

# Bath Salts - Another Designer Drug

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On March 1, 2011 . . .

## Press Room

[News Releases](#)  
[E-mail updates](#)   
[Speeches & Testimony](#)  
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## About Us

[Mission](#)  
[Leadership](#)  
[History](#)  
[Organizational Chart](#)  
[Programs & Operations](#)  
[Wall of Honor](#)  
[DEA Museum](#)  
[Office Locations](#)

## Careers at DEA

**DEA Drug Information**  
[Drug Information Resources](#)

## Law Enforcement

[Most Wanted](#)  
[Major Operations](#)  
[Threat Assessment](#)  
[Training Programs](#)  
[Stats & Facts](#)  
[Additional Resources](#)

## Drug Prevention

[For Young Adults](#)

## -- TOP STORY --

### Chemicals Used in "Spice" and "K2" Type Products Now Under Federal Control and Regulation

*DEA Will Study Whether To Permanently Control Five Substances*

**MAR 01 - WASHINGTON, D.C.** – The United States Drug Enforcement Administration (DEA) today exercised its emergency scheduling authority to control five chemicals (JWH-018, JWH-073, JWH-200, CP-47,497, and cannabicyclohexanol) used to make so-called "fake pot" products. Except as authorized by law, this action makes possessing and selling these chemicals or the products that contain them illegal in the United States. This emergency action was necessary to prevent an imminent threat to public health and safety. The temporary scheduling action will remain in effect for at least one year while the DEA and the United States Department of Health and Human Services (DHHS) further study whether these chemicals should be permanently controlled.

**Notice of Intent to Temporarily Control Five Synthetic Cannabinoids >>**

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Chemicals like K-2 and Spice are designated as Schedule I substances, the most restrictive category under the Controlled Substances Act.

# Legal Status of Synthetic Cannabinoids (DEA)

- March 1, 2011, the DEA, issued final notice to temporarily place five synthetic cannabinoids into the Controlled Substances Act (CSA) for at least one year
- synthetic cannabinoids treated as Schedule 1 drugs
  - ◆ a drug that has a high potential for abuse
  - ◆ a drug that has no currently accepted medical use in treatment in the United States
  - ◆ there is a lack of accepted safety for use of the drug under medical supervision

# Legal Status of Synthetic Cannabinoids (DEA)

- synthetic cannabinoids covered under the DEA's proposed new rule includes the following:
  - ◆ JWH-018 \*
  - ◆ JWH-073 \*
  - ◆ JWH-200
  - ◆ CP-47,497
  - ◆ CP-47,497 (C-8 homologue)

	<b>JWH-018 (mg/g)</b>	<b>JWH-073 (mg/g)</b>	<b>CP47,497 (n=8) (mg/g)</b>	<b>JWH-25 (mg/g)</b>
<b>K2 Blonde</b>	12	13	-	-
<b>K2 Standard</b>	9	9	-	-
<b>K2 Citron</b>	10	10	-	-
<b>K2* (Unknown)</b>	-	-	6	-
<b>K2 Summit</b>	11	9	-	-
<b>K2 Blue</b>	15	-	-	-
<b>K2 Pink</b>	11	-	-	-
<b>K2 Latte</b>	16	0.28	-	14
<b>K2 Mint</b>	19	0.30	-	-
<b>K2 Silver</b>	8	-	-	16
<b>Spike Gold</b>	20	11	-	-
<b>Spike Maxx</b>	17	-	-	19
<b>Spike Diamond</b>	17	0.07	-	-
<b>Spike Silver</b>	9	16	-	-
<b>Space</b>	10	-	-	-
<b>Herbal blends*</b>	2.0 – 35.9	-	1.1 – 16.9	-

# Ramifications of DEA Action:

- eliminate the commercial distribution of synthetic cannabinoids
- drive synthetic cannabinoids underground
- limit their availability
- impact on criminal justice - wait and see?

