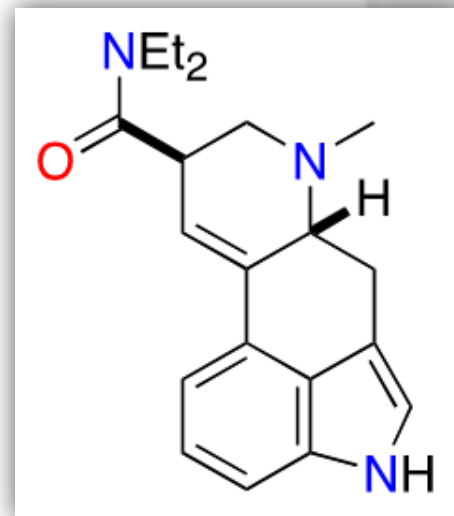


Lysergic Acid Diethylamide (LSD)

Discovered by Albert Hofmann in 1943

Semi-synthetic

Derivative of alkaloids from *Claviceps purpurea*



LSD

Lysergic Acid Diethylamide (LSD)

Popular in the 1960s

Uncommon now



LSD harder to make than other semi-synthetics

DNA

Fingerprints

Fibre Analysis

Poison

Blood

Lysergic Acid Diethylamide (LSD)

Potent hallucinogen



Disrupt communication
between neurons

LSD usage has caused numerous fatalities

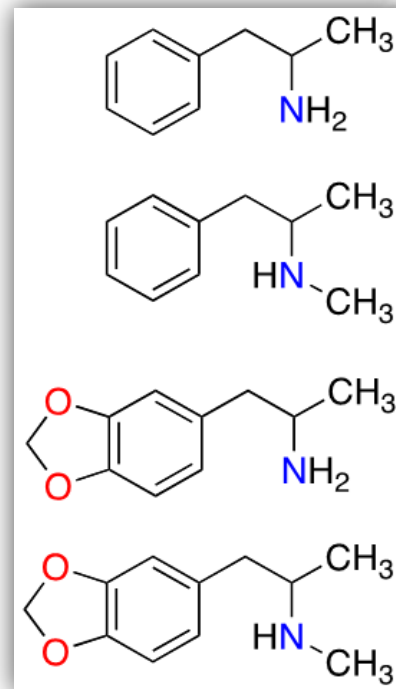
Amphetamines

Synthetic compounds

Different synthetic routes



Characteristic impurities



Amphetamines

Amphetamines

Controlling the amphetamine business

1 Shut down laboratories

2 Control precursor chemicals



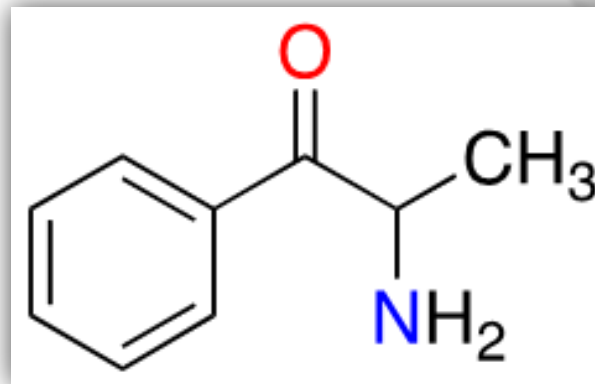
Starting materials to
make amphetamines

Amphetamines

Natural relatives



Cathinone



Cathinone

Cathinone

Present in the leaves
of the qat plant



Widely chewed



A lot of water needed
to grow qat plant



Qat

Cathinone

Qat leaves chewed fresh



Cathinone is unstable and easily lost

Illegal in some countries



U.S.A.

