I-SEE
European Project
on New Psychoactive Substance

Co-funded by the Prevention of and Fight against Crime Programme of the European Union
JUST/2013/ISEC/DRUGS/AG/6426

STUDY VISIT TO ITALY

December 14th – 18th 2015

Monday, 14th December – Florence

Forensic Toxicology Unit, Department of Health Science, University of Florence

Prof. Elisabetta Bertol

The Study Visit began with the welcome to all the participants by Prof. Mari, Full Professor of Forensic Toxicology and founder of the Scientific Association of "Italian Forensic Toxicologists Group" (GTFI).

At 10.15 am, Prof. Bertol presented the organization and the activities of the Forensic Toxicology Unit, University of Florence. During the presentation, the main aims of the Forensic Toxicology were discussed, underlining the legal implications for the examinee's personal freedom of analytical results that need to be interpreted by a team of professionals. Driving license issues is one the main analytical activity of this Unit, with over 1500 analyses per year for 6 Local Medical Commission in Tuscan Region. All of this is due to the high versatility and efficiency of the adopted analytical protocols that allows to check a broad number of parent drugs and their metabolites (cocaine, opiates, methadone, cannabinoids, ketamine, amphetamine, buprenorphine, benzodiazepines, markers of alcohol consumption and NPS). Other activities are the workplace drug testing, analysis to assess DFSA (Drug-Facilitated Sexual Assault) and analysis for Local Courts (on seized material – over 2500 analyses in 2015 – and postmortem). This Unit is also strongly involved in research projects, mainly focused on NPS, such as the I-SEE Project. Collaboration with many national and international institutions were presented, together with the great scientific contribution on indexed international journals. The Unit was involved in the organization of 53rd Annual Meeting of The International Association of Forensic Toxicologists (TIAFT), recently held in Florence. The Forensic Toxicology Unit and the Department of Health Science are involved in the Unit of Research and Innovation in Forensic Toxicology and Neurosciences of Addiction (U.R.I.To.N.). This Innovative Research Unit is entirely focused on all aspects of drugs of abuse (in particular NPS) by means of a multidisciplinary approach that involves professionals from various scientific fields, such as Forensic and Clinical Toxicology, Neurosiences, Pharmacology, Chemistry and Medicine. The great efforts of the Forensic Toxicology Unit in the

detection of NPS led to the validation of a screening method for the detection of 52 substances (47 NPS and 5 amphetamine-like) in blood, urine and oral fluid through a LC-MS/MS analysis. This procedure allows a easy, rapid and sensitive detection of these molecules providing an effective tool to improve the detection of NPS.

At 10.45 am, Dr Vaiano presented the cases related to NPS in biological and non-biological samples, detected in the Forensic Toxicology Unit. During the presentation he also explained the analytical approach of the Unit that aims to a broad spectrum detection and also to the improvement of the analytical procedures. The reported cases of *in vivo* detection regard the compounds: JWH-073, MDPV, AM-694 and mephedrone. The case of MDPV was particular as the subject was hospitalized twice in 13 days for intoxication by this compound and he was also interviewed. During the interview, the subject underlined that he was highly addicted to MDPV, even reaching 150 mg of injected dose. Moreover, MDPV metabolites were also detected by means of a LC-HRMS instrumentation. The Forensic Toxicology Unit was the first to detect AM-694 (and 2 metabolites) as parent compound in urine, representing the first analytical evidence about the spread of this substance. Mephedrone was detected in a blood sample by means of a new screening procedure (previously described by Prof. Bertol) for simultaneous detection of 52 compounds by a single LC-MS/MS analysis. This procedure allowed a rapid identification and quantification of methamphetamine and mephedrone in the blood specimen. Furthermore, 5 cases of NPS detection in seized materials were also presented. The substances were: 3-MMC, 4-FA, penthedrone, penthedrone + 3-MMC and methoxethamine. These cases were really interesting since the compounds were always highly pure.

Presentations were followed by a rich debate where all participants discussed about their own knowledge activities and experiences. Moreover, NPS issues were widely discussed together to the importance of drafting an effective algorithm for selection of intoxication cases that should be checked for NPS consumption.

At 12.00 pm, the participants visited laboratory of Forensic Toxicology Unit, where Dr Di Milia and Dr Vaiano described the instrumentations and the analytical activities of the lab. In particular, the analytical protocol for hair analysis in driving license issues (from sample collection to data interpretation) was explained, also underlining the importance of the chain of custody and of the informed consent in forensic toxicology.

At 2.30 pm, Dr Vaiano and Dr Palumbo demonstrated the new screening method for simultaneous detection of 52 compounds by means of a single LC-MS/MS analysis.

At 3.30 pm, Dr Rimondo presented the NPS database structure. She described all the features of this important database, that is very useful for an effective exchange of information on NPS.

Department of Health Science
Forensic Toxicology Unit,
University of Florence

ORGANIZATION AND ACTIVITIES OF FORENSIC TOXICOLOGY UNIT UNIVERSITY OF FLORENCE

Prof. Elisabetta Bertol

Full Professor of Forensic Toxicology
Director of Forensic Toxicology Unit
University or Florence

Forensic Toxicology Unit

University of Florence

In this Unit a team of professionals deal with all issues concerning Forensic Toxicology, making this Unit a national excellence in this wide scientific field.

We do not merely perform analysis, **we perform choices** about the most suitable **matrix**, the best **procedure** and **instrumentation** to apply in order to satisfy **what we are asked for by law**.

Moreover, we do not provide results alone,
but all results need to be interpreted.

Since our application fields are very wide, broad **scientific** and **legal knowledge is essential** together with a continuous updating of the analytical procedures and instrumentation.

Since each result in a forensic context may have **legal implications** for the examinee's personal **freedom**, our analysis must be based on a specific approach, which is different from clinical ones.

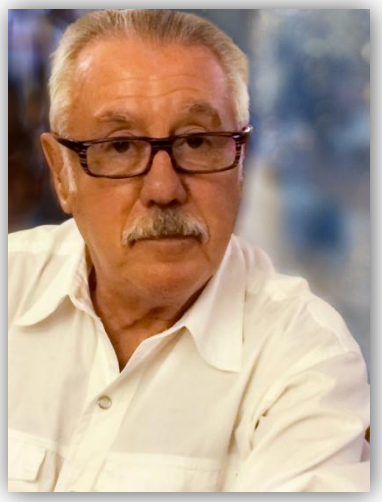
- Chain of custody
- Informed consent
- Choice of matrices
- Aim of the analysis
- Analytical strategy (screening + **mandatory confirmation**)
- Time of response

Forensic Toxicology Unit

University of Florence

Scientific Association of "Gruppo Tossicologi Forensi Italiani"

This is the meeting room where the GTFI Association was founded in 1974.



Founder of GTFI
Twice President:

1984-1986
2000-2004

Past President:

2007-2015

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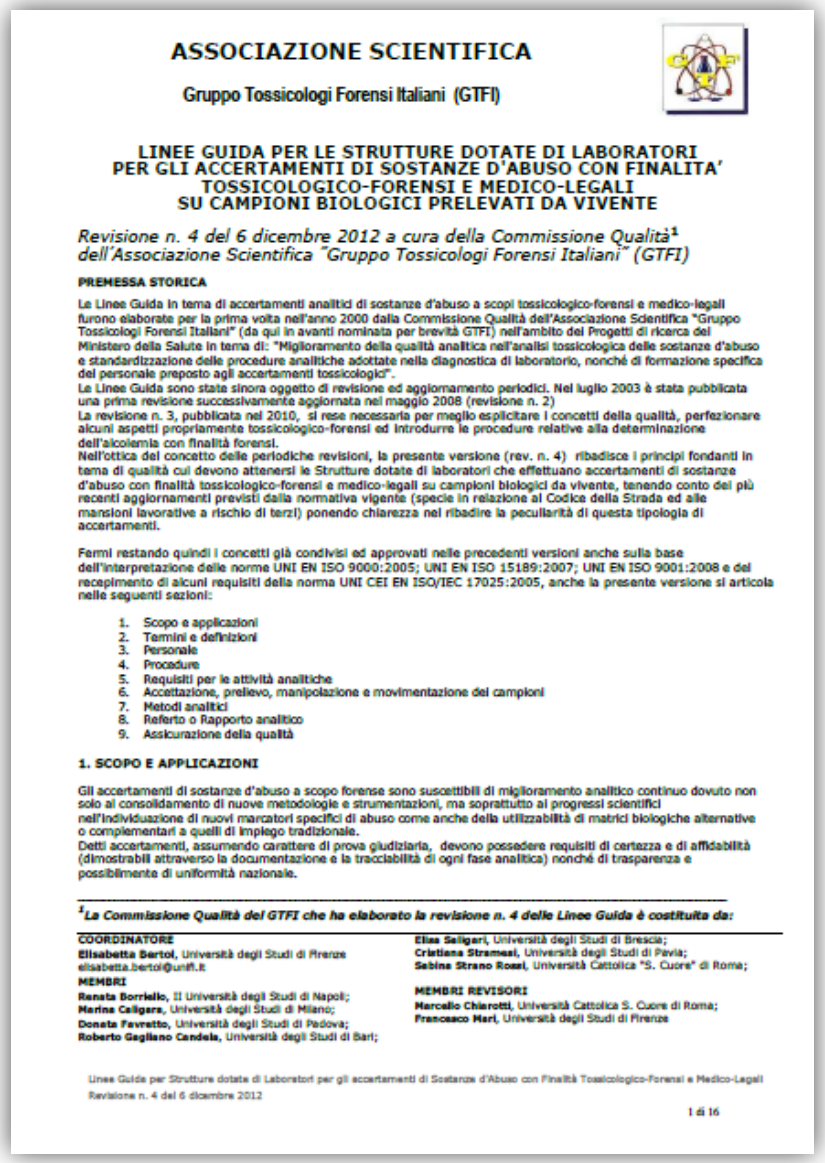
Forensic Toxicology Unit

University of Florence

All our analyses are performed according to the Guidelines of **Scientific Association of Italian Forensic Toxicologists (GTFI)**



ASSOCIAZIONE SCIENTIFICA

Gruppo Tossicologi Forensi Italiani (GTFI)

LINEE GUIDA PER LE STRUTTURE DOTATE DI LABORATORI PER GLI ACCERTAMENTI DI SOSTANZE D'ABUSO CON FINALITA' TOSSICOLOGICO-FORENSI E MEDICO-LEGALI SU CAMPIONI BIOLOGICI PRELEVATI DA VIVENTE

Revisione n. 4 del 6 dicembre 2012 a cura della Commissione Qualità[1] dell'Associazione Scientifica "Gruppo Tossicologi Forensi Italiani" (GTFI)

PREMESSA STORICA

Le Linee Guida in tema di accertamenti analitici di sostanze d'abuso a scopi tossicologico-forensi e medico-legali furono elaborate per la prima volta nell'anno 2000 dalla Commissione Qualità dell'Associazione Scientifica "Gruppo Tossicologi Forensi Italiani" (da qui in avanti nominata per brevità GTFI) nell'ambito dei Progetti di ricerca del Ministero della Salute in tema di: "Miglioramento della qualità analitica nell'analisi tossicologica delle sostanze d'abuso e standardizzazione delle procedure analitiche adottate nella diagnostica di laboratorio, nonché di formazione specifica del personale preposto agli accertamenti tossicologici".
Le Linee Guida sono state sinora oggetto di revisione ed aggiornamento periodici. Nel luglio 2003 è stata pubblicata una prima revisione successivamente aggiornata nel maggio 2008 (revisione n. 2)
La revisione n. 3, pubblicata nel 2010, si rese necessaria per meglio esplicitare i concetti della qualità, perfezionare alcuni aspetti propriamente tossicologico-forensi ed introdurre le procedure relative alla determinazione dell'alcolemia con finalità forensi.
Nell'ottica del concetto delle periodiche revisioni, la presente versione (rev. n. 4) ribadisce i principi fondanti in tema di qualità cui devono attenersi le Strutture dotate di laboratori che effettuano accertamenti di sostanze d'abuso con finalità tossicologico-forensi e medico-legali su campioni biologici da vivente, tenendo conto dei più recenti aggiornamenti previsti dalla normativa vigente (specie in relazione al Codice della Strada ed alle mansioni lavorative a rischio di terzi) ponendo chiarezza nel ribadire la peculiarità di questa tipologia di accertamenti.