# Bath Salts - Another Designer Drug



# What Drives the Production Designer Drugs ?

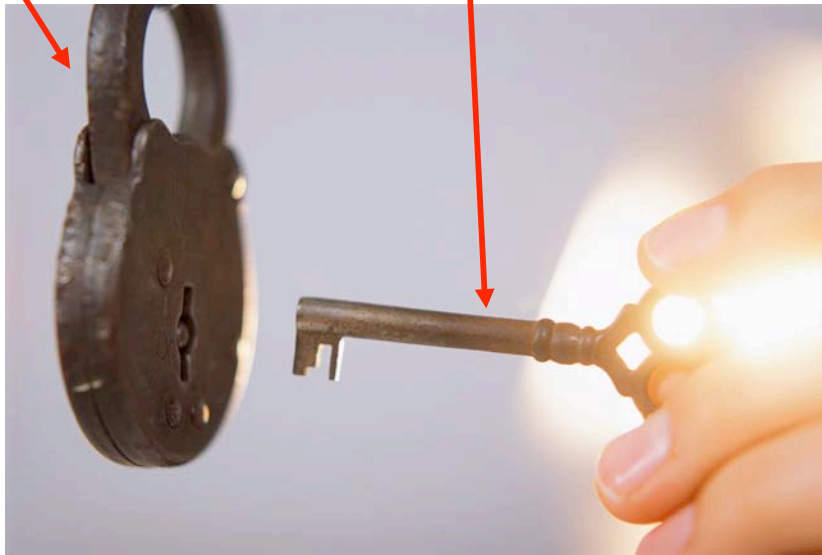
- consumer preferences
- law enforcement control

Why Illicit Chemists  
Make Designer Drugs?

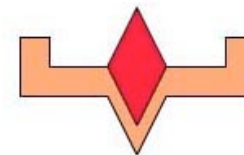
To create an agonist – is a chemical that binds to a receptor and triggers a response – often mimicking the action of a naturally occurring substance.

Receptor

Drug (agonist)



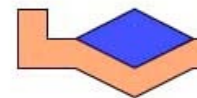
Full Agonist



Large stimulus to cellular signaling machinery

LARGE EFFECT

Partial Agonist



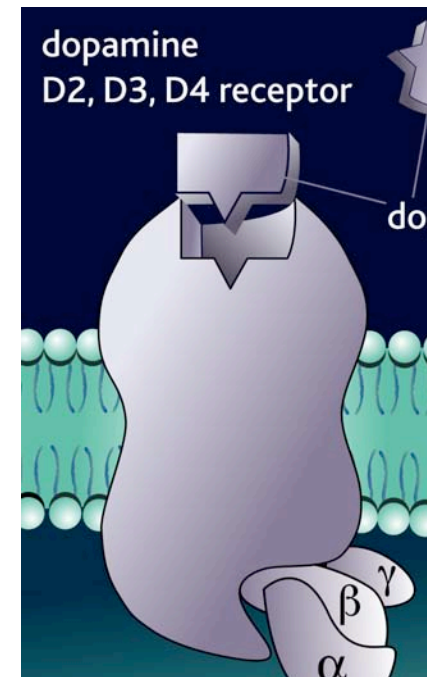
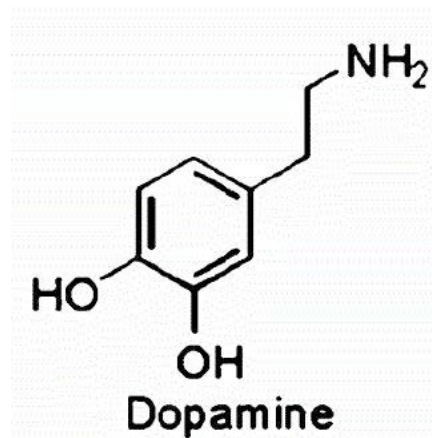
Small stimulus to cellular signaling machinery