Ketamines

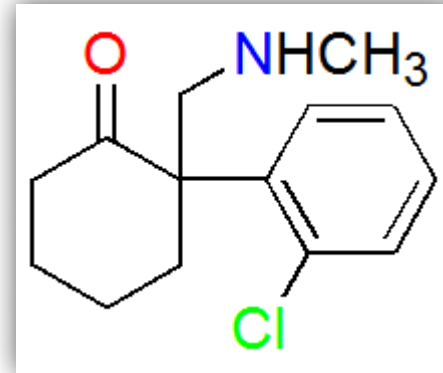
Synthetic

Originally an anesthetic

Side effects



Now used for veterinary purposes only



Ketamines

Ketamines

Sold in the illegal drugs market



Usually stolen from veterinary supply companies or veterinarians

Ketamines

Hallucinogen



Affects memory, sensation and mood



Causes delirium, amnesia and depression

Ketamines

Solid form or liquid form

May be



Ingested



Smoked



Injected

Analogs

Heroin



Analog of morphine

Etorpine



Analog of morphine

Fingerprints

Fibre Analysis

Poison

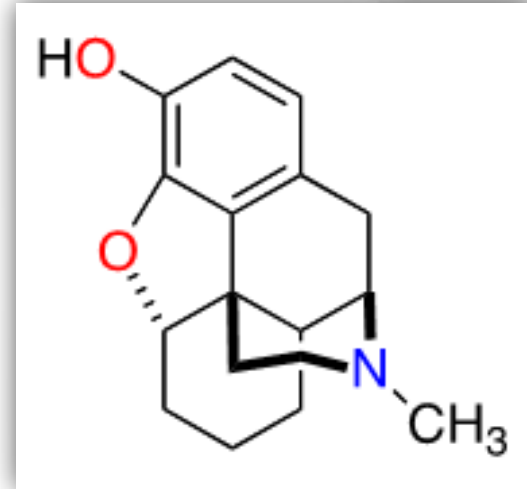
Blood

Desomorphine

Made from morphine

More potent than morphine

Not readily available
to illegal users



Desomorphine

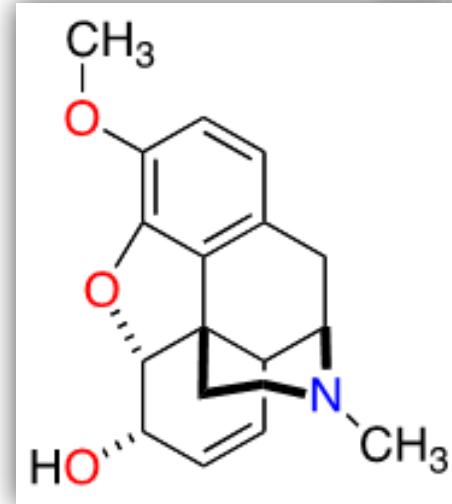
Codeine

Made from morphine

Extracted from opium

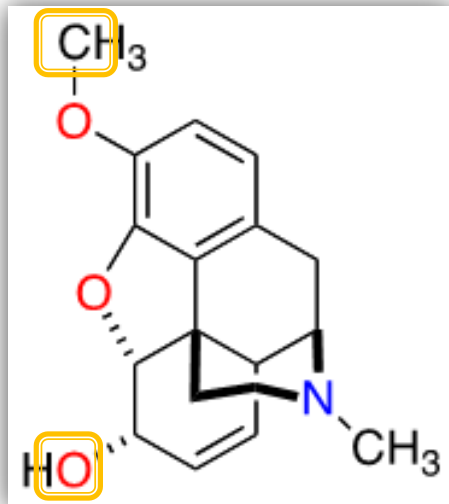
Used in cold medicines

Controlled to different extents



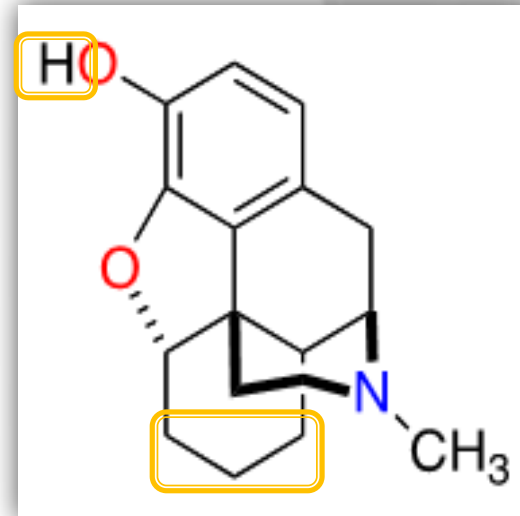
Codeine

Analogs



Codeine

Iodine
Red phosphorus
Hydrochloric acid
Gasoline or oil



Desomorphine

“Krokodil”

Damage tissues when injected into veins



Skin becomes hard and scaly

<http://www.dailymail.co.uk/news/article-2460854/Krokodil-Two-sisters-claim-proof-Russian-flesh-eating-drug-used-U-S.html>

“Krokodil”

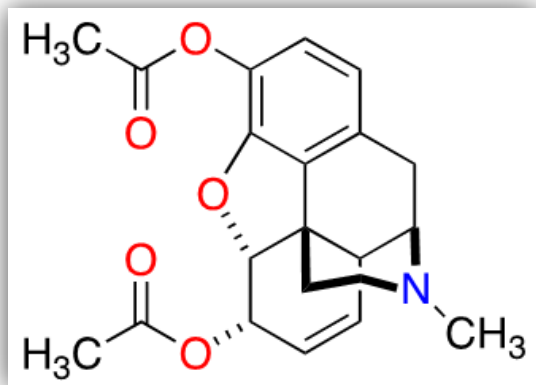
Very addictive

Life expectancy of about a year

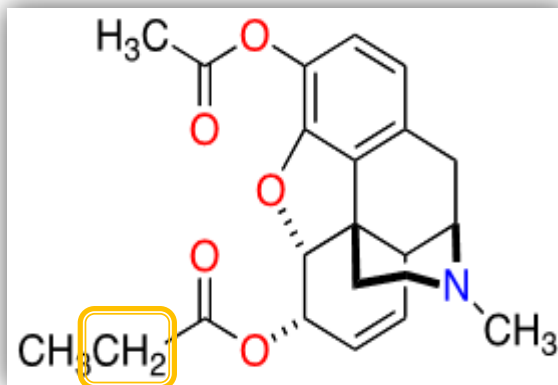
Spreading to the rest of the world

<http://www.ocalapost.com/krokodil-russian-drug-kills-hits-u-s/>

“Designer Drugs”



