

» The NPS Situation in Switzerland

Lars Ambach, Werner Bernhard, Wolfgang Weinmann

Institute of Forensic Medicine
University of Bern

5th June 2014, EWS Meeting, Lisbon

Outline

- » Legislation
- » Current situation and seizures
- » Prevention
- » Research

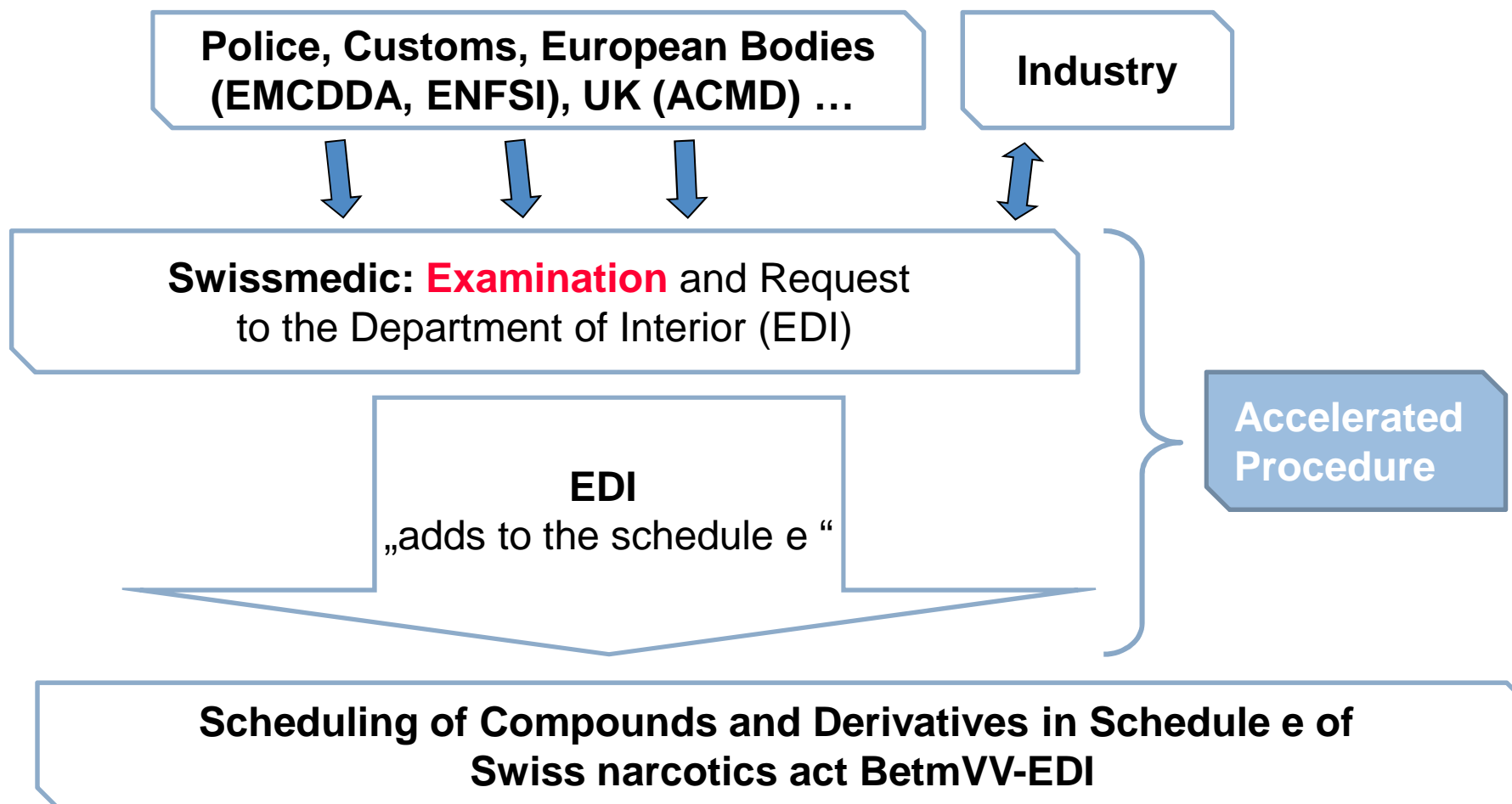
Legislation

- » Narcotics Control Act (BetmKV) defines several schedules:
 - » **Schedule a:** controlled substances
 - » **Schedule b:** controlled substances exempt from certain control measures
 - » **Schedule c:** controlled substances, allowed to be contained in preparations at reduced concentrations
 - » **Schedule d:** banned substances
 - » **Schedule e:** Raw materials and products with suspected narcotic effects (introduced July 2011)
 - » **Schedule f:** precursors
 - » **Schedule g:** auxiliary chemicals

