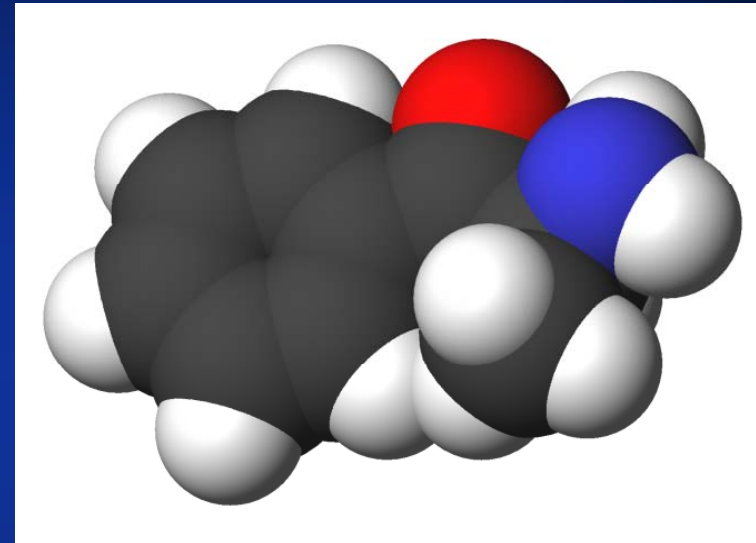


CNS-stimulating and somatic effects of Khat



2nd KRP Int. Symposium 2011 Addis Ababa

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Khat in Switzerland

Customs confiscates: >775 kg (2009)
→ Ethnic groups, no street drug

20 minuten ONLINE

Video Radio TV Infografik E-Paper

Nachrichten Wirtschaft Sport Digital People Life Wissen

Ausland Schweiz Zürich Bern Basel Mittelland Zentralschweiz Ostschweiz

Mehr Nachrichten aus: Basel

Basel

Ort oder PLZ eingeben

DROGENSCHMUGGEL 29. April 2010 12:16; Akt: 29.04.2010 12:31

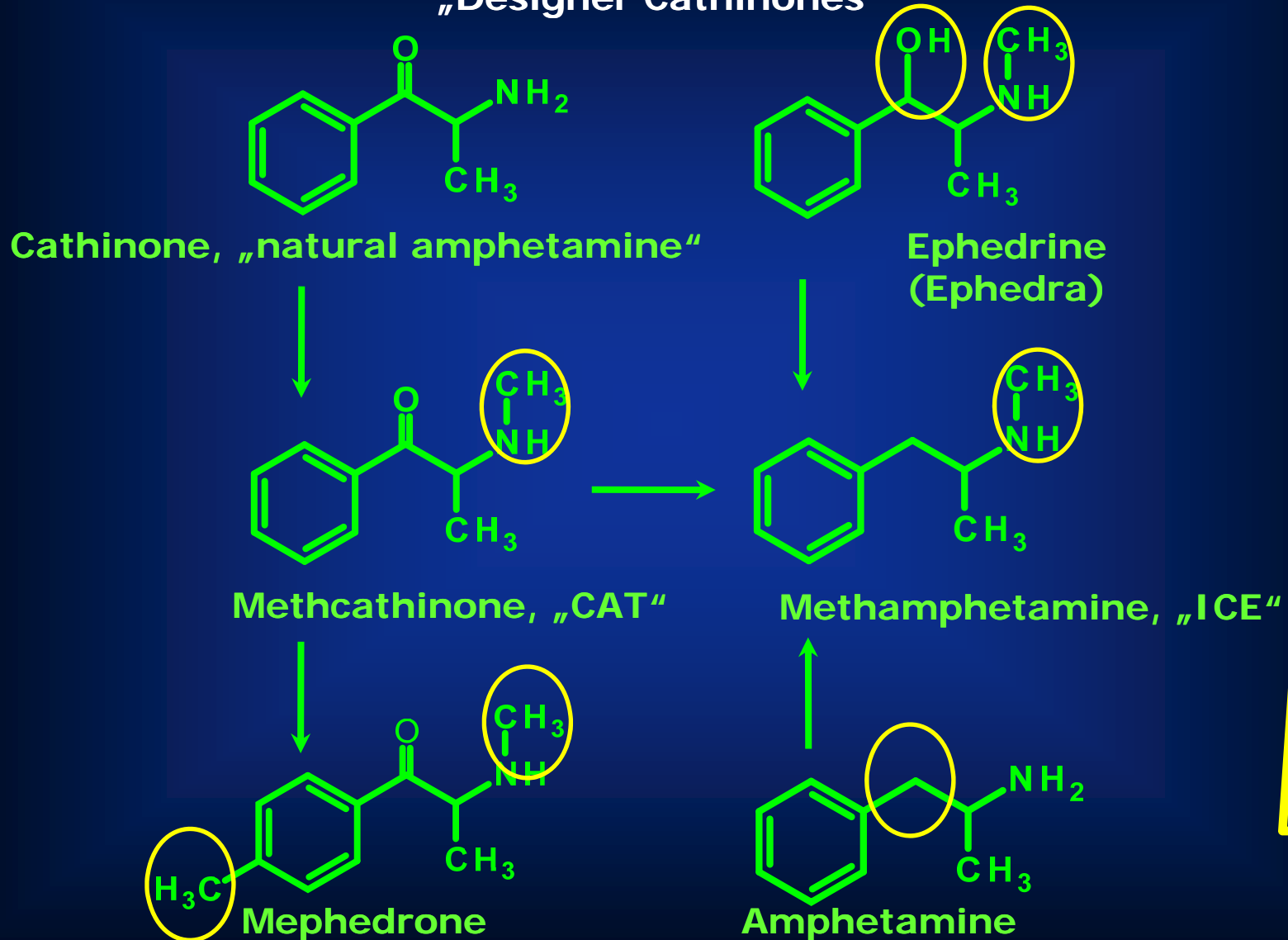
Zöllner beschlagnahmen 215 Kilo Khat

Schweizer Grenzwächter haben in der Region Basel einen Drogen-Schmuggel aufgedeckt. Ein Holländer wurde mit der Droge Khat im Auto erwischt.