Fermi restando quindi i concetti già condivisi ed approvati nelle precedenti versioni anche sulla base dell'interpretazione delle norme UNI EN ISO 9000:2005; UNI EN ISO 15189:2007; UNI EN ISO 9001:2008 e del recepimento di alcuni requisiti della norma UNI CEI EN ISO/IEC 17025:2005, anche la presente versione si articola nelle seguenti sezioni:

1. Scopo e applicazioni
2. Termini e definizioni
3. Personale
4. Procedure
5. Requisiti per le attività analitiche
6. Accettazione, prelievo, manipolazione e movimentazione dei campioni
7. Metodi analitici
8. Referto o Rapporto analitico
9. Assicurazione della qualità

1. SCOPO E APPLICAZIONI

Gli accertamenti di sostanze d'abuso a scopo forense sono suscettibili di miglioramento analitico continuo dovuto non solo al consolidamento di nuove metodologie e strumentazioni, ma soprattutto ai progressi scientifici nell'individuazione di nuovi marcatori specifici di abuso come anche della utilizzabilità di matrici biologiche alternative o complementari a quelli di impiego tradizionale.
Detti accertamenti, assumendo carattere di prova giudiziaria, devono possedere requisiti di certezza e di affidabilità (dimostrabili attraverso la documentazione e la tracciabilità di ogni fase analitica) nonché di trasparenza e possibilmente di uniformità nazionale.

[1] ***La Commissione Qualità del GTFI che ha elaborato la revisione n. 4 delle Linee Guida è costituita da:***

COORDINATORE
Elisabetta Bertol, Università degli Studi di Firenze
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MEMBRI
Renata Borriello, II Università degli Studi di Napoli;
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Cristiana Stramesi, Università degli Studi di Pavia;
Sabina Strano Rossi, Università Cattolica "S. Cuore" di Roma;
MEMBRI REVISORI
Marcello Chiarotti, Università Cattolica S. Cuore di Roma;
Francesco Mari, Università degli Studi di Firenze

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Forensic Toxicology Unit

University of Florence

Currently, in our Laboratory
we have the following instrumentation:

- **6** GC-FID;
- **2** HSGC-FID;
- **3** GC-MS;
- **1** LC-MS/MS;
- **2** EMIT immunoassay
- **1** UV-VIS Spectroscope

Main activities:

- **Driving licence issues;**
- **Workplace drug testing;**
- **Reference Unit for DFSA cases;**
- **Reference Unit for Local Court;**
- **Research;**
- **Reference Unit for the Proficiency Test of the Tuscan Region;**
- **Analysis for private purposes;**
- **Support activities for other Structures within the AOU Careggi;**
- **Training.**

Driving Licence issues
(issue, renewal and driving under influence of drugs):

Our activity in this field began in **1997**, with the agreement between AOU Careggi and Local Medical Commission of Florence.

Now, we have agreements with **6 Commissions** in Tuscany.

Each year **1500 analyses** are performed on urine and hair samples (head, chest, axilary, pubic).

Since each Commission has its own protocol, our analyses are highly **versatile** in order to meet various requests.

The panel of analyzed compounds is very broad and consists of **parent drugs** and **their metabolites**:

- Cocaine and its metabolites (benzoylecgonine, ethylbenzoylecgonine)
- Opiates (morphine, codeine, 6-monoacethylmorphine)
- Methadone and its metabolite (EDDP)
- Cannabinoids (Δ^9-THC and its metabolite Δ^9-THC –COOH)
- Ketamine and its metabolite (Nor-ketamine)
- Amphetamines (amphetamine, metamphetamine, MDMA, MDA, MDEA)
- Buprenorphine and its metabolite (Nor-buprenorphine)
- Benzodiazepines
- Markers of alcoholic consumption (FAEE and EtG)
- NPS (about 50 in an unique screening)

Forensic Toxicology Unit

University of Florence

Urine sample

↓

Immunoscreening
(EMIT)

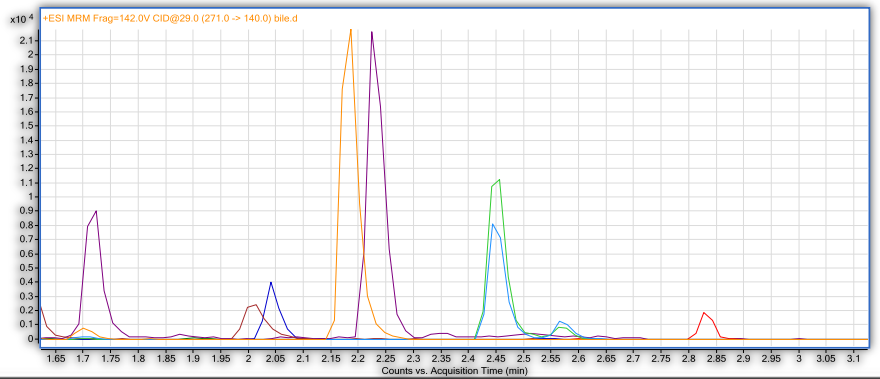
↓

Confirmation by
GC-MS and LC-MS/MS

Hair sample

↓

Analysis by
GC-MS and LC-MS/MS



Drug Testing for "hazardous workplaces"

According to the Agreement between the State and Regions (2007):
"those which involve a risk to one's personal safety, wellbeing and health as well as that of others, which also includes only sporadic consumption of drugs":

- Use of toxic gases
- Manufacture and use of explosives
- Operation and management of nuclear plants
- Specified activities connected with railway, nautical, aeronautical and road transportaton (included public transport)

In addition, health checks in the field are regulated by articles of our Law on narcotic drugs n. 309/90 and by the decree n.81/2008 on health and safety protection in work places.

Both **drug addiction** and **occasional consumption** must be considered **incompatible** with the performance of "hazardous jobs".

The test is compulsory and is divided into two macrophases:

I level:

- Post-hiring assessment
- by workplace physician
- on urine matrix

II level:

- In the case of a positive result, a second and diagnostic in-depth verfiication:
- by Healthcare Structures
- on urine and hair matrices

Each level consists of a **screening phase** and a **mandatory confirmatory analysis** by means of chromatography – mass spectrometry techniques.

The Tuscan Region established that all II level assessments may be performed only in the Forensic Toxicology Units of Florence, Pisa and Siena.

In addition, our Unit also performs I level analysis for some private and public companies.

This year we have performed **400 analyses.**

Analysis to assess Drug-Facilitated Sexual Assault (DFSA):

In Italy, the use of any psychotropic substance in order to facilitate a sexual assault is considered as an **aggravating circumstance** for this crime (Art. 609-ter C.P.).

The main “rape drugs” are:

- GHB
- Benzodiazepines
- Alcohol
- Ketamine
- Scopolimine
- MDMA and others
- some NPS

In this cases the **time of sample collection** is a key factor for an effective interpretation of the results.

Forensic Toxicology Unit

University of Florence

Reference Unit for Local Courts

We are the **center of reference** for the analysis of seized material by Law Enforcement according to the Italian Law on Drugs of Abuse (DPR 309/90, art .75, concerning the "personal use of drugs").

Each sample is analyzed in order to characterize its **qualitative** and **quantitative composition** (active compound, excipients, adulterant, etc.) also in order to compare different large consignment seized

Six GC-FID instruments are completely dedicated to this analysis; in addition, the samples are also analyzed by means of **GC-MS** and **LC-MS/MS**.

During 2015 we have analyzed about **2500 seized samples**.

We collaborate with the Judiciary Authorities for analytical investigation on every kind of biological specimen, in vivo and even in **postmortem,** in case of:

- **Suspect of poisoning**
- **Suspected overdose death (DRD)**
- **Judicial separation and divorce, for the custody of minor children**
- **all kind of Forensic Toxicological advice**
- **consultantsin particular cases of doping suspect (eg in case of death of an athlete**
- **….**

Research activities

However, scientific research is the primary task of our Forensic Toxicology Unit, as University Structure

We have been involved in many important research projects, such as:

- "**Sewage epidemiology**" in waste water plants to analyze drugs of abuse in the population of Florence, before collection in the Arno river

-"**Alcohol, energy drink and tobacco in adolescents**"

- "**Prison, alcohol and drugs of abuse: estimation of the phenomenon by means of scientific evidence**"

Reasearch projects in progress:

-Chemical-analytical toxicological studies on seized material with forensic purpose as provided by current legislation, but also with the aim of found NPS and to control their spread

- Studies on social, ethical and epidemiological implications of personal consumption of drugs of abuse

- Studies on detection of γ-hydroxybutyric acid (GHB) in hair and discrimination between endogenous and exogenous GHB concentrations

-*In vivo* detection of New Psychoactive Substances and their metabolites in "real cases"

We have recently applied for two important European Research project calls, one of which regarding the spread of NPS on Internet and the other one about sexual violence against women perpetrated with DFSA.