Legislation

- » Narcotics Control Act (BetmKV) defines several schedules:
 - » **Schedule a:** controlled substances
 - » **Schedule b:** controlled substances exempt from certain control measures
 - » **Schedule c:** controlled substances, allowed to be contained in preparations at reduced concentrations
 - » **Schedule d:** banned substances
 - » **Schedule e:** Raw materials and products with suspected narcotic effects (introduced July 2011)
 - » **Schedule f:** precursors
 - » **Schedule g:** auxiliary chemicals

Legislation: Procedure for Schedule e



Legislation: Procedure for Schedule e

Police, Customs, European Bodies (EMCDDA, ENFSI), UK (ACMD) ...

Legislation: Procedure for Schedule e

Police, Customs, European Bodies (EMCDDA, ENFSI), UK (ACMD) ...



Forensic Institute (FOR) Zürich: Reference Laboratory
+ SGRM Working Group "Forensic Chemistry"

Legislation: Procedure for Schedule e

Police, Customs, European Bodies (EMCDDA, ENFSI), UK (ACMD) ...



Forensic Institute (FOR) Zürich: Reference Laboratory
+ SGRM Working Group "Forensic Chemistry"



Swissmedic: **Examination** and Request
to the Department of Interior (EDI)

Legislation: Procedure for Schedule e

Police, Customs, European Bodies (EMCDDA, ENFSI), UK (ACMD) ...



Forensic Institute (FOR) Zürich: Reference Laboratory
+ SGRM Working Group "Forensic Chemistry"

Industry



Swissmedic: **Examination** and Request
to the Department of Interior (EDI)

Legislation: Procedure for Schedule e

Police, Customs, European Bodies (EMCDDA, ENFSI), UK (ACMD) ...



Forensic Institute (FOR) Zürich: Reference Laboratory
+ SGRM Working Group "Forensic Chemistry"

Industry



Swissmedic: **Examination** and Request
to the Department of Interior (EDI)

EDI

„adds to the schedule e“

Scheduling of Compounds and Derivatives in Schedule e of
Swiss narcotics act BetmVV-EDI

Legislation: Procedure for Schedule e

Police, Customs, European Bodies (EMCDDA, ENFSI), UK (ACMD) ...



Forensic Institute (FOR) Zürich: Reference Laboratory
+ SGRM Working Group "Forensic Chemistry"

Industry



Swissmedic: **Examination** and Request
to the Department of Interior (EDI)



EDI
„adds to the schedule e“

Accelerated
Procedure

Scheduling of Compounds and Derivatives in Schedule e of
Swiss narcotics act BetmVV-EDI

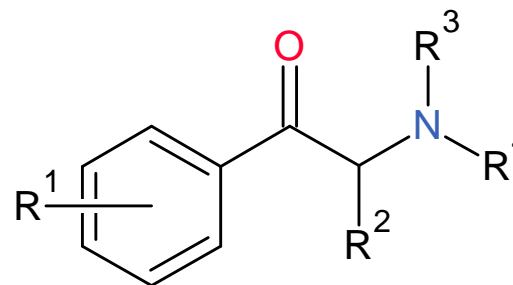
Legislation: Schedule e

- » 7 group definitions (analogues):
 - » Cathinones
 - » Naphthylpyrovalerones
 - » Naphthoylindoles and Naphthylmethylyndoles
 - » Naphthoylpyrroles
 - » Naphthylmethylyndenes
 - » Phenylacetylindoles
 - » Cyclohexylphenoles

- » 122 single substances (as of 1st Dec. 2013)

Legislation: Schedule e

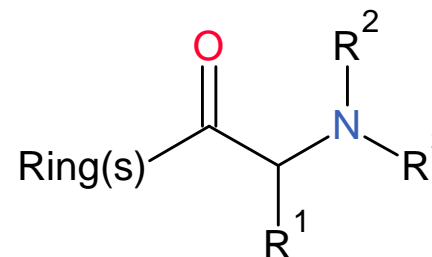
- » 7 group definitions (analogues):
 - » **Cathinones**
 - » Naphthylpyrovalerones
 - » Naphthoylindoles and Naphthylmethylindoles
 - » Naphthoylpyrroles
 - » Naphthylmethylindenes
 - » Phenylacetylindoles
 - » Cyclohexylphenoles