Increase of potency

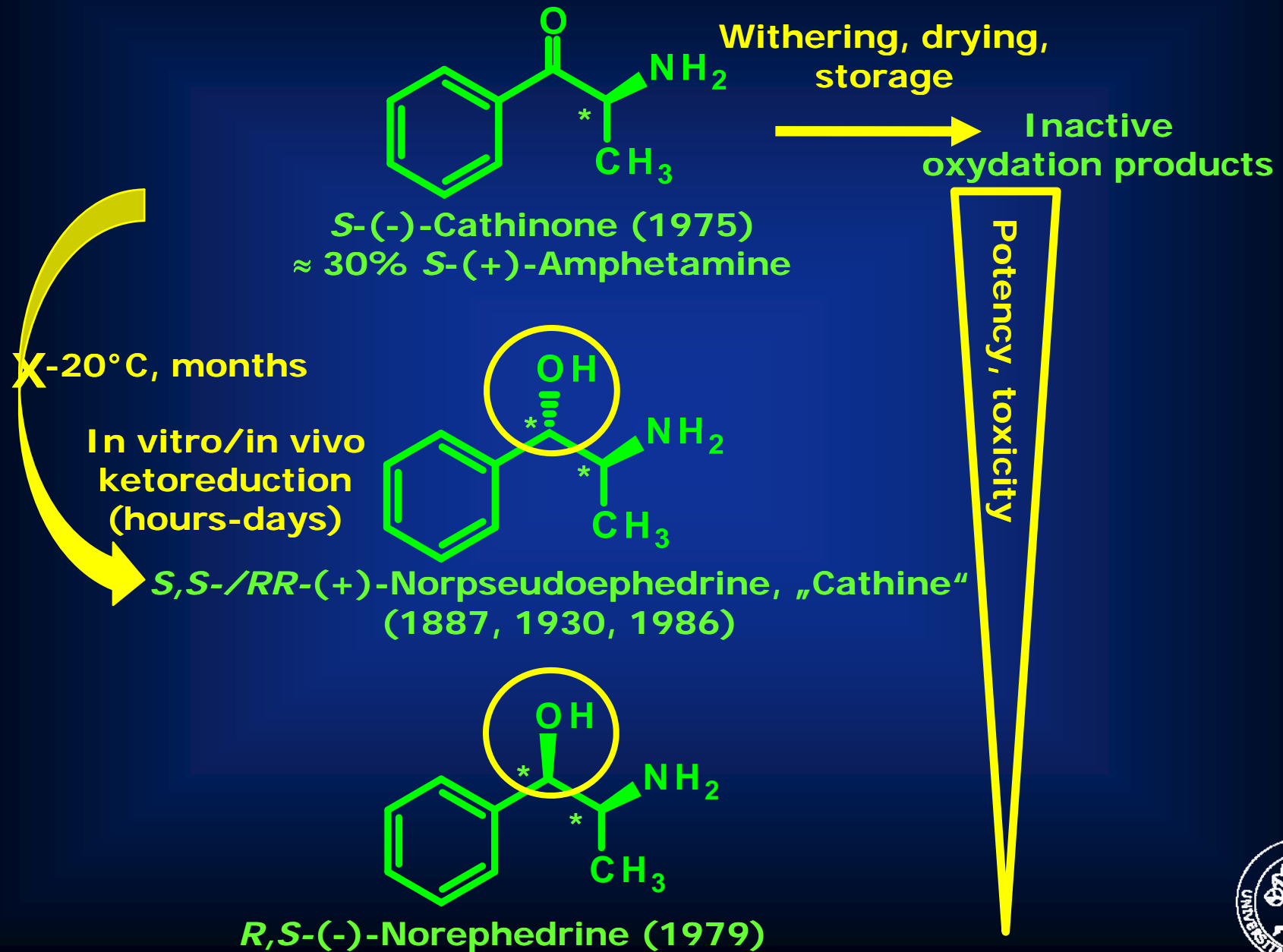
„Designer Cathinones“



Potency, toxicity

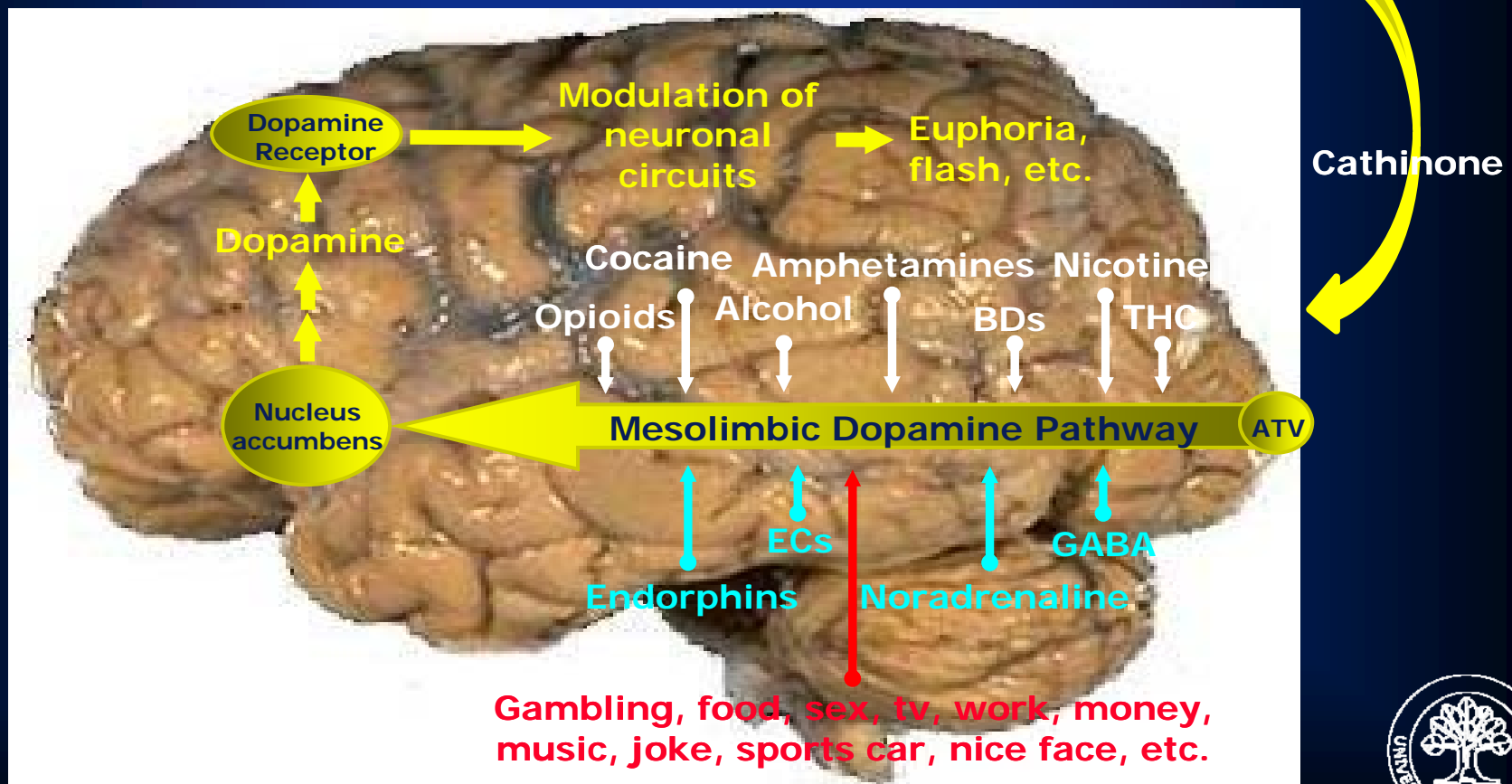


Decrease of potency



Mechanism of CNS action

Khat chewing → bolus → alkaloid extraction → absorption via oral mucosa and GIT → interaction with dopaminergic, noradrenergic and serotonergic system → mesolimbic reward system



Central and peripheral effects Khat vs. Cathinone

Khat, Man

Anorexia*
Insomnia*
Hyperactivity*
Excitation*
Analgesia*
Euphoria*
Logorrhea*
Hyperthermia**
Respiration↑**
Mydriasis**
Arrhythmias**
Hypertension**
Constipation***
Craving*

Cathinone, Animal

Anorexia
Restlessness
Hypermotility
Stereotyped oral activity
Analgesia
-
-
Hyperthermia
Oxygen consumption↑
Mydriasis
Pos. inotropic & chronotropic effects
Hypertension
-
Self-administration↑