small effect

# Why Designer Drugs Work

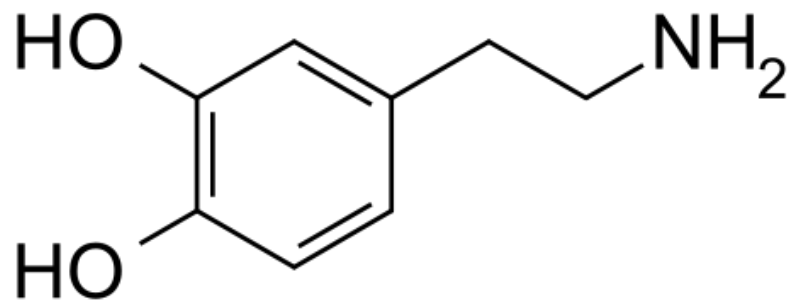


- Brain Receptors
- Natural Neurotransmitters
  - ◆ noradrenaline
  - ◆ dopamine

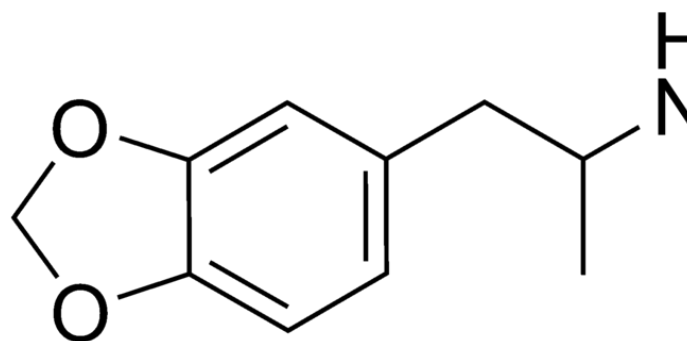


# Designer Chemist Trick Brain

Dopamine



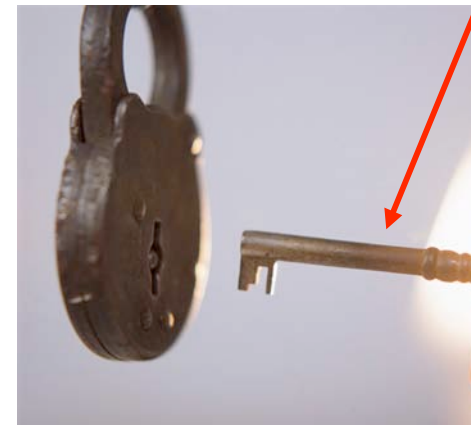
MDMA



# Why Change the Key?

- prolong the effect of the drug
- increase the potency of the drug
- “select” the desired effect
- make the drug more difficult to detect
- avoid patent infringement
- make an illegal drug “legal”

D



# What Are Bath Salts?

# Bath Salts:

- The term bath salts refers to a range of water-soluble products designed to be added to a bath. They are said to improve cleaning, improve the experience of bathing, serve as a vehicle for cosmetic agents, and some even claim medical benefits. Bath salts have been developed which mimic the properties of natural mineral baths or hot springs.



# Sold Under the Names:

- Ivory Wave
- Ivory Pure
- Ivory Coast
- Purple Wave
- Vanilla Sky

**Pure Ivory** A man is 6ft. tall, works in a butcher shop, & wears size 11 shoes. What Does He Weigh?  
Collect both packs to reveal the answer..

- Not for human consumption • Not to be sold to persons under age 18 years
- Not for sale to minors • In case of consumption contact doctor immediately

**Ingredients:**  
Pure Ivory contains a single concentrated water softening agent.

**\*\*NOT FOR HUMAN CONSUMPTION\*\***

MANUFACTURED IN THE USA FOR COLLECTORS INTERNATIONAL



IVORY WAVE VS PURE IVORY	
Net. Weight:	.200gr
Contents:	?? Formula has changed several times. Manufacturer lies about ingredients..
Price:	\$25-\$35 (Beware of Fakes)
	.250gr (25% more!)
	PURE 99.3% MDPV
	\$24.99 @ PremiumBlendherb (less if you use one of their coupons)

### Ivory Wave Ultra 200mg Bath Salt

**Ivory Wave concentrated bath salt. Relax and soak away Ivory Wave. Add the contents to a bath to naturally soften the water which will leave you feeling very soothed and relaxed.**