- » 122 single substances (as of 1st Dec. 2013)

Legislation: Schedule e

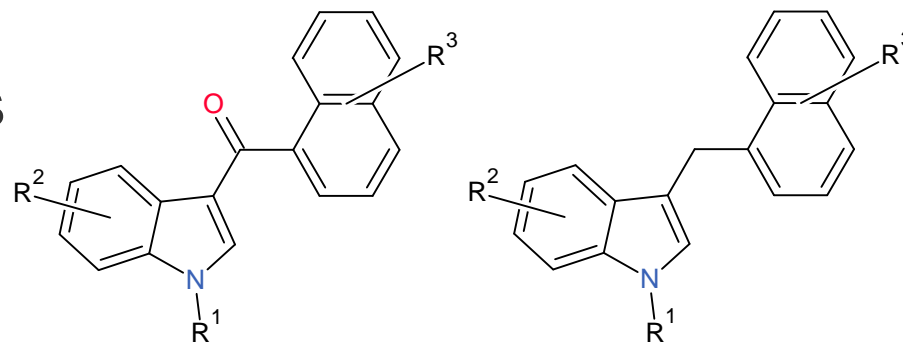
- » 7 group definitions (analogues):
 - » Cathinones
 - » **Naphthylpyrovalerones**
 - » Naphthoylindoles and Naphthylmethylinindoles
 - » Naphthoylpyrroles
 - » Naphthylmethylindenes
 - » Phenylacetylindoles
 - » Cyclohexylphenoles



- » 122 single substances (as of 1st Dec. 2013)

Legislation: Schedule e

- » 7 group definitions (analogues):
 - » Cathinones
 - » Naphthylpyrovalerones
 - » **Naphthoylindoles and Naphthylmethylindoles**
 - » Naphthoylpyrroles
 - » Naphthylmethylenes
 - » Phenylacetylindoles
 - » Cyclohexylphenoles

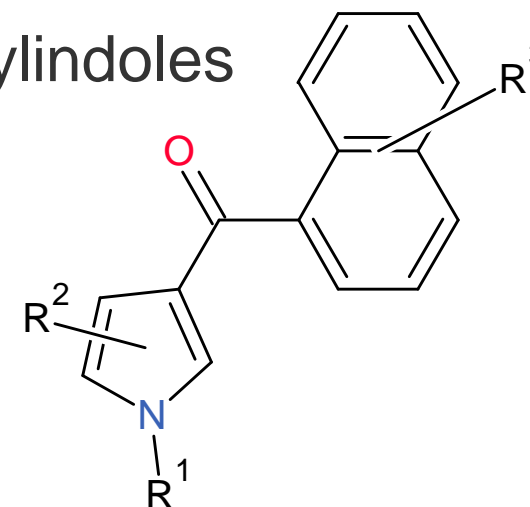


- » 122 single substances (as of 1st Dec. 2013)

Legislation: Schedule e

» 7 group definitions (analogues):

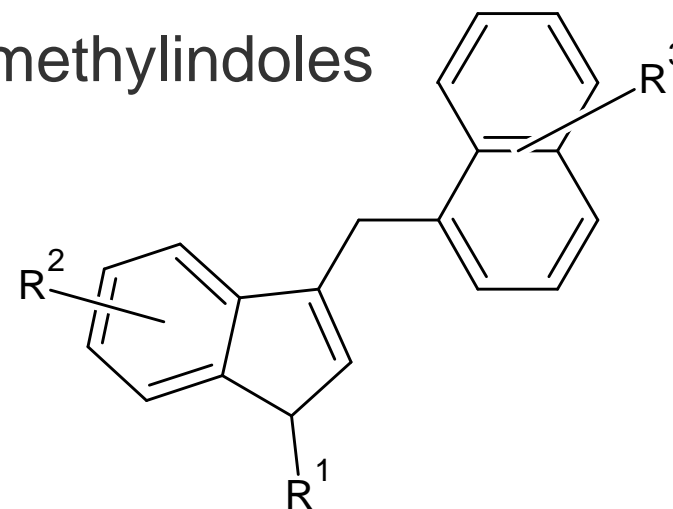
- » Cathinones
- » Naphthylpyrovalerones
- » Naphthoylindoles and Naphthylmethylinindoles
- » **Naphthoylpyrroles**
- » Naphthylmethylinindenes
- » Phenylacetylindoles
- » Cyclohexylphenoles