* Cathinone

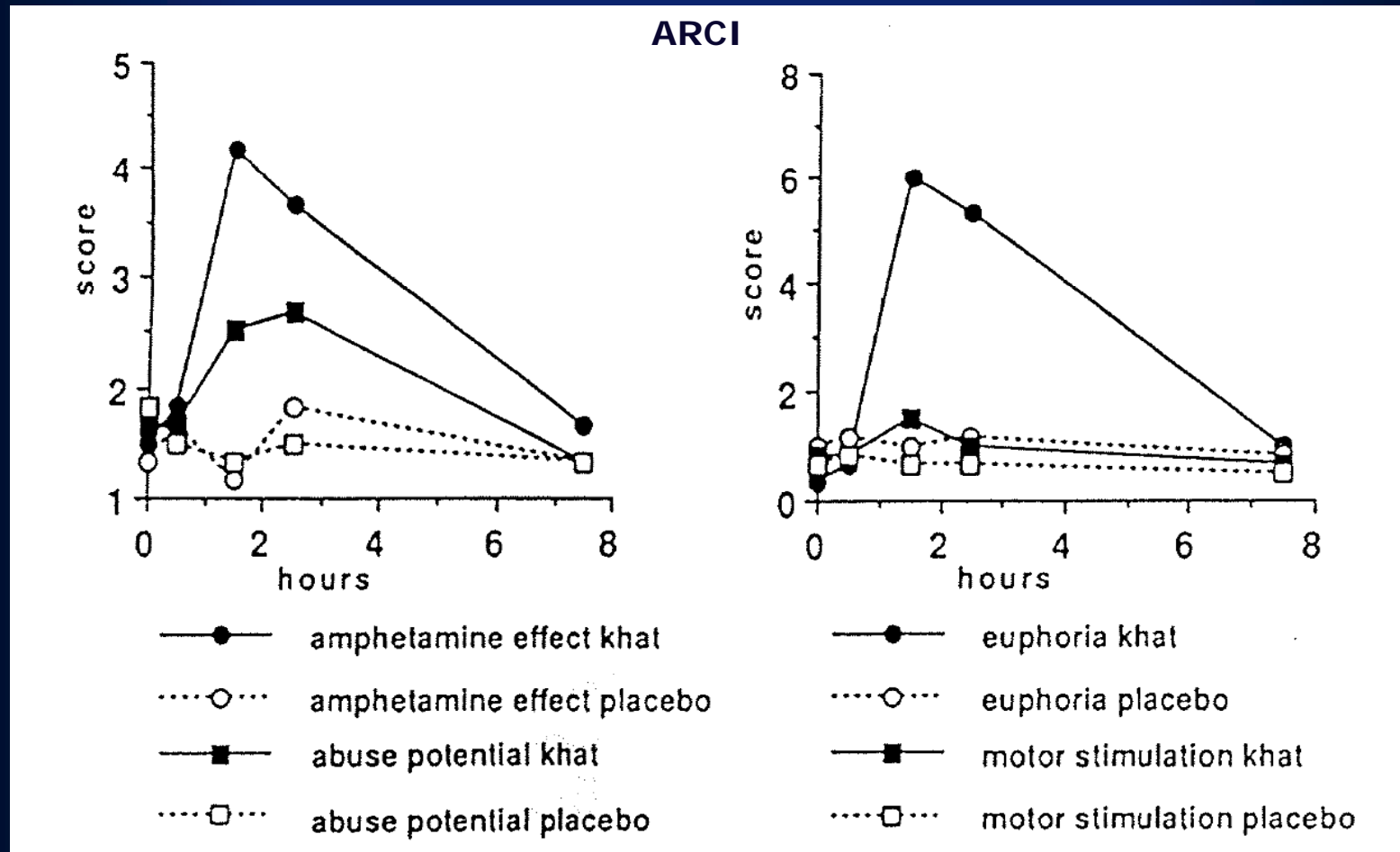
** Ind. SM (NA↑, NPE und NE)

*** Tannins



Khat = natural amphetamine (1)