**Please, if you are a first time user of Ivory Wave we strongly recommend to start with a very small amount to your bath to see your body's tolerance. Once you get used to the strong effect of Ivory Wave in your bath you can use more to reach the complete relaxation you want.**

**Not For Human Consumption.**

**Ingredients:** Epsom Salts, Sodium Bicarbonate, Sodium Chloride, Minerals and naturally occurring trace elements.

# Health Hazard?

## Ivory Wave drug implicated in death of 24-year-old man

Drug bought online as legal high following ban on mephedrone causing several hospitalisations and possibly one death

## **The bride killed by bath salts - the new 'legal high' Ivory Wave drug that's sweeping Britain**

## **HALLUCINATING BOY RAN AMOK IN HOSPITAL**

*By Staff Reporter*

## **'Bath salts' legal high lands 20 in hospital in a week**

Adam Morris - Evening News - 9th August 2010

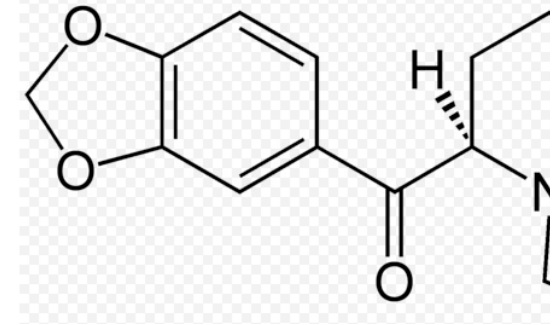
# A New Designer Drug

# What is Ivory Wave:



- Methylenedioxypropylamphetamine (MDPV) is a psychoactive drug with stimulant properties which acts as both a norepinephrine-dopamine reuptake inhibitor (NDRI).
- MDPV has four times the potency of Ritalin
- MDPV - no history of FDA approved medical use
- sold since 2007 as a research chemical

# MDPV:



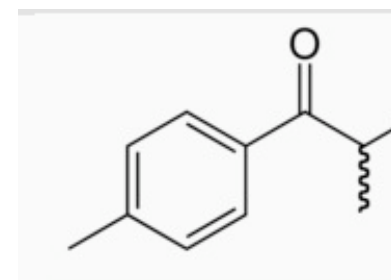
- currently popular in Europe, UK & Australia
- is usually snorted - similar to cocaine
- considered extremely addictive
- MDPV is “legal”
- adverse medical/psychiatric ramifications
- Few drug tests available commercially

# Mephedrone

- reformulation of cathinone is a chemical found in the khat plant of Eastern Africa
- khat existence traced to 15th C. Ethiopia
- grown in Somalia, Yemen, Kenya, Ethiopia
- khat is banned in the U.S.

# Methylmethcathinone (Mephedron

- designer drug chemically similar to cathinone
- first synthesized in 1929
- amphetamine-like properties
- powerful synthetic stimulant
- “rediscovered” by synthetic chemists in 2003
- widespread in Europe, Australia, US





# Pharmacological Effects of “Bath Salts”:

- increase heart rate & blood pressure
- pupil dilation
- hyperactivity, arousal & over stimulation
- increased energy & motivation
- euphoria - agitation
- dizziness
- nausea
- breathing difficulties
- diminished perception of the requirement for food and sleep

# Designer Drug Evolutionary Path

# Plant to Designer Drug

Plant	Natural Drug(s)	Synthetic Drug(s)	Designer Drug(s)
Ma Huang Chinese herb (ephedra sinica)	ephedrine & pseudo-ephedrine (natural stimulants)	amphetamine & methamphetamine developed in the early 1900's	MDMA (Ecstasy)

# Plant to Designer Drug

Plant	Natural Drug(s)	Synthetic Drug(s)	Designer Drug(s)
Cannabis sativa (marijuana)	delta - 9 tetrahydrocannabinol (THC)	Dronabinol & Marinol  HU, CP & JWH	synthetic cannabinoids (JWH-018) HU-210 CP-49,499

# Plant to Designer Drug

Plant	Natural Drug(s)	Synthetic Drug(s)	Designer Drug(s)
Khat ( <i>catha edulis</i> )	cathinone (natural stimulant)	phenyl- propanolamine (PPA - weight loss drug) methcathinone synthesized in 1928 in Soviet Union (antidepressant)	mephedrone (methylnor- -cathinone) one of the bath salts constituents

## States Banning “Bath Salts”:

- Louisiana
- North Dakota
- Florida
- Missouri
- Kentucky
- Hawaii
- Mississippi

Can “Bath Salts” be  
Detected by Drug  
Testing?