» 122 single substances (as of 1st Dec. 2013)

Legislation: Schedule e

- » 7 group definitions (analogues):
 - » Cathinones
 - » Naphthylpyrovalerones
 - » Naphthoylindoles and Naphthylmethylindoles
 - » Naphthoylpyrroles
 - » **Naphthylmethylindenes**
 - » Phenylacetylindoles
 - » Cyclohexylphenoles

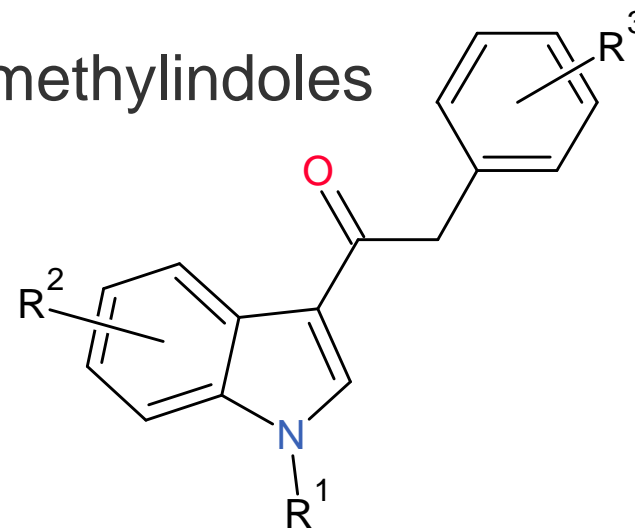


- » 122 single substances (as of 1st Dec. 2013)

Legislation: Schedule e

» 7 group definitions (analogues):

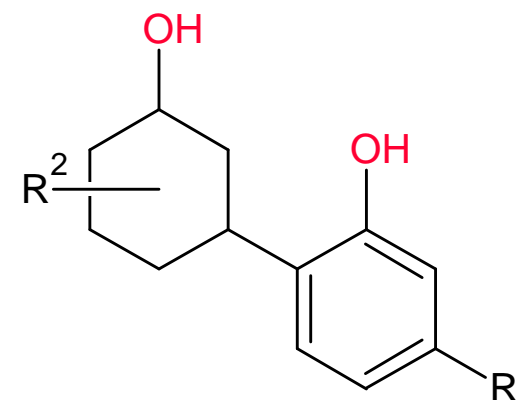
- » Cathinones
- » Naphthylpyrovalerones
- » Naphthoylindoles and Naphthylmethylindoles
- » Naphthoylpyrroles
- » Naphthylmethylindenes
- » **Phenylacetylindoles**
- » Cyclohexylphenoles



» 122 single substances (as of 1st Dec. 2013)

Legislation: Schedule e

- » 7 group definitions (analogues):
 - » Cathinones
 - » Naphthylpyrovalerones
 - » Naphthoylindoles and Naphthylmethylindoles
 - » Naphthoylpyrroles
 - » Naphthylmethylindenes
 - » Phenylacetylindoles
 - » **Cyclohexylphenoles**



- » 122 single substances (as of 1st Dec. 2013)

Legislation: Problematic cases

- » Designer benzodiazepines (e.g. etizolam, phenazepam) will not undergo accelerated procedure for Schedule e
 - » Considered for Schedule b (regular, lengthy procedure)

- » Status of Ayahuasca unclear

Current situation: Recent seizures Stimulants

- » 4-bromoamphetamine (Schedule e)
- » *N*-Ethylmorketamine (e)
- » 5-APDB (e)
- » MPA (e)
- » MDPV (d) still popular
- » Methylone (d) liquid
- » bk-2C-B (not scheduled)
- » PV9 (not scheduled)

Current situation: Recent seizures Hallucinogens and cannabinoids

- » Blotters with 3,4-CTMP or NBOMe compounds
- » 25I-NBF (not scheduled)
- » AMT (not scheduled)
- » 5-MeO-DALT (e)

- » 5F-PB-22 (e)
- » AKB-48 (e)
- » AB-FUBINACA (hashish-like) (e)
- » AM-2201 indazole (THJ-2201) and AM-2201 benzimidazole (FUBIMINA, FTHJ)