In the last 5 years:

- We have published **about 40 articles** in International Journals indexed on Scopus and WOS

- Our articles have been **cited about 400 times**

- We have contributed with **oral presentations** and **posters** in several national and international meetings

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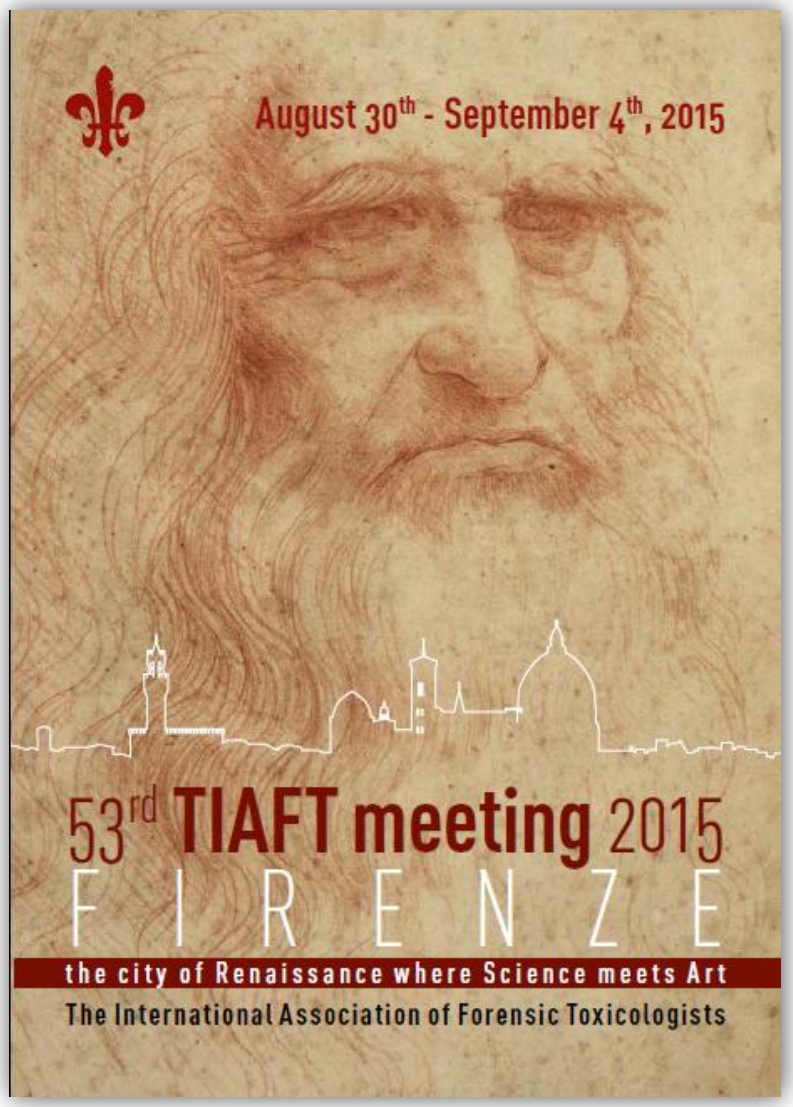
Forensic Toxicology Unit

University of Florence

During the 2011 Annual Meeting in San Francisco we were awarded the organization of the

53rd Annual Meeting of The International Association of Forensic Toxicologists (TIAFT)

recently held in Florence
August 30th- September 4th, 2015



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Forensic Toxicology Unit

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We cooperate also with:

European Monitoring Centre for Drugs and Drug Addiction

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Forensic Toxicology Unit

University of Florence

UNODC

United Nations Office on Drugs and Crime

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Forensic Toxicology Unit

University of Florence

Dipartimento Politiche Antidroga

Forensic Toxicology Unit

University of Florence

and now we are proud to carry out with you this Project

I-SEE

European Project
on New Psychoactive Substance

Co-funded by the Prevention of and Fight against Crime Programme of the European Union

JUST/2013/ISEC/DRUGS/AG/6426

To strengthen information exchange between
Italy and South East Europe
neighbouring countries on
New Psychoactive Substances

Coordinator

UNIVERSITÀ DEGLI STUDI FIRENZE

Beneficiary Partners

NIJZ National Institute of Public Health

Ministrstvo za notranje zadeve Policija
National Forensic Laboratory and Criminal Police Directorate

DrogArt

University of Split School of Medicine
Republic of Croatia

Main objectives of the Project:

-Strengthen information exchange between Italy and SEE neighbouring countries on NPS

- Support the development and consolidation of national EWS networks

- Create a joint mechanism for exchange among the EWSs to allow competent authorities and professionals to know and prevent the NPS potentially entering national boundaries and control their presence among users

- Increase exchange with Law Enforcement to ease and strengthen activities to identify and intercept the NPS supply

We directly cooperate with the **NEWS** (National Early Warning System) program, created by **DPA**.

Our principal and most significant alerts:

- **Levamisole** as cocaine adulterant

- **2-Methoxy-N-methylamphetamine**, in seized material

- **JWH-073**, *in vivo*

- **MDPV**, *in vivo*

- **AM-694**, *in vivo*

Dipartimento Politiche Antidroga

N.E.W.S.
NATIONAL EARLY WARNING SYSTEM

In particular, our activity on identification and characterization of NPS in biological and non-biological samples led to the development of several analytical methods.

Designer Drugs e NSP: un vecchio e nuovo problema. Descrizione di due casi clinici

Elisabetta Bertol[1], Fabio Vaiano[1], Maria Grazia Di Milia[1], Diego Palumbo[1], Francesco Mari[1]

1 Struttura di Tossicologia Forense AOUC – Dip. di Scienze della Salute – … Firenze

Le nuove sostanze psicoattive (NSP), venute alla ribalta in q… le ormai a circa trenta anni addietro. Infatti è verso la meta… varie molecole chiamate "Designer Drugs", cioè progettate a … e diffuse senza controllo sul mercato della droga.
Nel presente contributo vengono presentati due più modern… caso riguarda una intossicazione da un cosiddetto "cannabino… lia) e l'altro una forma acuta di intossicazione dovuta ad assu… benzodiazepine.
Sottolineando che si tratta di casi "in vivo" e non di sempli… vengono riferite le modalità di indagine usate per la determin… inoltre riportata la sintomatologia presentata dai due soggett…

Forensic Science International xxx (2014) xxx–xxx

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journal homepage: www.elsevier.com/locate/forsciint

A mixed MDPV and benzodiazepine intoxication in a chronic drug abuser: Determination of MDPV metabolites by LC–HRMS and discussion of the case☆

Elisabetta Bertol[a], Francesco Mari[a], Rafael Boscolo Berto[b], Guido Mannaioni[c], Fabio Vaiano[c], Donata Favretto[b,*]

[a] Department of Health Sciences, Forensic Toxicology Unit, University…
[b] Forensic Toxicology and Antidoping, University Hospital of Padova,
[c] Department of Health Sciences, University of Firenze, Italy

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ABSTR…

We report… prompting… apartment…

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Contents lists available at ScienceDirect

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journal homepage: www.elsevier.com/locate/forsciint

In vivo detection of the new psychoactive substance AM-694 and its metabolites

Elisabetta Bertol*, Fabio Vaiano, Maria Grazia Di Milia, Francesco Mari

Department of Health Science, Forensic Toxicology Division, University of Florence, Florence, Italy

ARTICLE INFO

Article history:
Available online 17 July 2015

ABSTRACT

AM-694 or 1-(5-fluoropentyl)-3-(2-iodobenzoyl)indole is a synthetic cannabinoid that acts as a selective and a powerful agonist for CB1 receptor, inducing cannabinoid-like effects (euphoria, sedation, hallucinations and anxiety). Its spread, like for other synthetic cannabinoids, has increased in recent

Recently, we validated a new screening method for the detection of **52** substances (**47 NPS** and **5 amphetamine-like**) in **blood**, **urine** and **oral fluid** by means of a **LC-MS/MS**

- 47 NPS
  - 18 Synthetic cathinones
  - 24 Synthetic Cannabinoids
  - MDAI
  - 4-FA
  - Ketamine, Nor-ketamine, methoxethamine
- 5 amphetamine-like
  - Amphetamine
  - methamphetamine
  - MDMA
  - MDEA
  - MDA

UNIVERSITÀ DEGLI STUDI FIRENZE

Forensic Toxicology Unit

University of Florence

22nd July 2015

U.R.I.To.N.

Unit of Research and Innovation in Forensic Toxicology and Neuroscience of Addiction

was founded.

It is a new, specialized and innovative inter-departmental University Unit,

In this Unit, three research groups are involved from three different University Departments:

- Health Sciences (DSS);
- Neurosciences, Psychology, Drug Research and Child Health (NEUROFARBA);
- Chemistry "Ugo Schiff".

Director of the Advisory and Steering Group: Giovanni Serpelloni
Scientific Coordinator: Elisabetta Bertol

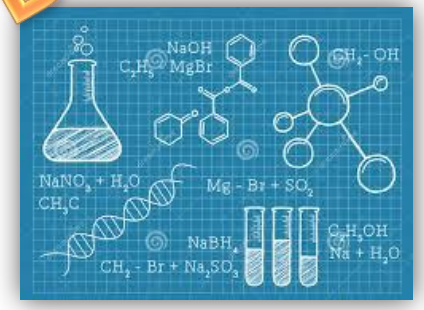
UNIVERSITÀ DEGLI STUDI FIRENZE

Forensic Toxicology Unit

University of Florence

U.R.I.To.N.
is the first highly specialized Unit, in Italy and in Europe, entirely focused on all aspects of drugs of abuse (especially NPS) by means of a multidisciplinary approach.

- Forensic and Clinical Toxicology
- Neurosciences
- Chemistry
- Pharmacology
- Translational Medicine
- Evidence Based Medicine



Other objectives and activities:

- Establishment of a **Scientific Community** (through advanced technologies) and of a network of national and international scientific centers interested in this integrated research approach aimed at public health

- **Creation** and **spread of innovative directions** (recommendations, guidelines, etc) for the prevention, diagnosis, treatment and rehabilitation for research facilities and social –health communities, mainly focusing on health issues related to the use of new drugs

-**Promotion of innovative ways of education, information, scientific communication** and **networking** through Internet and advanced information technologies;

I thank you again to be here in Florence

and now my colleague Dr Fabio Vaiano will illustrate for you our most important cases about

NPS

Department of Health Science
Forensic Toxicology Unit,
University of Florence

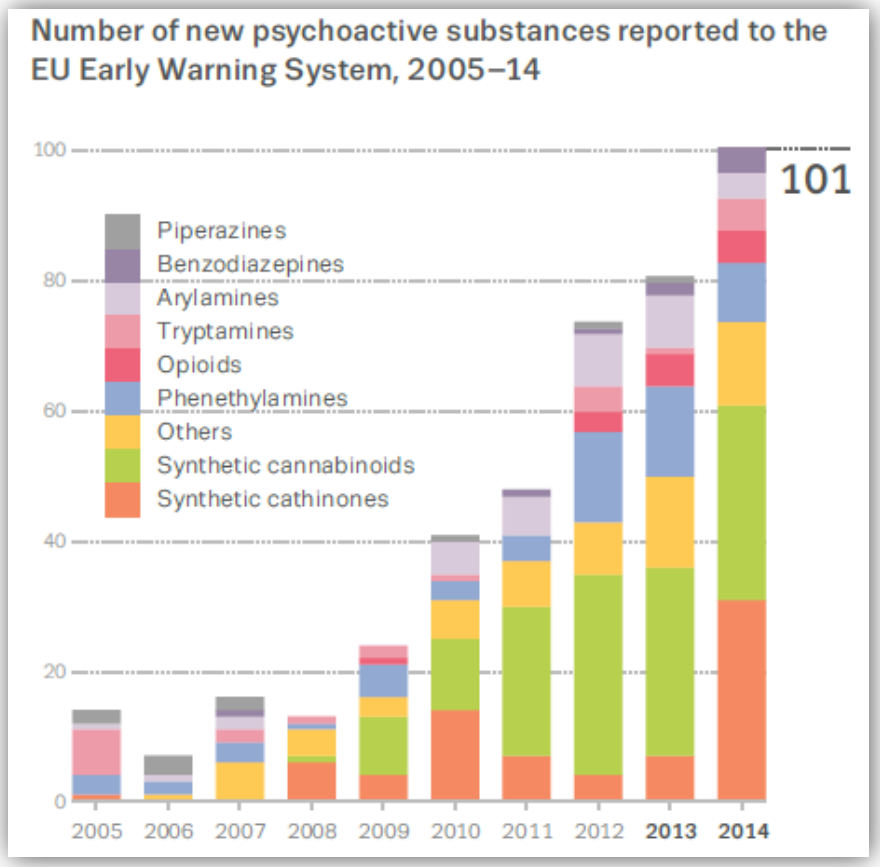
ANALYTICAL CASES RELATED TO NPS IN OUR FORENSIC TOXICOLOGY UNIT

Dr Fabio Vaiano

Research Assistant

The ever-increasing predominance of NPS in the recreational drug market represents an **analytical challenge**.