Diamorphine



Not diamorphine

As effective as diamorphine

Analogs

Illegal chemical laboratories
can modify drug molecules



“Designer drugs”



Legal

Analogs

Legal solutions

- 1 Control specific compounds as they become a problem
- 2 Control classes of compounds

Analogs

All esters of morphine made illegal

Danger



May be banning something useful

Analogs

Legal solutions

- 1 Control specific compounds as they become a problem
- 2 Control classes of compounds
- 3 Control analogs

Analogs

What is an analog?

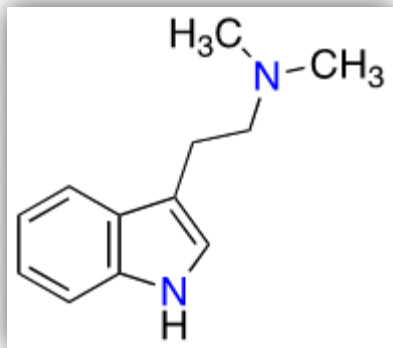


Definition has to be understood by the legal profession



“Federal Analog Act”

“Federal Analog Act”



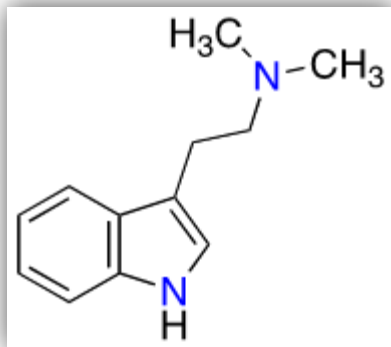
DMT

Dimethyl tryptamine

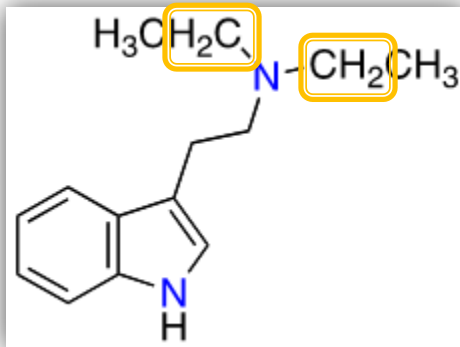


Naturally occurring

“Federal Analog Act”



DMT



DET

Diethyltryptamine

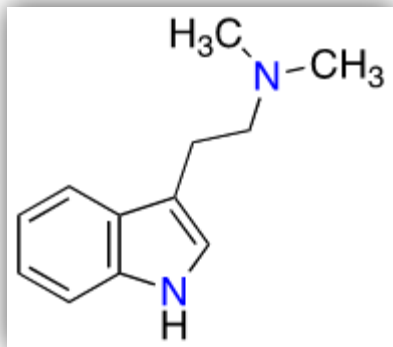


Synthetic

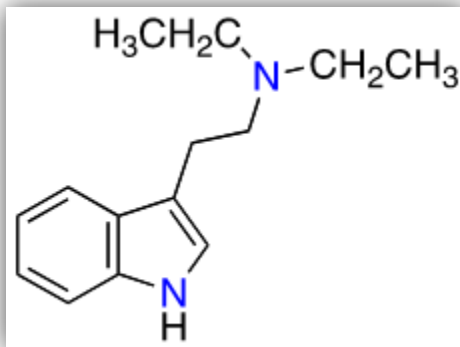


Analog of DMT

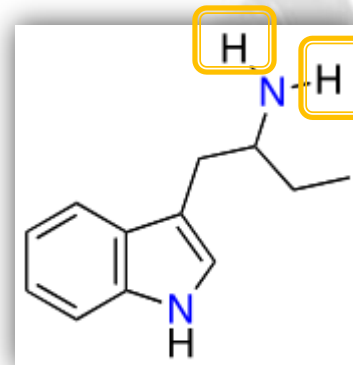
“Federal Analog Act”



DMT



DET



AET

α-ethyltryptamine



Analog of DMT



Synthetic

“Federal Analog Act”

DMT



Specifically controlled

DET



Specifically controlled

AET



Analog



Court: “not an analog”



Now specifically controlled

Synthetic chemistry

Beneficial compounds



Pharmaceuticals

Disadvantages



Illegal drugs market

DNA

Fingerprints

Fibre Analysis

Poison

Blood