# Drug Testing:

- NO on-site, rapid, instant tests
- NO laboratory-based screening tests
- laboratories employing LC/MS/MS technology
- unknowns regarding this testing



# Laboratories:

- Redwood Toxicology Laboratory  
Santa Rosa, CA
- National Medical Services  
Willow Grove, PA
- MedTox Scientific, St. Paul, MN
- Sterling Reference Laboratories  
Tacoma, WA
- Alere Toxicology  
Gretna, LA & Richmond, VA

Are There Control  
Strategies Other Than  
Testing?

# Alternative Control Strategies:

- community supervision
- search & seizure (client contract)
  - ◆ car, home, possessions

# Court's Response:

- place specific designer drug prohibition in your client contract
- establish a date certain testing date - inform client population
- establish sanction severity
- select participants for testing where there are indications of herbal incense use
- identify positive participants in court & sanction openly to enhance deterrent effect
- provide opportunity for participants to self-report

# Client Prohibition Guidance

- Any and all “designer drugs” that can be purchased legally, over the counter without a physician’s prescription are strictly prohibited.
- Any and all “smoking mixtures” (other than products specifically designated to contain only tobacco) are strictly prohibited.
- Any and all products sold or marketed under false pretenses with the warning “Not for Human Consumption” are strictly prohibited.

The Next Wave?

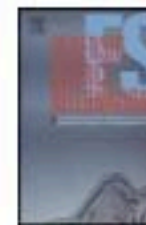
# *2C-E* Nicknamed "Europa"

- synthesized in 1970's -1980's
- psychedelic phenethylamine
- taken orally
- powerful hallucinogenic effects
- high can last 6- 12 hours
- sold through European sources
- one death reported in MN on March 11, 20

# 2C-E Nicknamed "Europa"

- synthesized by Alexander Shulgin
- popularized MDMA (Ecstasy)
- PIHKAL book (1991)
- 2C-I another phenethylamine available
- 2C-E is chemically related to other 2C phenethylamines
- exact legal status is unclear - 2C-B banned under CSA





## Spice: A never ending story?

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### ABSTRACT

On January 22nd 2009, the German Health Authorities prohibited several non-traditional cannabinoids that proved to be the active components in popular "Bio-Designer-Drugs" like "Spice" and analogue products. The recent detection of CP 47,497-C8 in Europe and Japan documents that these products have already spread world wide. We synthesized several potentially interesting alkylaminoindole (alkylchain C<sub>3</sub> to C<sub>7</sub>) and isolated CP 47,497-C8 from "Spice Gold". The compounds were purified and characterized by NMR and mass spectrometry methods. With the aid of these authentic references we were able to detect and quantify added psychoactive compounds in different herbal blends. Samples that were acquired before the prohibition in December 2008 contained either CP 47,497-C8 (5.4–11.0 mg/g) or JWH-018 (2.3 mg/g). Some samples acquired in March 2009, 4 weeks after the prohibition took place, still contained CP 47,497-C8 (3.0–3.3 mg/g) but JWH-018 was not detected anymore. Instead it was replaced by its non-regulated C<sub>4</sub>-homolog JWH-073 (5.8–22.9 mg/g). Furthermore some of the new products did not contain any non-traditional cannabinoids. To our knowledge this is the first report of the appearance JWH-073 as a new designer drug. The data and method presented here will facilitate and accelerate the detection of these compounds in complex matrices.

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# Designer Drugs:

- designer drugs are here to stay
- similar evolutionary patterns
- testing will nearly always lag behind
- legal controls will be challenging and delayed
- BE PROACTIVE!
- build community supervision/expand search & seizure efforts
- design client contract specifically address designer drugs

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