Both forensic and clinical toxicology laboratories are pressed for the **development** of **rapid**, **specific** and **sensitive methods** for their detection.



Our Forensic Toxicology Unit has always been **focused** on the issue of NPS.

Several cases of detection of NPS have been registered in the last years and promptly reported to the NEWS program of DPA.

Our detection strategy:

- Adoption of **broad-spectrum analytical approaches**.

- Development of more sensitive **analytical procedures** for a great number of compounds;

We keep on improving our analytical methods (especially for *in vivo* detection).

JWH-073 (2013)	**MDPV** (2013)	**AM-694** (2014)	**Mephedrone** (2015)
Solid Phase Extraction (SPE)	Liquid-Liquid Extraction (LLE)	SPE	Protein Precipitation
GC-MS	GC-MS	LC-MS/MS	LC-MS/MS
Only for synthetic cannabinoids		Only for synthetic cannabinoids	**47 NPS** **5 Amphetamines**
No suitable for screening analysis			**Suitable for screening**

CASE 1:

Age:	17 years-old
Gender:	Male
Symptoms:	Hallucination, psychomotory agitation, myosis and mydriasis
Treatment:	Midazolam.
His friends reported:	**He drank a lot**, but they did not know if he consumed anything else.
He declared:	"I **did not remember** anything"

When he was hospitalized, routine analyses were performed on urine and blood:

- Blood alcohol content: **2.60** g/L;
- Urine screening test: **POS** for cannabinoids;

Blood and urine samples were sent to our Unit for further analyses.

Urine screening test by immunoassay (EMIT):

POS for benzodiazepines and cannabinoids
NEG for opiates, cocaine, methadone, barbiturates.

Midazolam and **its metabolite** (α-hydroxymidazolam) were detected both in blood and urine.

Analysis for Cannabinoids:

Urine and Blood samples

↓

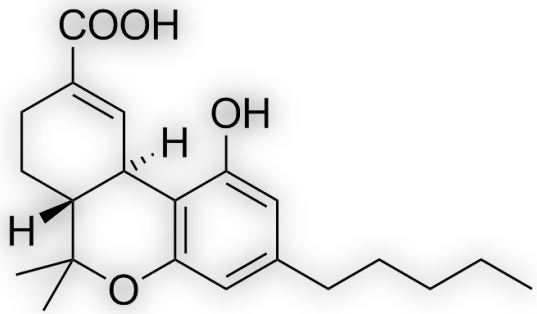
Basic hydrolysis

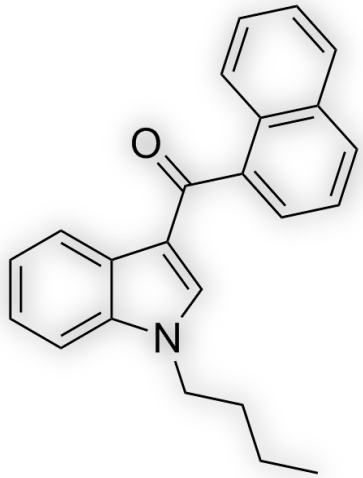
↓

SPE

↓

GC-MS
(SIM mode)





Compound	**Blood** ng/mL	**Urine** ng/mL
THC-COOH	55	1080
JWH-073	2.78	0.1

CASE 2:

Age:	27 years-old
Gender:	Male
Symptoms:	He was found irresponsive in his apartment and transported at the ED of a local hospital at 2.30 pm. Glasgow coma score of 9.
He reported:	Injection of multiple doses of **MDPV** via i.v. Use of **benzodiazepines** to self-treat persistent sleeplessness and not as ‘‘psychoactive’’ substances.

He refused blood analysis and psychiatric assistance and left the hospital at 5.30 pm.

Urine screening test by immunoassay (EMIT):

POS for benzodiazepines
NEG for opiates, cannabinoids, cocaine, methadone, barbiturates.

Detection of Benzodiazepines:

Urine

↓

Enzymatic hydrolysis

↓

LLE

↓

LC-MS/MS
(MRM mode)

Compound	**Urine** ng/mL
Alprazolam	114
α-hydroxyalprazolam	*104*

General unknown GC-MS analysis:

Urine

↓

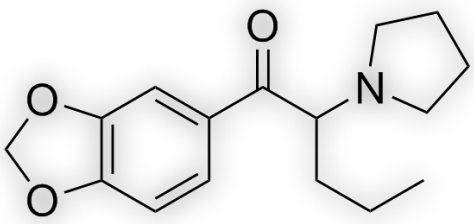
LLE
(basic conditions)

↓

GC-MS
(SCAN mode)

Quantitative GC-MS analysis:

→ GC-MS
(SIM mode)



Compound	**Urine** ng/mL
MDPV	55.7

… 13 days after!

He was admitted to the same ED again, accompanied by his father.

Symptons:	Severe agitation, strange behaviour and suicidal ideation.
He declared:	He remembered being **agitated all the week**, with **delirium** and visual, tactile and auditory **hallucinations**. **He stated snakes had been crawling on him.**
Treatment:	**Diazepam**

Detection of Benzodiazepines:

Compound	Urine ng/mL
Alprazolam	**10.4**
α-hydroxyalprazolam	*13.3*
Diazepam	**1.3**
Temazepam	*170.1*
Nordiazepam	*61.5*
Oxazepam	*15.8*
Chlordiazepoxide	**13.4**

General unknown GC-MS analysis:

Urine

↓

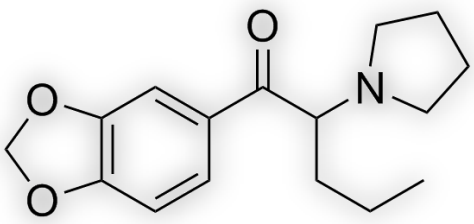
LLE
(basic conditions)

↓

GC-MS
(SCAN mode)

Quantitative GC-MS analysis:

GC-MS
(SIM mode)

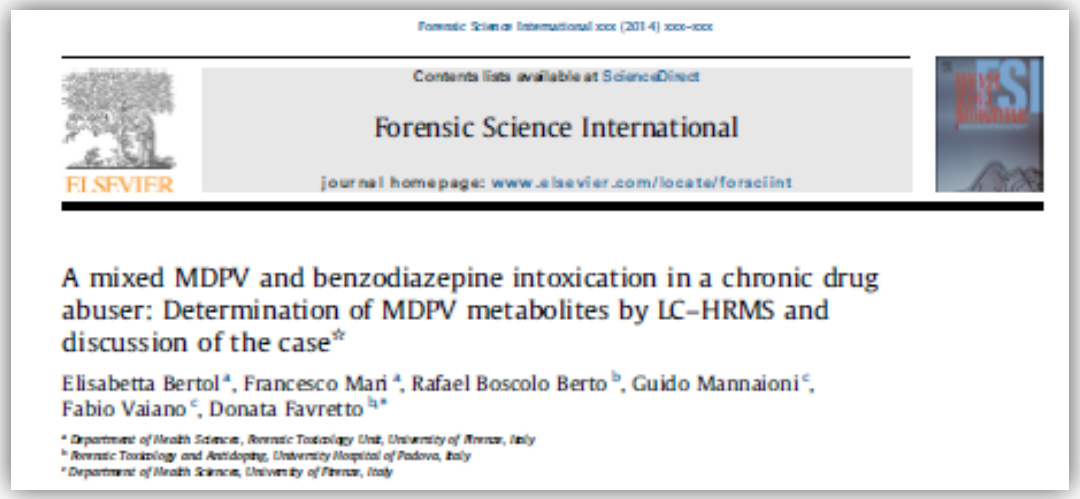


Compound	**Urine** ng/mL
MDPV	35.4

Detection of MDPV metabolites:

Urine sample was analyzed by means of a LC-HRMS (Orbitrap).

Demethylenyl-MDPV-glucuronide;
Demethylenyl-methyl-MDPV-glucuronide isomer 1;
Demethylenyl-methyl-MDPV-glucuronide isomer 2;
Demethylenyl-methyl-oxo-MDPV-glucuronide;
Demethylenyl-methyl-hydroxy-MDPV-glucuronide;
Demethylenyl-oxo-MDPV-glucuronide;



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journal homepage: www.elsevier.com/locate/forsciint

ELSEVIER

A mixed MDPV and benzodiazepine intoxication in a chronic drug abuser: Determination of MDPV metabolites by LC–HRMS and discussion of the case☆

Elisabetta Bertol[a], Francesco Mari[a], Rafael Boscolo Berto[b], Guido Mannaioni[c], Fabio Vaiano[c], Donata Favretto[b,*]

[a] Department of Health Sciences, Forensic Toxicology Unit, University of Firenze, Italy
[b] Forensic Toxicology and Antidoping, University Hospital of Padova, Italy
[c] Department of Health Sciences, University of Firenze, Italy

Self-report history of abuse:

- He had been using cocaine and amphetamines from 2009 to 2011;
- He switched to MDPV and/or methylmethcathinone and/or penthedrone;
- He usually bought 10 g MDPV on the Internet market, superfine white powder with an alleged purity equal to 99%;

Self-report history of abuse:

- At first, he used to dissolve 10 mg of powder into 1-2 mL of water (distilled o public), then assuming the mixture by intravenous self-injection;

- He raised the injected dose to 150 mg, with increased craving leading him to repeat assumption every 6-7 h, requiring a permanent vein insertion point;

- When using MDPV he never consumed other illicit drugs;

- He did not let his hair to be collected for toxicological investigations.

CASE 3:

Age:	25 years-old
Gender:	Male
Symptoms:	He was brought at a local hospital following a major trauma. **Agitation, hallucination, anxiety** and **paranoia**.
Treatment:	**Midazolam**.
He reported:	Ingestion of **alcohol** and **an unknow pill**
Collection time of samples:	**Blood:** **9 h** after hospitalization **Urine:** **6 h** after hospitalization
Blood alcohol content:	**0.015 g/L**

Urine screening test by immunoassay (EMIT):

POS for benzodiazepines
NEG for opiates, cannabinoids, cocaine, methadone, barbiturates.

Confirmation of Benzodiazepines by LC-MS/MS analysis

Compound	**Blood** ng/mL	**Urine** ng/mL
Midazolam	34.84	0.97
α-hydroxymidazolam	23.15	74.58

What about the pill?