Clinical evidence from RDP trials

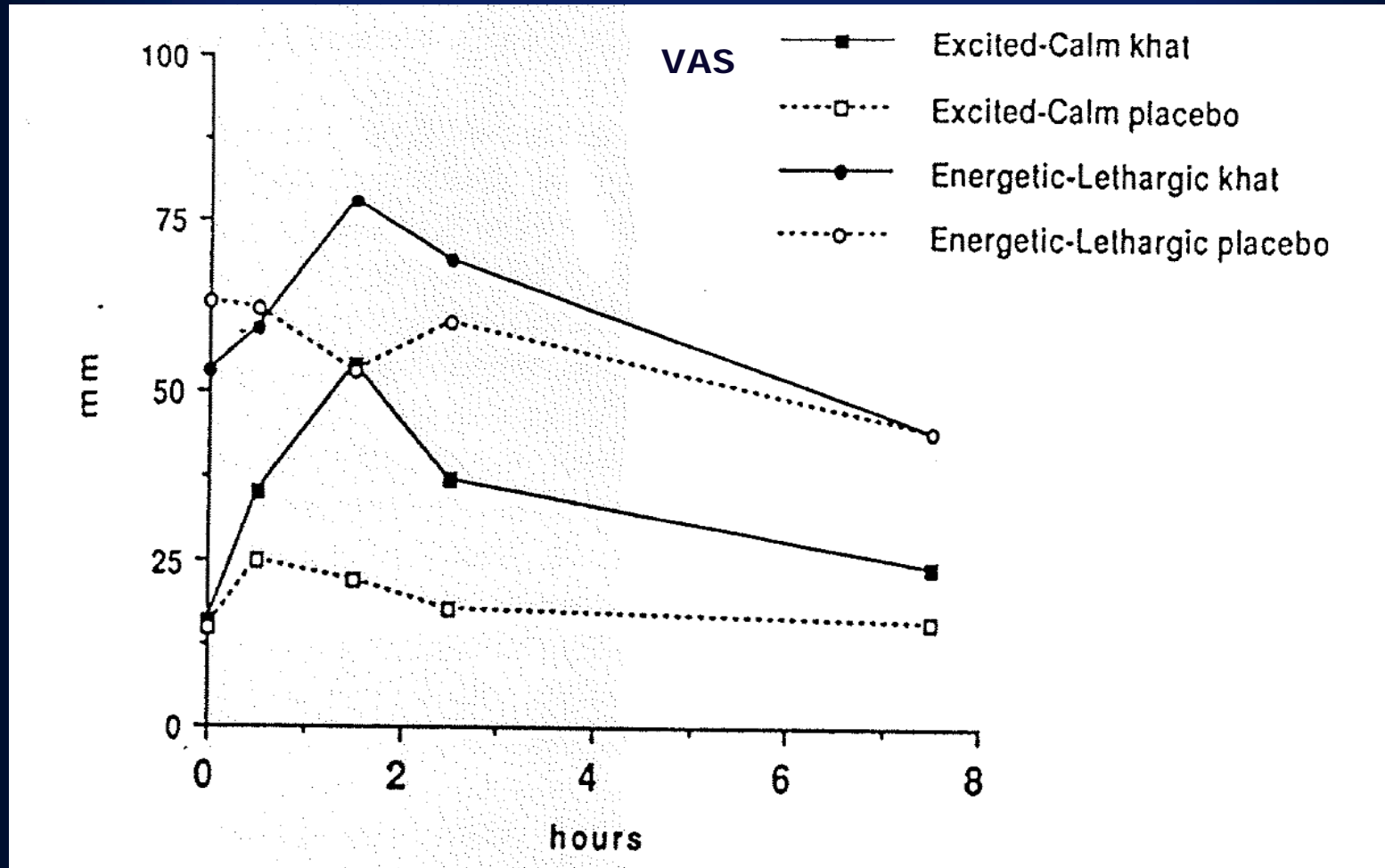


[Widler et al, Clin Pharm Ther 1994]



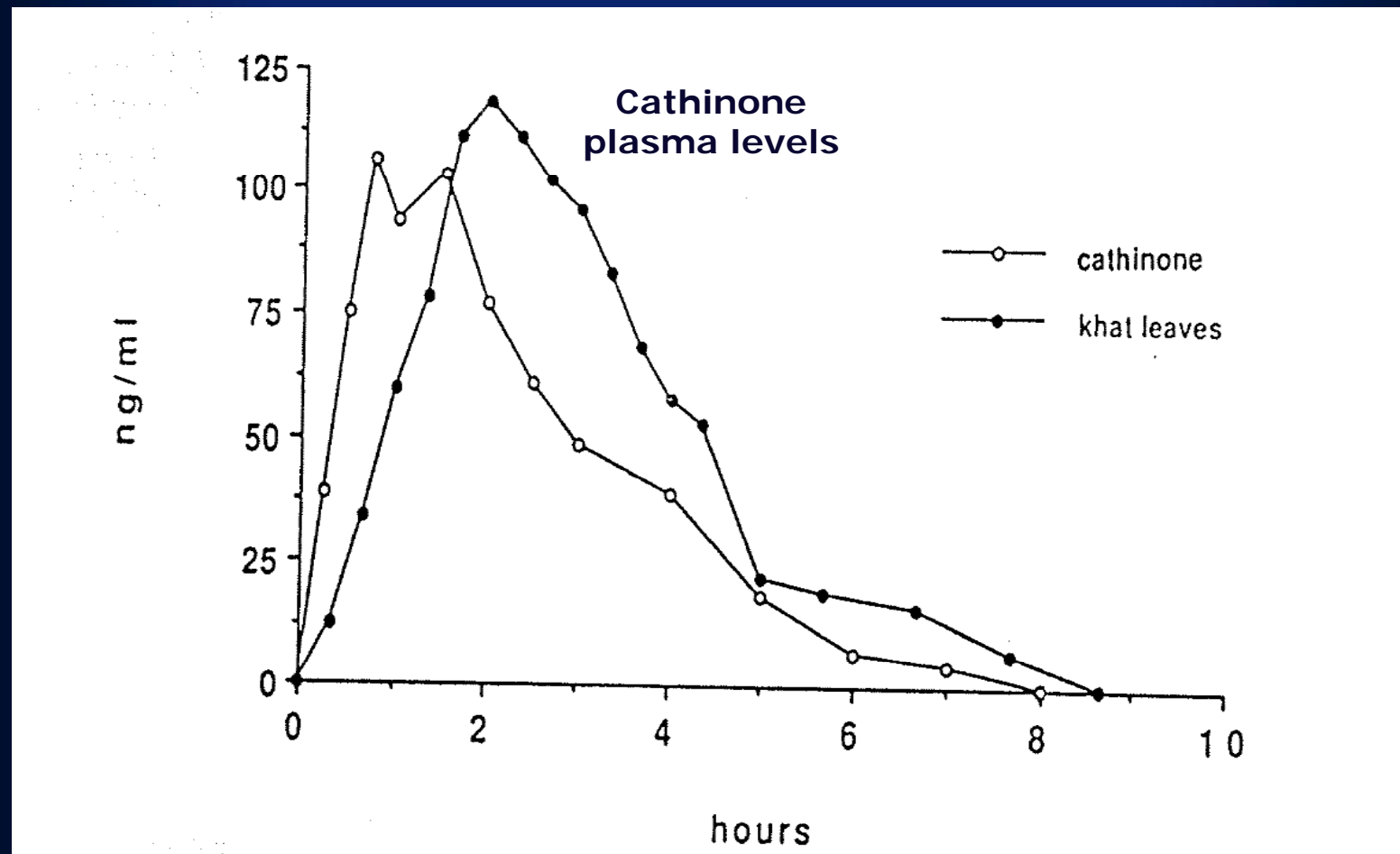
Khat = natural amphetamine (2)