Current situation: Recent seizures

Others

- » Flubromazepam (not scheduled)
- » Diphenidine (not scheduled)
- » Methoxphenidine (not scheduled)

- » Prisons: LSA
Dealing with methylphenidate

Current situation: Product databases

- » Database of factsheets of seized products maintained by Swiss Customs and police
 - » Images of packaging
 - » Active ingredients
 - » Relevance BetmVV-EDI yes/no

Current Situation

- » Recent shipments from Spain
- » Cantonal police Bern: *“no significant NPS trade in Switzerland”*

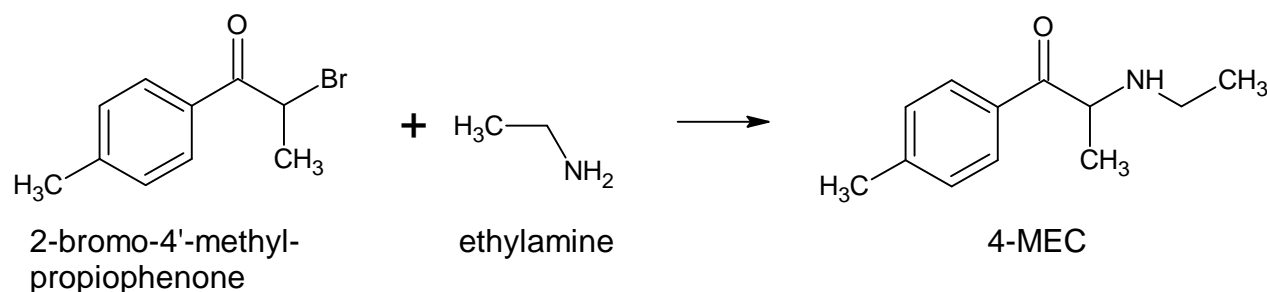
Current situation: Cathinone laboratory

- » Lab seized in canton Bern
- » Dozens of beakers, flasks and Erlenmeyers found
- » Liquids, crystals, powders
- » Raw materials, intermediates, products



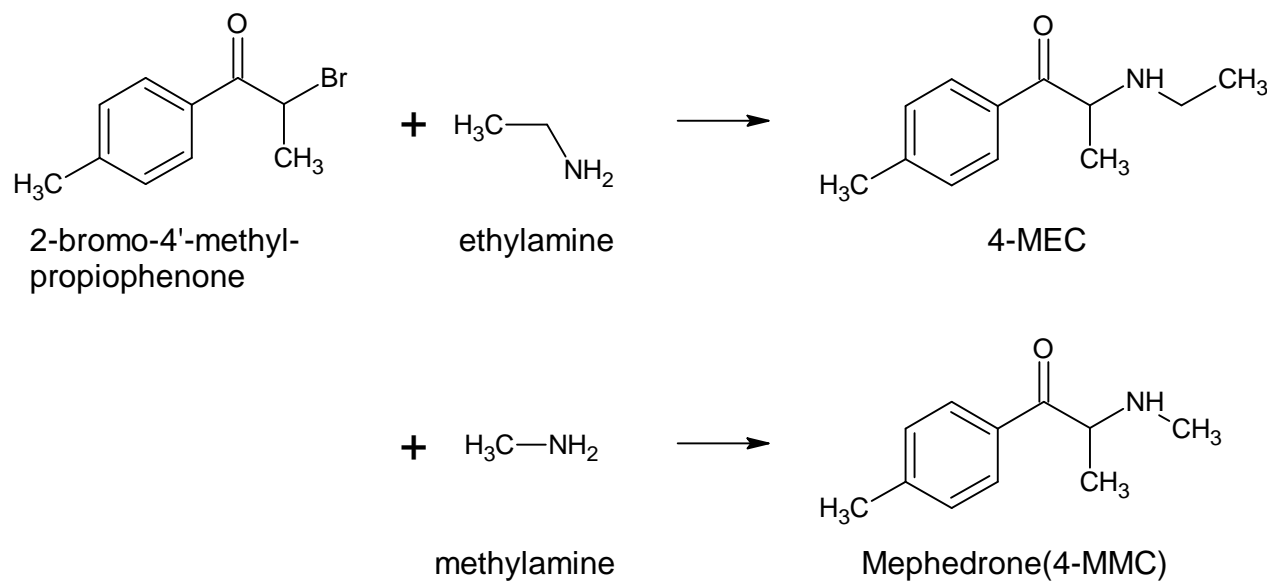
Current situation: Cathinone laboratory

- » Analysed samples contained 2-bromo-4'-methylpropiophenone and 4-MEC
- » Piracetam and Lidocaine (adulterants) found as well