General unknown analysis by GC-MS:

NEG for common drugs of abuse.

We decided to perform **two screening analyses** by LC-MS/MS:

- **23** synthetic cannabinoids;
- **16** synthetic cathinones.

Synthetic cathinones:

Urine and blood

↓

LLE
(basic conditions)

↓

LC-MS/MS
(MRM mode)

NEG

- 1-naphyrone
- 3,4-dimethylmethcathinone
- 4-fluoromethcathinone
- 4-methyletcathinone
- Buphedrone
- Butylone
- Dimethilcathinone
- Ethcathinone
- Ethylone
- Methcathinone
- MDPV
- Methedrone
- Methylone
- Naphyrone
- Pentedrone
- Pentylone

Synthetic cannabinoids:

Urine and blood

↓

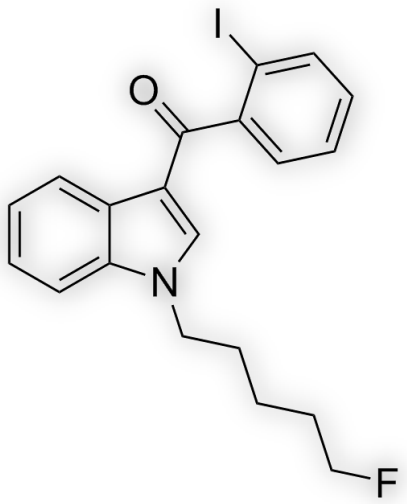
SPE

↓

LC-MS/MS
(MRM mode)

AM-2201	JWH-147
AM-2233	JWH-200
AM-694	JWH-203
CB-13	JWH-210
JWH-007	JWH-250
JWH-016	JWH-251
JWH-018	JWH-302
JWH-019	JWH-307
JWH-073	JWH-398
JWH-081	RCS-4
JWH-098	RCS-8
JWH-122	

Urine
POS for AM-694



Synthetic cannabinoids:

Urine and blood

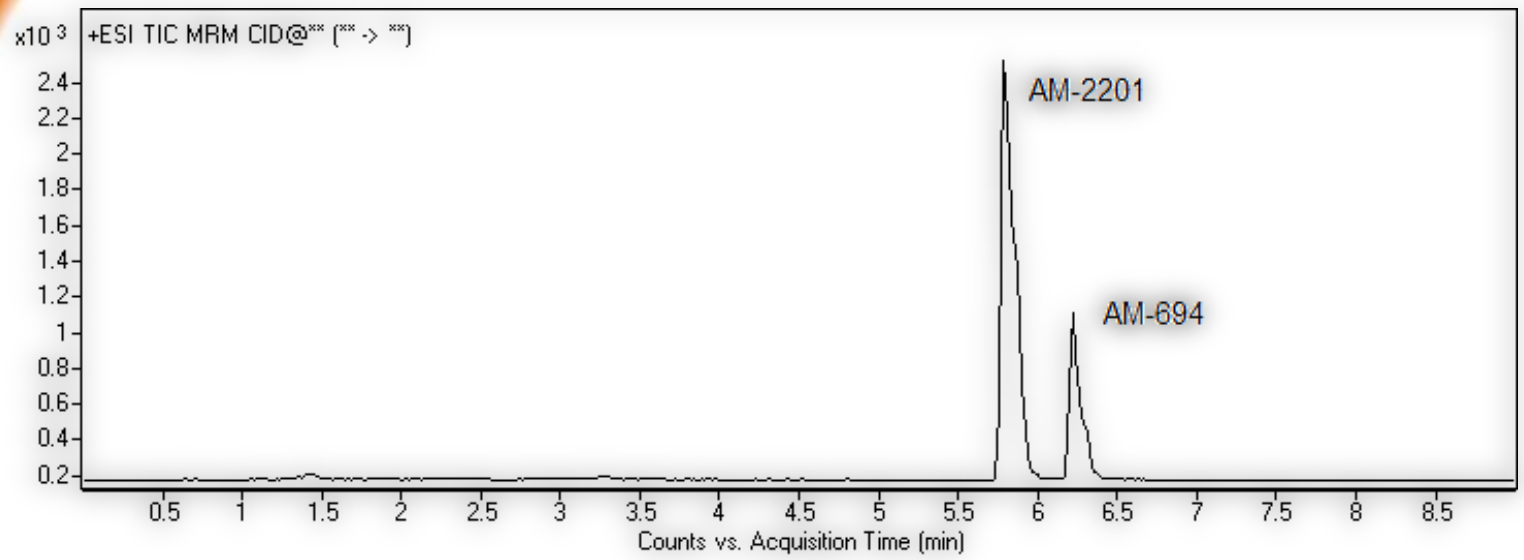
↓

SPE ← AM-2201 Internal Standard

↓

LC-MS/MS
(MRM mode)

Compound	**Urine** ng/mL
AM-694	0.084


x10 3
+ESI TIC MRM CID@** (** -> **)
AM-2201
AM-694
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
5.5
6
6.5
7
7.5
8
8.5
Counts vs. Acquisition Time (min)

AM-694 metabolites:

Urine

↓

Hydrolysis
(acidic conditions)

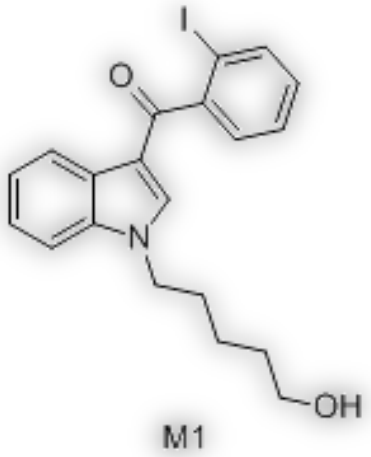
↓

LLE
(basic conditions)

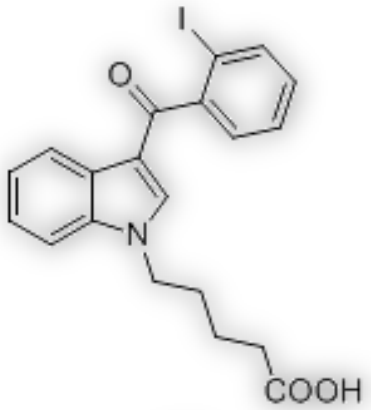
↓

LC-MS/MS
(SIM mode)

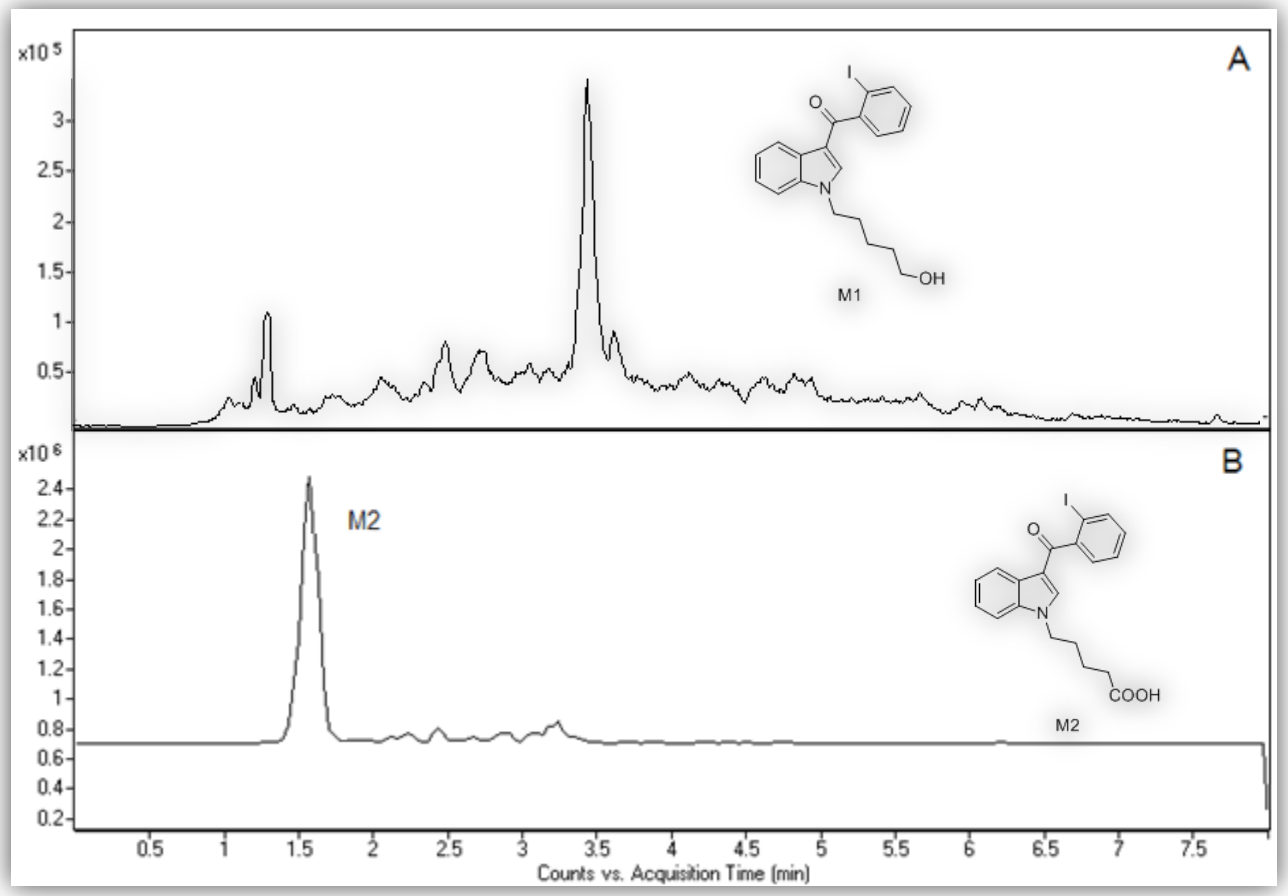
→ Hydrolytically defluorinated AM-694 (M1)
Carboxylated metabolite (M2)



M1



M2


x10 5
A
I
O
N
OH
M1
x10 6
B
M2
I
O
N
COOH
M2
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
5.5
6
6.5
7
7.5
Counts vs. Acquisition Time (min)

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journal homepage: www.elsevier.com/locate/forsciint

In vivo detection of the new psychoactive substance AM-694 and its metabolites

Elisabetta Bertol *, Fabio Vaiano, Maria Grazia Di Milia, Francesco Mari

Department of Health Science, Forensic Toxicology Division, University of Florence, Florence, Italy

First case of *in vivo* identification and quantification of **AM-694 as a parent compound** in urine together with 2 metabolites

In international literature, only **one self-administration case** for metabolism study is reported

In two real cases only the metabolites in urine was found.

Anyway, our case constitutes an **alert** about the spread of this substance.

Indeed, the few documented cases of assumption suggest that **the molecule has already widely spread on the illicit market**

**If up until now the spread of NPS does not seem alarming,
and documented cases in biological fluids seem few,
we must think this is**

ONLY DUE TO A LACK

**of routine analytical protocols
for the search for these substances**

NOT

because they are not present among the population.