Clinical evidence from RDP trials



Khat = natural amphetamine (3)

Clinical evidence from RDP trials

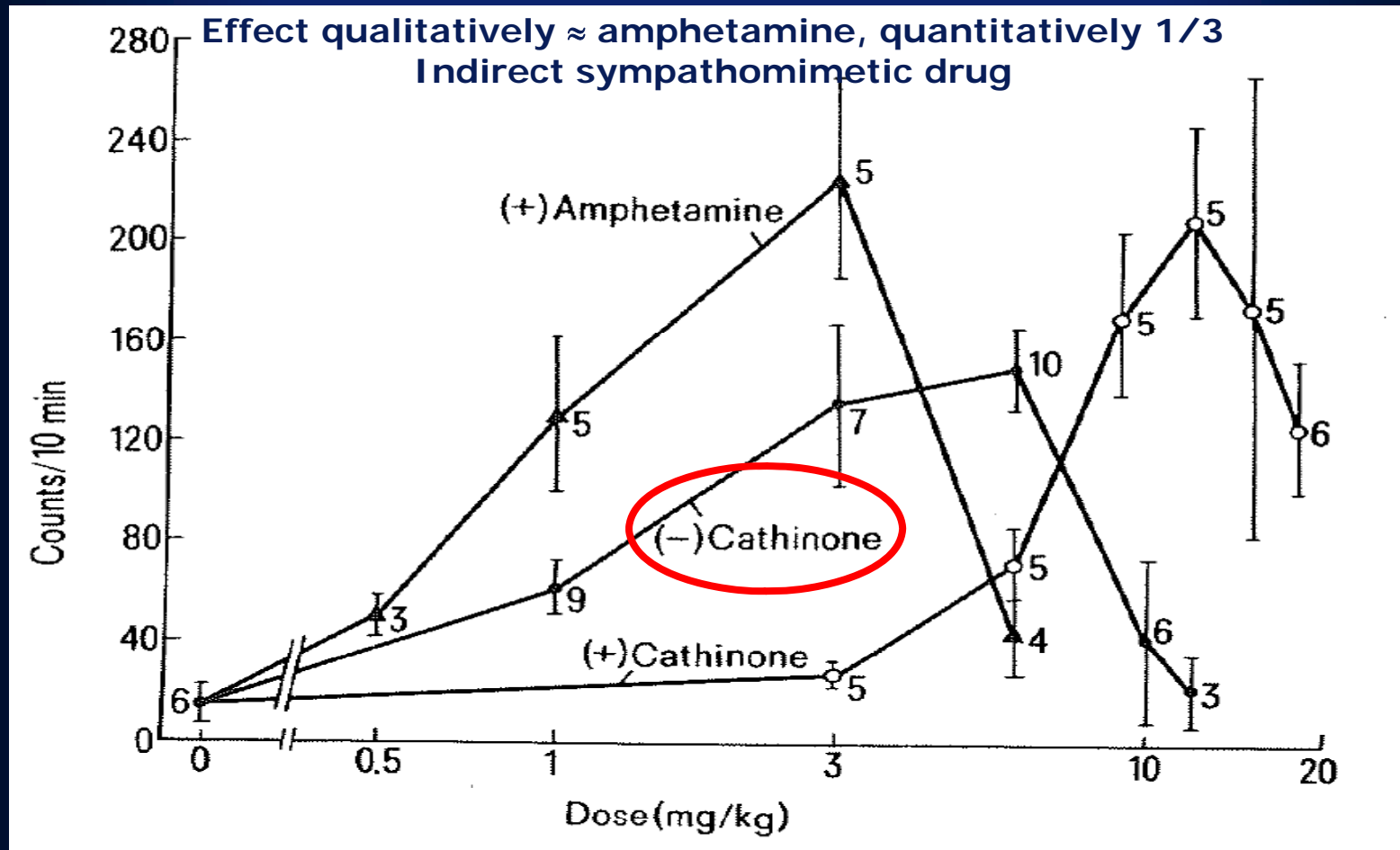


[Brenneisen et al, J Liq Chromatogr 1991;
Mathys, PhD thesis 1993]