Current situation: Cathinone laboratory

- » Analysed samples contained 2-bromo-4'-methylpropiophenone and 4-MEC
- » Piracetam and Lidocaine (adulterants) found as well



Prevention

- » Federal Commission on Drugs (EKDF):
 - » Body of legal, socio-medical and chemical experts to advise government and parliament on questions of drug politics

Prevention

- » Mobile drug checking by Office of the Cantonal Pharmacist Bern since 1998, cooperation with “Contact Bern” and “Streetwork Zurich”
 - » [http://www.gef.be.ch/gef/de/index/gesundheitspartyd-rogentesting.html](http://www.gef.be.ch/gef/de/index/gesundheit/gesundheitspartyd-rogentesting.html)
 - » www.contactnetz.ch (Contact Bern)
 - » www.saferparty.ch (Streetwork Zürich)
- » Notable results circulated via Newsletter



Warnung: NBOMe verkauft als LSD!

Datum: Mai 2014

Name	Regenbogen
Gewicht	16.5 mg
Breite&Höhe	7.5 mm x 7.5 mm
Farbe	Blau, Grau, Schwarz
Inhaltsstoff	25B-NBOMe*HCl, 498.4 µg 25C-NBOMe*HCl, 389.7 µg
Bemerkungen	Bitterer Geschmack im Unterschied zu LSD!
Getestet in	Zürich, Mai 2014



Risikoeinschätzung

Dieser Filz enthält kein LSD, sondern 25B-NBOMe*HCl und 25C-NBOMe*HCl! Die beiden Substanzen stehen im Zusammenhang mit einigen Todesfällen in Europa. Besonders gefährlich ist,

Vorsicht: hochdosierte XTC's

Datum: Mai 2014



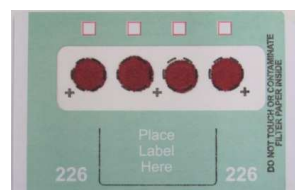
Name	Herz	No Name (Bruchrille, Minus?)
Gewicht	293.5 mg	297.4 mg
Durchmesser	8.1 mm	8.6 mm
Dicke	5.6 mm	4.2 mm
Bruchrille	Nein	Ja (evtl. auch gleich Logo)
Farbe	Orange mit Sprengel	Hellblau mit Sprengel
Inhaltsstoffe	MDMA*HCl: 128.0 mg MDMA: Qual.	MDMA*HCl: 147.7 mg
Bemerkung	-	-
Getestet in	Zürich, Mai 2014	Zürich, Mai 2014

Risikoeinschätzung

Über 120mg MDMA*HCl können zu viel sein. Nebenwirkungen wie „Kiefer mahlen“, Augen- und Nervenzucken, bis hin zu Krampfanfällen können auftreten. Bei Überdosierungen steigt die

Research: Method development

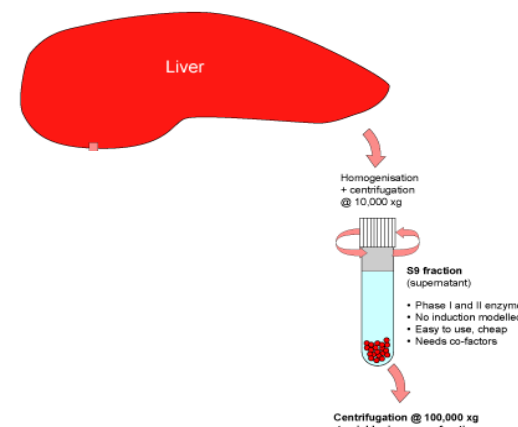
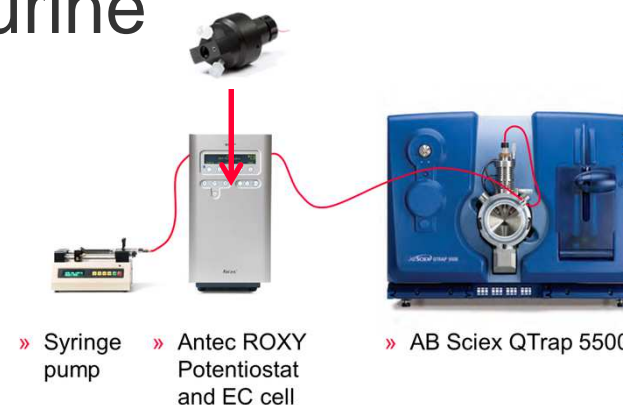
- » Associate partner in EU project
- » Development of analytical methods (cooperation with IRM Freiburg and project partners): LC-MS/MS
 - » 64 designer stimulants
 - » 31 designer cannabinoids
 - » Blood Urine Dried Blood Spots Tablets/Powders



