

Learning Objectives

- 1 List the different types of illegal drugs
- 2 Describe how illegal drugs can be detected and determined
- 3 Explain the techniques used in the detection and determination of illegal drugs

Illegal drugs

1 Natural chemicals



From plants and other creatures



Used since ancient times



Morphine from opium poppy

Illegal drugs

1 Natural chemicals



Chemical modification

2 Semi-synthetic drugs



Aspirin

Illegal drugs

1 Natural chemicals

2 Semi-synthetic drugs

3 Synthetic drugs



Misuse of
pharmaceuticals



Abuse of solvents

Illegal drugs

- 1 Natural chemicals
- 2 Semi-synthetic drugs
- 3 Synthetic drugs

Physical and psychological addiction

Natural substances

“The fly agarics are dried and eaten in large pieces. After about half an hour, the person becomes completely intoxicated and experiences extraordinary visions. Those who cannot afford the high price of the mushrooms drink the urine of those who have eaten, whereupon they become intoxicated, if not more so.”



Georg Steller in Siberia, 1774

Fly agarics



Fly agaric mushroom

Fly agarics

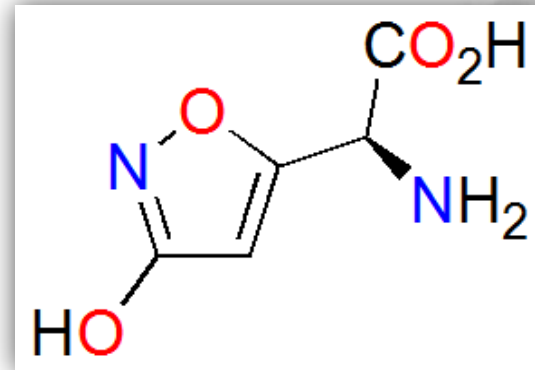
Contains ibotenic acid



Become intoxicated and hallucinate



Interferes with brain's neurotransmitters



Ibotenic acid

Peyote cactus



Peyote cactus

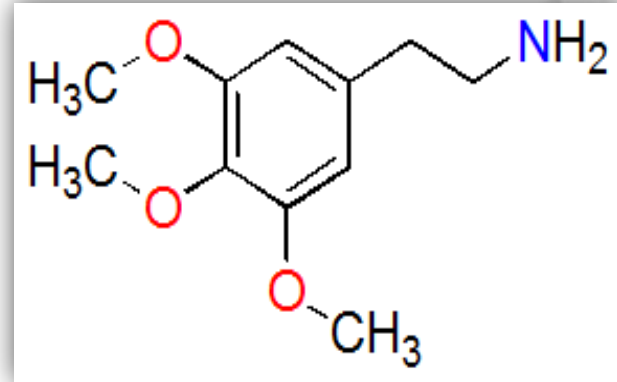
Peyote cactus

Contains mescaline

Used in Mexican religions for thousands of years

Spread to Native Americans in late 19th century

Illegal in U.S.A. **except** for religious purposes



Mescaline

Cannabis

Also known as grass, pot,
hemp, hashish, marijuana

Hemp fibers



Make rope



Cannabis plant

Cannabis

First discovered by the Crusaders?

Old Man of the Mountains



Organization to supply assassins



Assassins were fed cannabis

Cannabis

First of Europeans to describe cannabis use



Marco Polo

Cannabis habit



First brought to Europe
by Napoleon's soldiers

Cannabis

Typical method of ingesting



Take *cannabis sativa*



Usually smoked

DNA

Fingerprints

Fibre Analysis

Poison

Blood

Cannabis

Identified botanically



Shape of leaves



Characteristic smell



Cystolithic trichomes

Closest relative is the hop plant

Cannabis

Also consumed as



Cannabis resin



Cannabis oil

Cannabis



Cannabis food products

Cannabis

Cannabis leaves



Cannabis chocolate

Cannabis



Cannabis food products



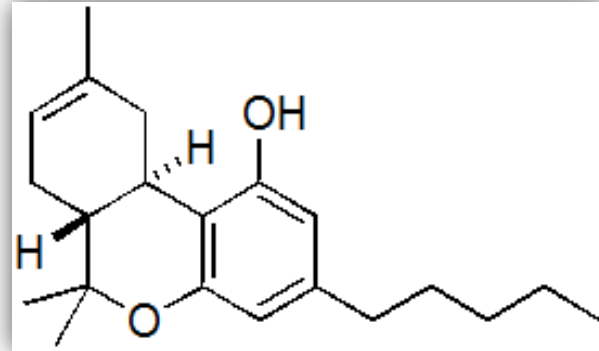
Cannabis vodka

Cannabis

Δ^8 - tetrahydrocannabinol



Multiple effects
on the CNS



Δ^8 - tetrahydrocannabinol

Cannabis

Δ^8 - tetrahydrocannabinol



Effective against chemotherapy side effects



Synthetic alternatives now available



Medical sales legal in 14 U.S. states



Legal for all purposes in some states

Obtaining cannabis

Smuggle in from the
country of origin

DNA

Fingerprints

Fibre Analysis

Poison

Blood

Obtaining cannabis

Smuggle in from the country of origin

Grown under right conditions

Officer dismantling a cannabis factory