CASE 4:

Age: 23 years-old
Gender: Female
Findings: Her corpse was found in the toilet of a nightclub.

No further information available.

Specimen: peripheric blood.

General unknown analysis by GC-MS:

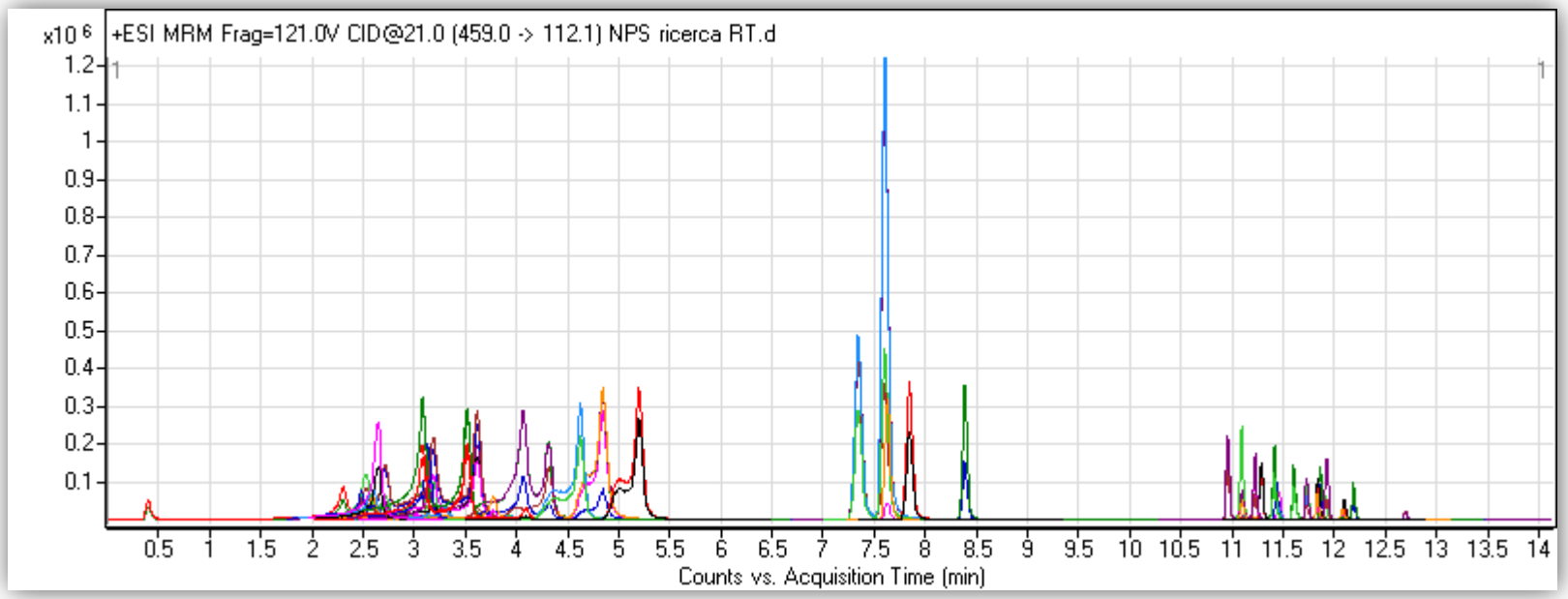
POS for methamphetamine.

NEW SCREENING METHOD FOR SIMULTANEOUS DETECTION OF 52 COMPOUNDS BY A SINGLE LC-MS/MS ANALYSIS

Amphetamine	Pentedrone	4-FA	AM-2201
Methamphetamine	Methedrone	MDAI	CB-13
MDA	Methylone	JWH-251	JWH-210
MDMA	Butylone	RCS-4	JWH-081
MDEA	Ethylone	JWH-073	RCS-8
Methcathinone	Pentylone	JWH-250	JWH-389
Mephedrone	MDPV	JWH-302	Pravadoline
Dimethilcathinone	1-Naphyrone	JWH-203	JWH-147
Ethcatinone	Naphirone	JWH-016	JWH-200
Buphedrone	3-MMC	JWH-018	JWH-307
4-fluorometcathinone	Nor-Ketamine	JWH-122	JWH-098
4-Methiletcathinone	Ketamine	JWH-007	AM-694
3,4-Dimethylmethcathinone	Methoxethamine	JWH-019	AM-2233

Dynamic MRM mode enables the monitoring of transitions only at **specific detection windows** around the expected retention time of each compound.

Thus, background noise and matrix interferences are excluded, improving the sensitivity of the method.



Screening

Blood
(200 µL)

↓

Protein precipitation
(600 µL ACN)

↓

LC-MS/MS
(dyn MRM mode)

Suitable for screening analysis:

Ease to perform;

Fast;

Sensitive.

POS for methamphetamine and mephedrone

Confirmation analysis

Blood

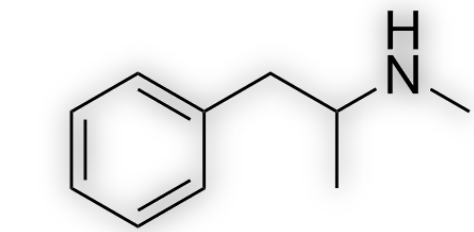
↓

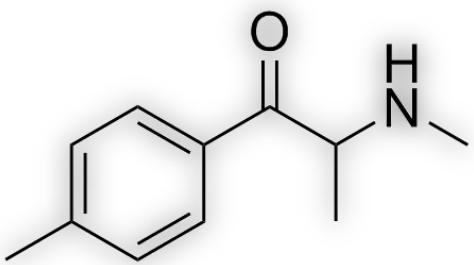
Protein precipitation
(Acetonitrile)

↓

LC-MS/MS
(MRM mode)

← MDMA
Internal Standard





Compound	**Blood** ng/mL
Methamphetamine	315.2
Mephedrone	20.1

Five cases of NPS detection in seized material:

- **Case 1**:	97.98 g of white powder	**3-MMC**	80.95 %
- **Case 2**:	0.93 g of white powder	**4-FA**	87.66 %
- **Case 3**:	0.91 g of white powder	**Penthedrone**	97.10 %
- **Case 4**:	3.76 g of white powder	**Penthedrone** **3-MMC**	12.46 %+ 78.09 %
- **Case 5**:	0.13 g of white powder	**Methoxethamine**	100 %

Thank You!!!

Co-funded by the Prevention of and Fight against
Crime Programme of the European Union
JUST/2013/ISEC/DRUGS/AG/6426

NPS DATABASE

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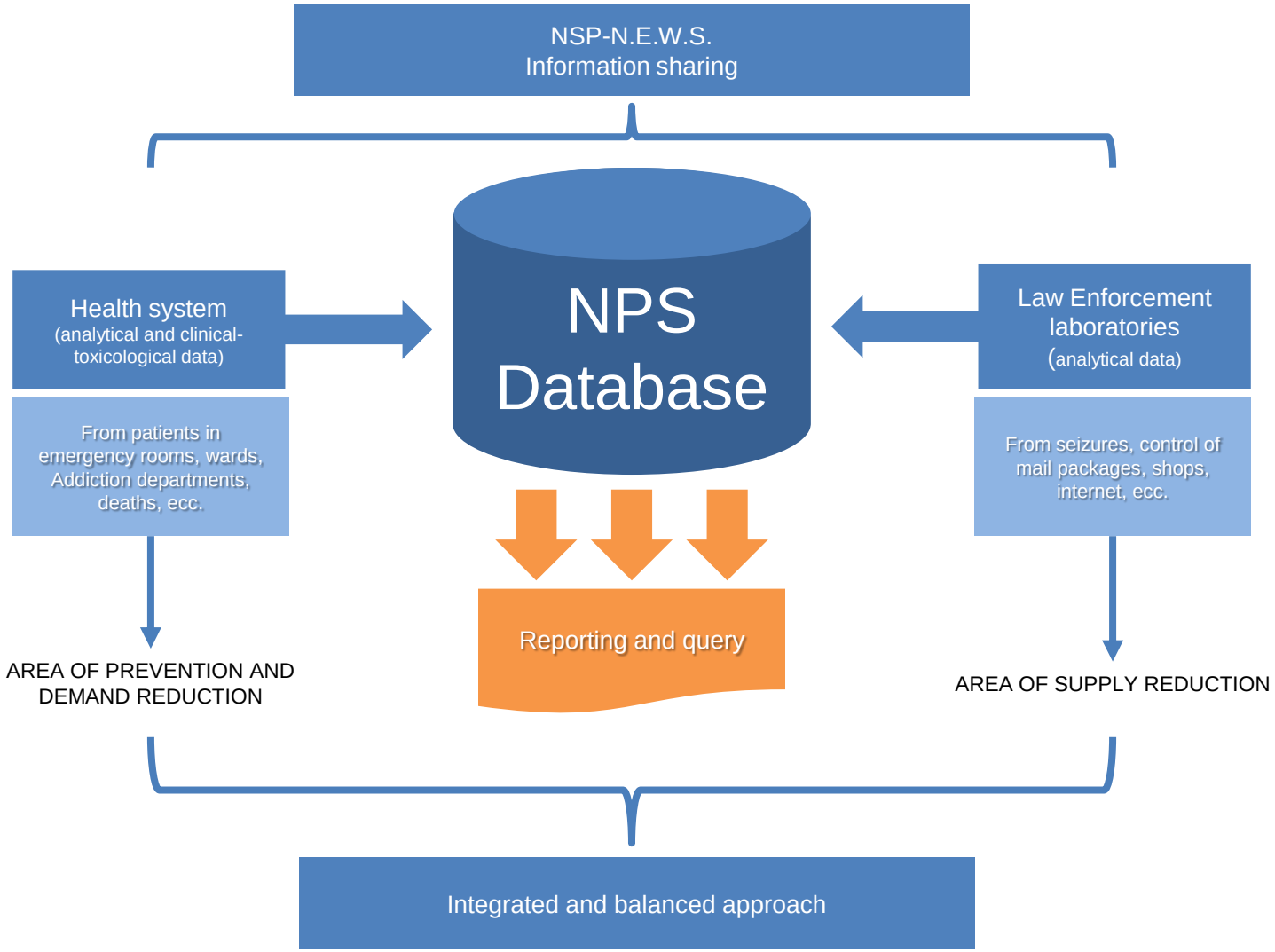
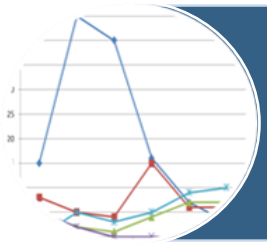
e Neuroscienze delle Dipendenze
Università degli Studi di Firenze
Dipartimento di Scienze della Salute