Cathinone vs. amphetamine

Locomotor activity, rat



[Gugelmann et al, Experientia 1985]



Toxicity (1)

➔ Acute:

Reactive, mild depressions; anxiety, confusion; manic-like, schizophreniform and paranoid psychoses (rare, excessive doses, predisposition).

➔ Chronic:

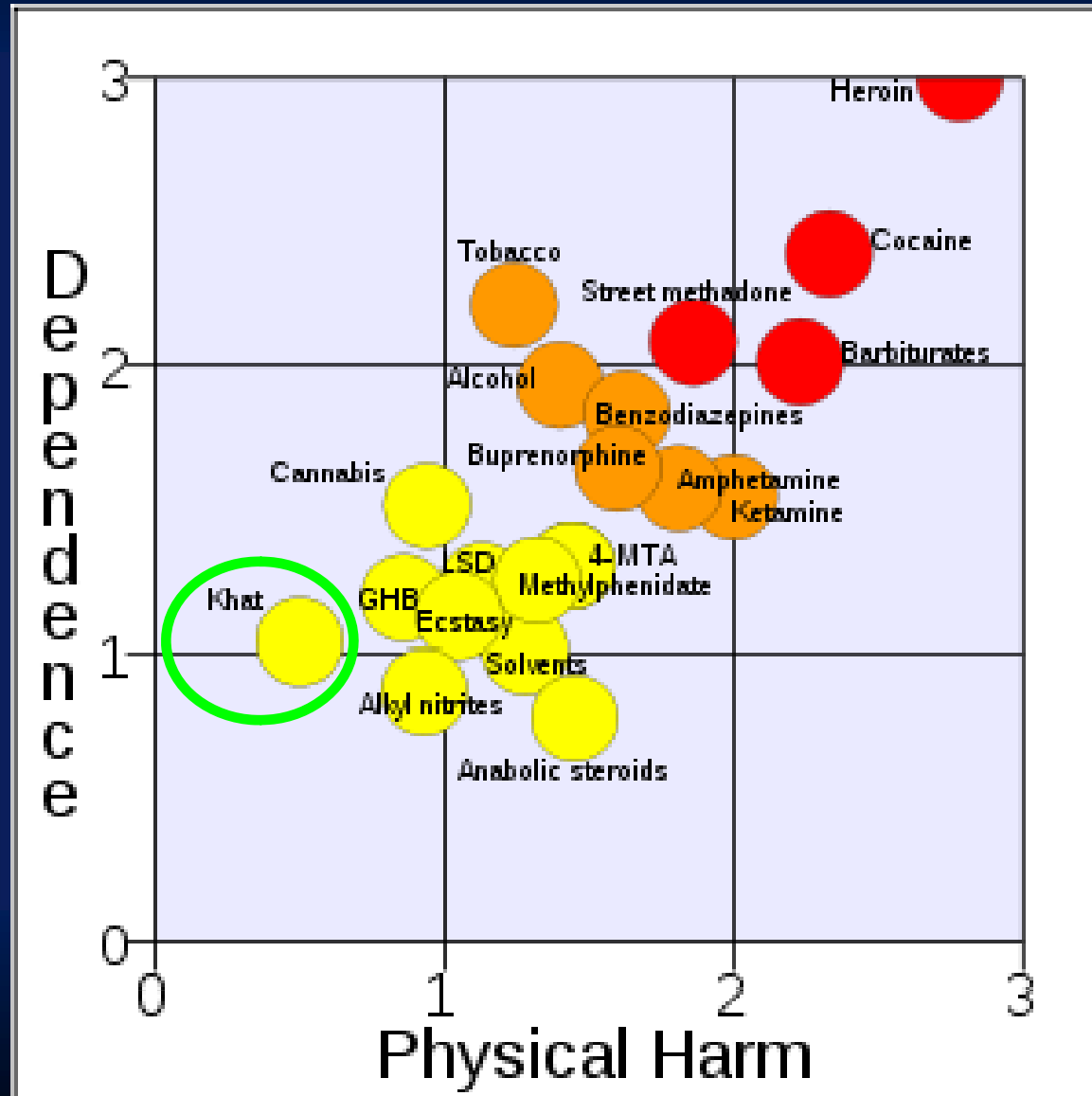
Agitation, appetite loss (malnutrition, susceptibility to infections), insomnia, day-night rhythm dysfunction, tremor, lethargy, nightmares, personality changes, emotional instability, reduced ability to concentrate, liver dysfunction, tooth damages, ulcers, sexual dysfunctions, esophageal and gastric carcinomas (?).