- » Dissemination of methods to other Swiss institutes

Research: Metabolism

- » Knowledge of metabolism important for detection of substances, e.g. in urine
- » Simulated (*in vitro*) metabolism
 - » Electrochemistry
 - » Human liver microsomes
- » Currently under investigation:
 - » 25D-NBOMe
 - » AB-FUBINACA
 - » EAM-2201



Research: Mass spectral library

www.legal-highs.ch

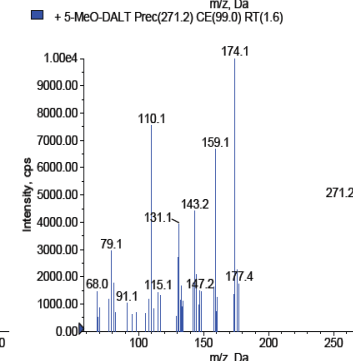
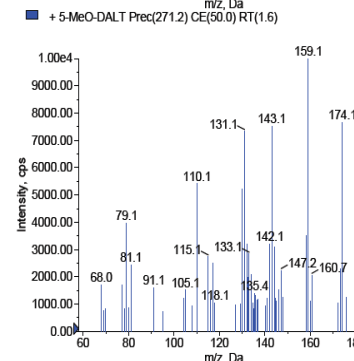
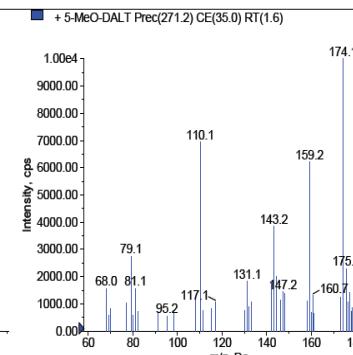
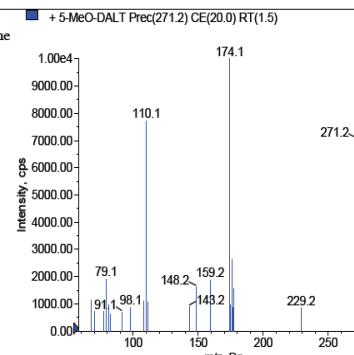
- » Mass spectra for 129 substances so far
- » Update for 14 new substances currently in the works

- » Available online as pdf and as plugin for *AB Sciex Analyst* software upon request

Compound Name: 5-MeO-DALT
 Synonyms: N,N-diallyl-5-methoxytryptamine
 Formula: C17H22N2O
 CAS Number: 928822-98-4
 Molecular weight(Da): 270.1732
 Compound Class: Tryptamines
 Compound ID:
 User Value: 0.0000
 Keyword:
 Internal Standard: No
 Comment1: 270.173213

Instrument Model: 3200 Q TRAP
 Ion Source: Turbo Spray
 Polarity: Positive
 Scan Type: EPI
 1st Precursor m/z: 271.2000
 Collision Energy1(V): 20.0000
 Charge State1: 1
 CAD Gas Type:
 CAD Gas Value: Level 4
 Retention Time(min): 1.50
 Resolution: unit
 Comment2:
 Comment3:

© 2012 University of Bern
 Lars Ambach, Wolfgang Weinmann
 www.irm.unibe.ch



Conclusions

- » Extensive NPS legislation
- » Seizures at border level comparable to EU countries
- » But prevalence in forensic toxicology/traffic cases and street-level drug checking is low
- » IRM Bern is actively engaged in NPS research

Acknowledgements

- » Financial support:
 - » Federal Office of Public Health
(BAG projects 10.008101 and 12.009410)
 - » Swiss National Science Foundation
(Marie Heim Vögtlin project PMPDP3_134081/1)

- » Associate partner in EU projects:
 - » “SPICE and Synthetic Cannabinoids”
(JUST/2009/DPIP/AG/0948)
 - » “SPICE II plus” (JUST/2011/DPIP/AG/3597)