Claudia Rimondo
I-SEE project
Project manager

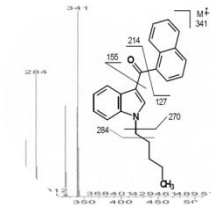
NPS Database

The organization





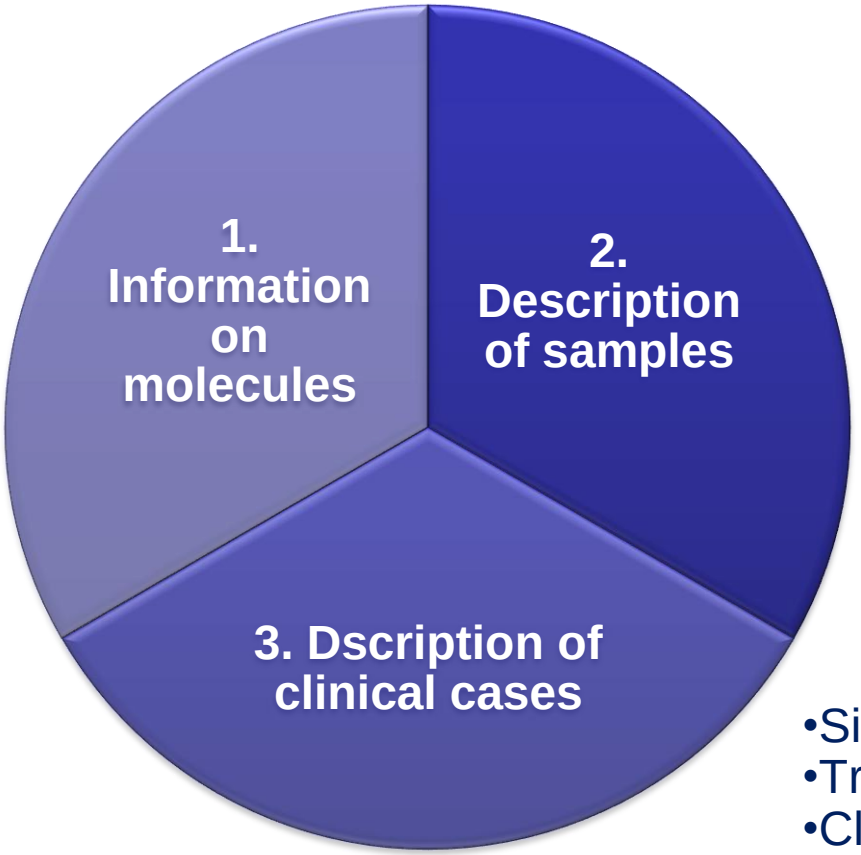
Monitoring



Data collection

An integrated database

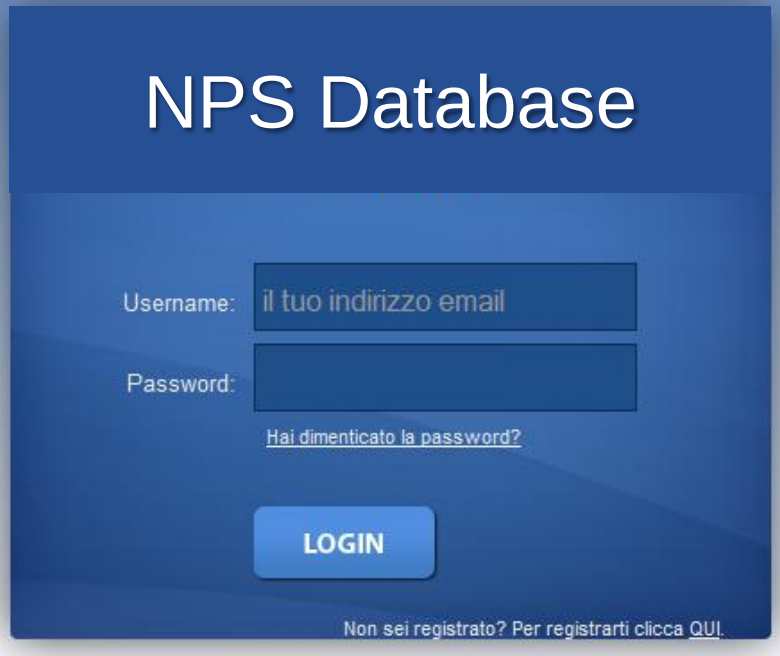
- Chemical structure
- Pharmacology
- Pharmacokinetic/ metabolism
- Effects/Toxicity
- Analytical characterization
- Legal status
- Information from Internet

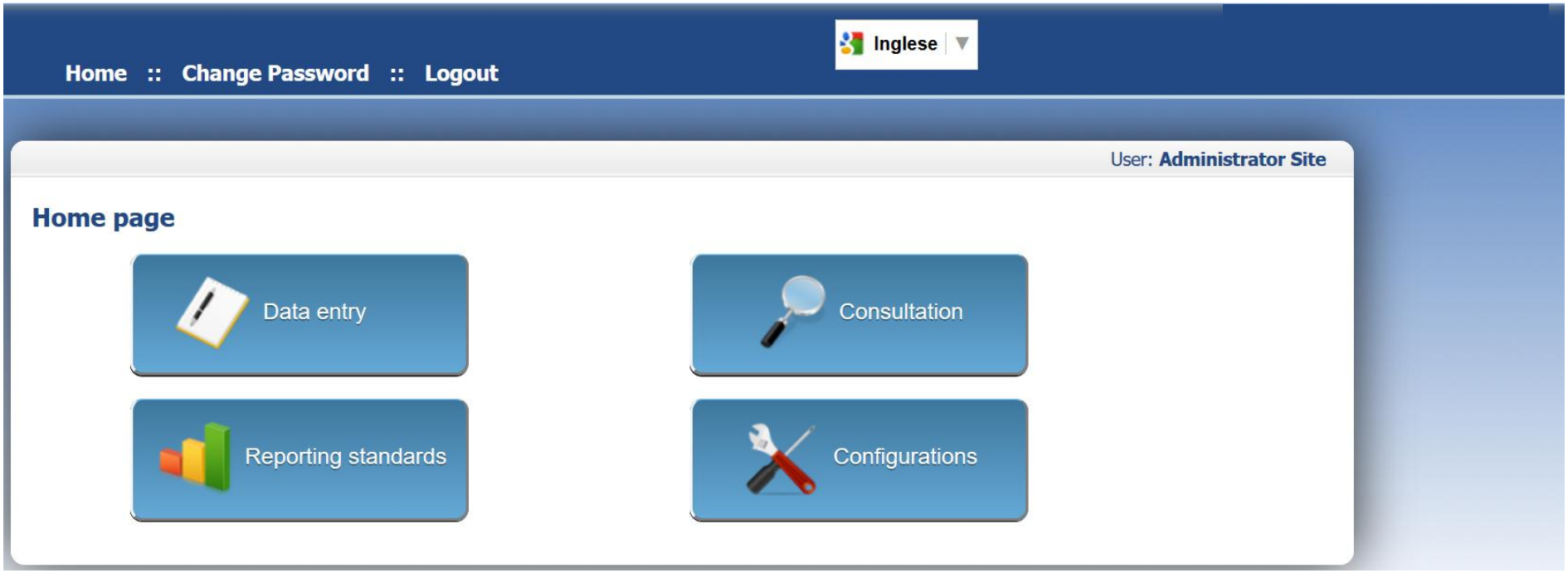


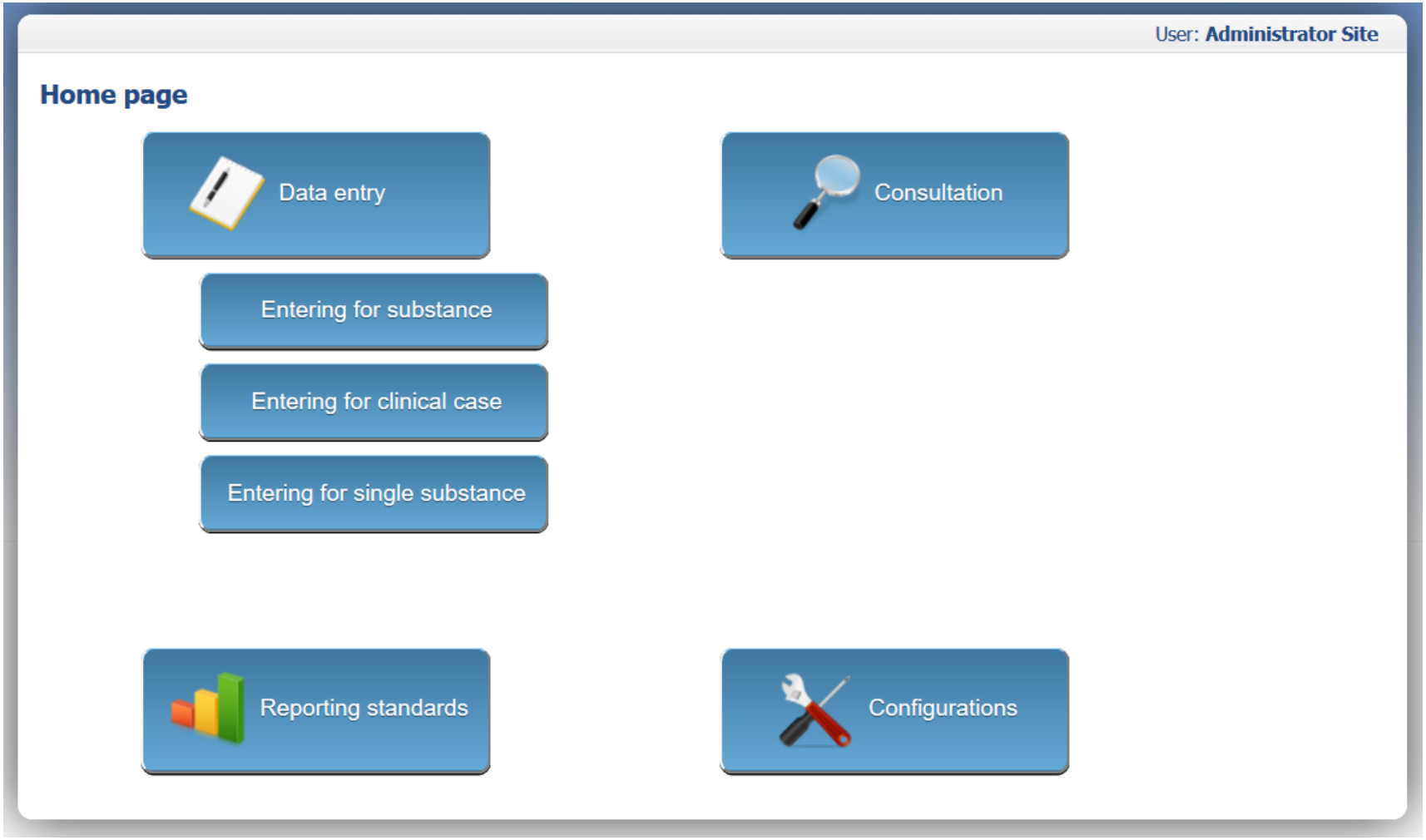
- Biological samples
- Seizures
- Collected samples
- Other