➔ WHO „Khat Dependence“:

Moderate but often psychic dependence, reinforcement (cathinone); peripheral, sympathomimetic tolerance to CNS effects; mild psychological withdrawal symptoms.

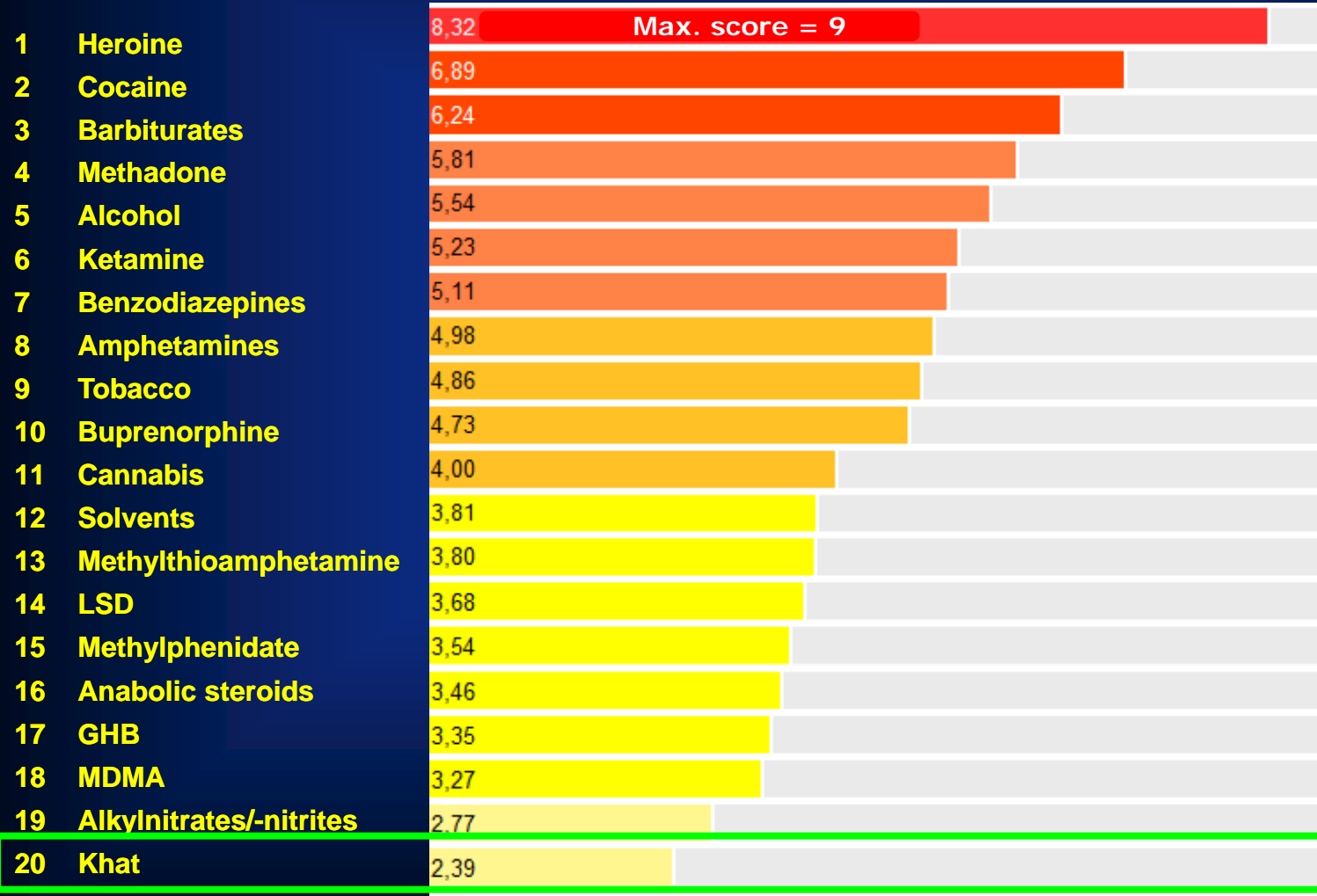


Toxicity (2)



Toxicity (3)

Physical + social harm + risk of dependence



Future research

- ➔ **Risks of co-consumption (alcohol, tobacco, Cannabis, opioids,...)?**
- ➔ **Risks of long-term Khat exposure during pregnancy and lactation?**
- ➔ **Khat inducing seizures?**
- ➔ **Cancerogenic potential of Khat chewing, e.g. buccal mucosa and GIT? Genotoxicity?**
- ➔ **Pharmacology and toxicity of other Khat constituents, e.g. flavonoids and cathaedulins?**
- ➔ **Pharmacology and toxicity of designer cathinones, e.g. 4-MMC?**
- ➔ **Ethnopharmacological and therapeutic potential of Khat and khatamines, such as antimicrobial and cytotoxic properties?**



Chewing (khat) gum ?



