.00 $ 249.00 $ 1149.00	ADD ADD ADD
TRC03 - 4Acetoxy-DIPT **N,N-Diisopropyl-4-Acetoxytryptamine hydrochloride** CAS ??? **99.0%**	500MG 1GM 5GM	$ 175.00 $ 300.00 $ 1400.00	ADD ADD ADD
TRC10 **Tryptamin base** CAS [61-54-1] **98.0%**	100GM	$ 319.00	ADD

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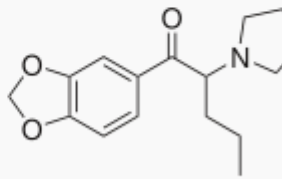
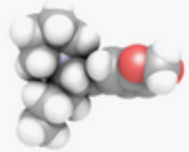
Methylenedioxypyrovalerone

From Wikipedia, the free encyclopedia
(Redirected from MDPV)

Methylenedioxypyrovalerone (**MDPV**, **MDPK**[citation needed]; "**Sonic**"[citation needed], "**Magic**"[citation needed], "**Monkey Dust**"[citation needed], etc) is a psychoactive drug with stimulant and aphrodisiac properties via acting as a norepinephrine-dopamine reuptake inhibitor (NDRI), reportedly with four times the potency of methylphenidate (Ritalin, Focalin, Concerta).[1] MDPV has no history of FDA approved medical use but has been sold since around 2007.[2]





Methylenedioxypyrovale

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Product	Quantity	Price	News:
2,5-dimethoxy-4-chlorophenethylamine 2C-C	500mg	$90	
	1g	$160	
	5g	$500	
In Stock	10g	$920	
2,5-dimethoxy-4-methylphenethylamine 2C-D	500mg	$90	
	1g	$160	
	5g	$500	
In Stock	10g	$920	
2,5-dimethoxy-4-ethylphenethylamine 2C-E	500mg	$90	
	1g	$160	
	5g	$500	
In Stock	10g	$920	

Research Chemicals

- Disclaimer & conditions of use examples
  - These chemicals are for research purposes only
  - Products are for laboratory research purposes only, and are not to be used for any other purposes, including but not limited to, in vitro diagnostic purposes, in foods, drugs, medicinal devices or cosmetics for humans or animals, for any commercial purposes.
  - Also all products are not intended by their manufacturer for human use or consumption.

Research Chemicals

- Disclaimer & conditions of use examples
  - The chemical, physical, and toxicological properties of these chemicals have not been fully investigated and are not guaranteed.

Problems

- Designer drugs
  - New chemicals without previous data
    - e.g. alfa-methyl-fentanyl
  - New chemicals with scarce data in animal or in humans (not controlled)
    - e.g. phenylethylamines and PHIKAL
  - Defective synthesis (impurities or contamination) and/ or wrong synthesis
    - e.g. MPPP and MPTP-induced parkinsonism
  - Fake
- Research Chemicals
  - Fake internet sites

Designer drugs

Movement Disorders
Vol. 23, No. 15, 2008, pp. 2224–2231

Parkinsonism and Dystonia Caused by the Illicit Use of Ephedrone—A Longitudinal Study

Marianna Selikhova, MD, PhD,[1,2] Ljuda Fedoryshyn, MD, PhD,[3] Yuri Matviyenko, MD, PhD, Irena Komnatska, MD,[5] Marianna Kyrylchuk, MD,[3] Lesrek Krolicki, MD, PhD,[6] Andrzej Friedman, MD, FRCP,[7] Andrew Taylor, MD, PhD,[8] H. Rolf Jäger, MD, PhD,[9] Andrew Lees, MD, FRCP,[1*] and Yanush Sanotsky, MD, PhD[3]

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The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

A Parkinsonian Syndrome in Methcathinone Users and the Role of Manganese

Ainārs Stepens, M.D., Ināra Logina, Ph.D., Viesturs Liguts, Ph.D., Pauls Aldiņš, M.D., Ilze Ekšteina, M.D., Ardis Platkājis, Ph.D., Inese Mārtiņsone, M.Sci., Elmārs Tērauds, M.D., Baiba Rozentāle, Ph.D., and Michael Donaghy, F.R.C.P.

ABSTRACT

BACKGROUND

A distinctive extrapyramidal syndrome has been observed in intravenous methcathinone (ephedrone) users in Eastern Europe and Russia.

METHODS

We studied 23 adults in Latvia who had extrapyramidal symptoms and who had injected methcathinone for a mean (±SD) of 6.7±5.1 years. The methcathinone was manufactured under home conditions by potassium permanganate oxidation of ephedrine or pseudoephedrine. All patients were positive for hepatitis C virus, and 20 were also positive for the human immunodeficiency virus (HIV).

RESULTS

The patients reported that the onset of their first neurologic symptoms (gait disturbance in 20 and hypophonia in 3) occurred after a mean of 5.8±4.5 years of methcathinone use. At the time of neurologic evaluation, all 23 patients had gait disturbance and difficulty walking backward; 11 patients were falling daily, and 1 of these patients used a wheelchair. Twenty-one patients had hypophonic speech in

From the Department of Neurology (A.S., I.L.), the Department of Anesthesiology and Intensive Care (V.L.), the Department of Classical Infectology, Tuberculosis, and AIDS (P.A., I.E., B.R.), the Department of Radiology (A.P.), the Institute of Occupational and Environmental Health (I.M.), and the Department of Psychiatry and Addiction (E.T.), Riga Stradins University, Riga, Latvia; and the Department of Clinical Neurology, University of Oxford, Oxford, United Kingdom (M.D.). Address reprint requests to Dr. Donaghy at the Department of Clinical Neurology, University of Oxford, Level 3, West Wing, John Radcliffe Hospital, Headington, Oxford OX3 9DU, United Kingdom, or at joanna.wilkinson@clneuro.ox.ac.uk.

N Engl J Med 2008;358:1009-17.

Research Chemicals

- Summary
  - Relatively new phenomena
  - Epidemiology ?????
  - Users with some degree of expertise looking for new experiences
  - Subgroups of users connected to harm reduction organizations
  - Internet-based
  - Future ?????

ANCONA, ITALY

18th September 2009

Grazie
Thank you for your attention

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