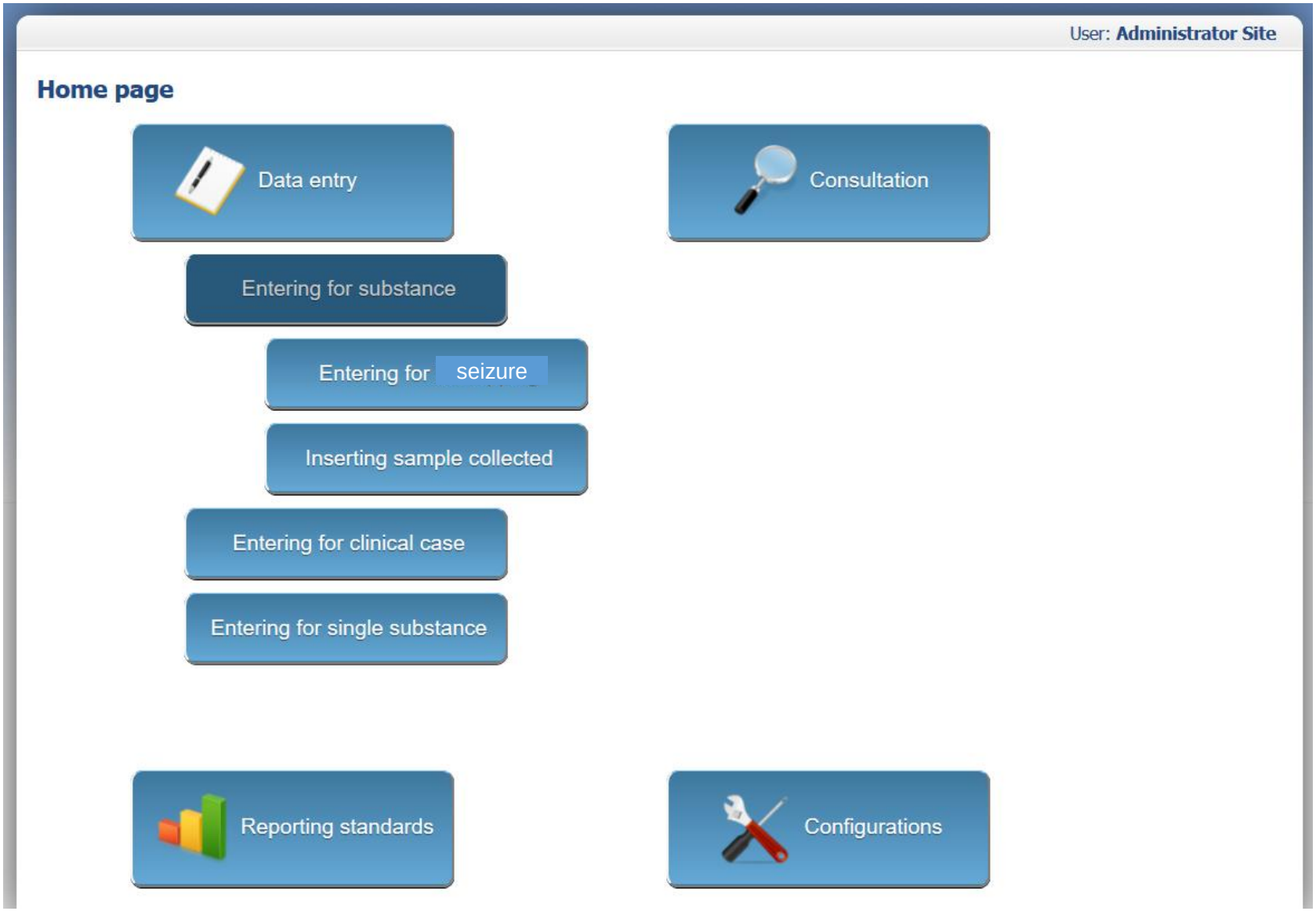
- Signs and symptoms
- Treatments
- Clinical-Toxicological data

DB available online




Inglese
Home :: Change Password :: Logout
User: Administrator Site
Home page
Data entry
Consultation
Reporting standards
Configurations


User: Administrator Site
Home page
Data entry
Consultation
Entering for substance
Entering for clinical case
Entering for single substance
Reporting standards
Configurations


User: Administrator Site
Home page
Data entry
Consultation
Entering for substance
Entering for seizure
Inserting sample collected
Entering for clinical case
Entering for single substance
Reporting standards
Configurations

Managing Seizures - List

cerca...

New | Edit | Delete | Go to the Trash | Change reporting | Changing reporting date

	Reporting	Type	Date Segnal.	Date Seizure	Description	country	Region	Prov.	Authority	Circumstances	N. Finds
1	Catia	Law Enforcement - Generic	09/30/2014	03/12/2014	Seized a finding of cannabis resin of	Italy	ABRUZZO	CH	FFOO	Body search	1
2	RIS - Rome	Law Enforcement - Generic	05/05/2014	12/23/2013	In December 2013, the Carabinieri	Italy	PUGLIA	BA	Police Command Station A	Body search	1
3	administrator		01/30/2014	00-12-2013	weweweew	Albania				Body search	1
4	Site Administrator	Institutions (Ministry of Hea	04/12/2013	15/11/2013	Signaling the detection of "DOC" in	Italy	UMBRIA	PG	Carabinieri	Body search	1
5	Laboratory Analysis Narcotic Drugs Pc	Law Enforcement - Generic	31/03/2014	11/11/2013	In November 2013, the Laboratory noted	Italy	TRENTINO ALTO ADIGE	BZ	Carabinieri Sterzing (BZ)	Other	1
6	RIS - Rome	Law Enforcement - Generic	01/03/2014	00-11-2013	In December 2013, the Carabinieri	Italy	PUGLIA	BA	Police Command Station A	Postal correspondence	1
7	Laboratory Analysis Narcotic Drugs Pc	Law Enforcement - Generic	31/03/2014	14/10/2013	In October 2013, the Laboratory A	Italy	TRENTINO ALTO ADIGE	BZ	Carabinieri Sterzing	Other	1
8	EMCDDA	EMCDDA	16/12/2013	09/25/2013	In November 2013, the Swedish Fc	Sweden			Customs staff at Gothenbu	Traffic	1
9	Legion Carabinieri South Tyrol Provinc	Law Enforcement - Generic	31/03/2014	26/07/2013	In July 2013, the Carabinieri Legion	Italy	TRENTINO ALTO ADIGE	BZ	Legion Carabinieri Trentino	Body search	1
10	EMCDDA	EMCDDA	11/12/2013	00-07-2013	The substance AM-6527 5-fluorope	Germany			German police in Heilsbronr	Other	1

10 | Page 1 7

Displaying 1 to 10 of 65 elements

User: **Administrator Site**

Managing Seizures - New

List seizures

General data | Finds | Other

Date seizure:
gg * mm * yyyy

Description
* :

Country * : --- seleziona --- Region: Province:

Authority :

Circumstances * : Other: (specify)

Save Cancel

Managing Seizures - New

General data | **Finds** | Other

Add card find

Finds No .: 1

Exhibit 1 ×

Provenance * : ◯ Not known ◯ Note

Country * : --- seleziona --- Region: Province:

The main psychoactive substance * : Percentage:

Other psychoactive substances * : ◯ Not known ◯ Not present ◯ Present

Other psychoactive substances * : ◯ Not known ◯ Not present ◯ Present

Form * : --- seleziona --- Other: (specify)

Color: Quantity * : (number)

Total weight (net) * : (G) Total weight (gross): (G) Unit weight (net): (G)

Size: Logo: Commercial name:

Intended use * : Other: (specify)

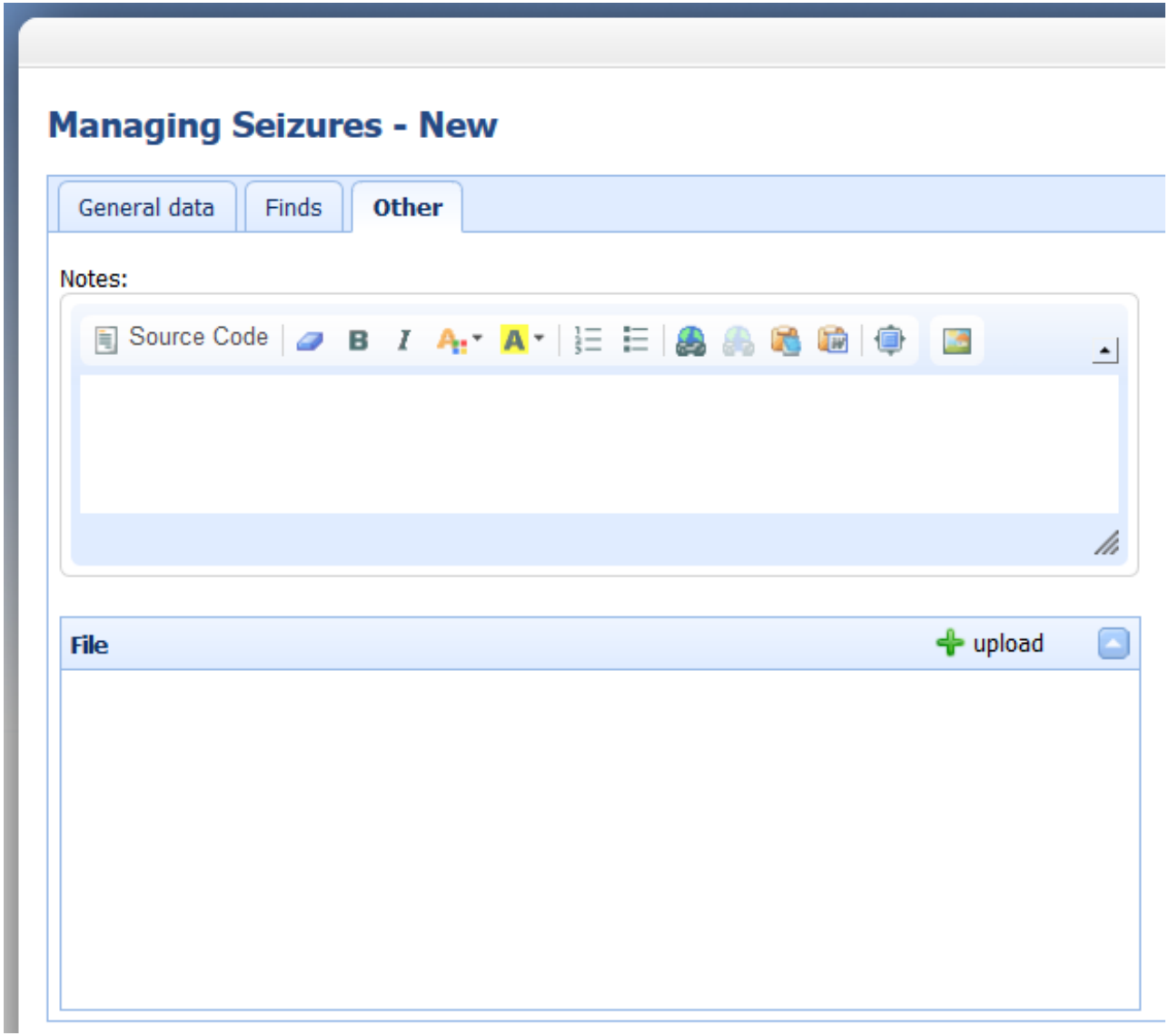
Images + upload

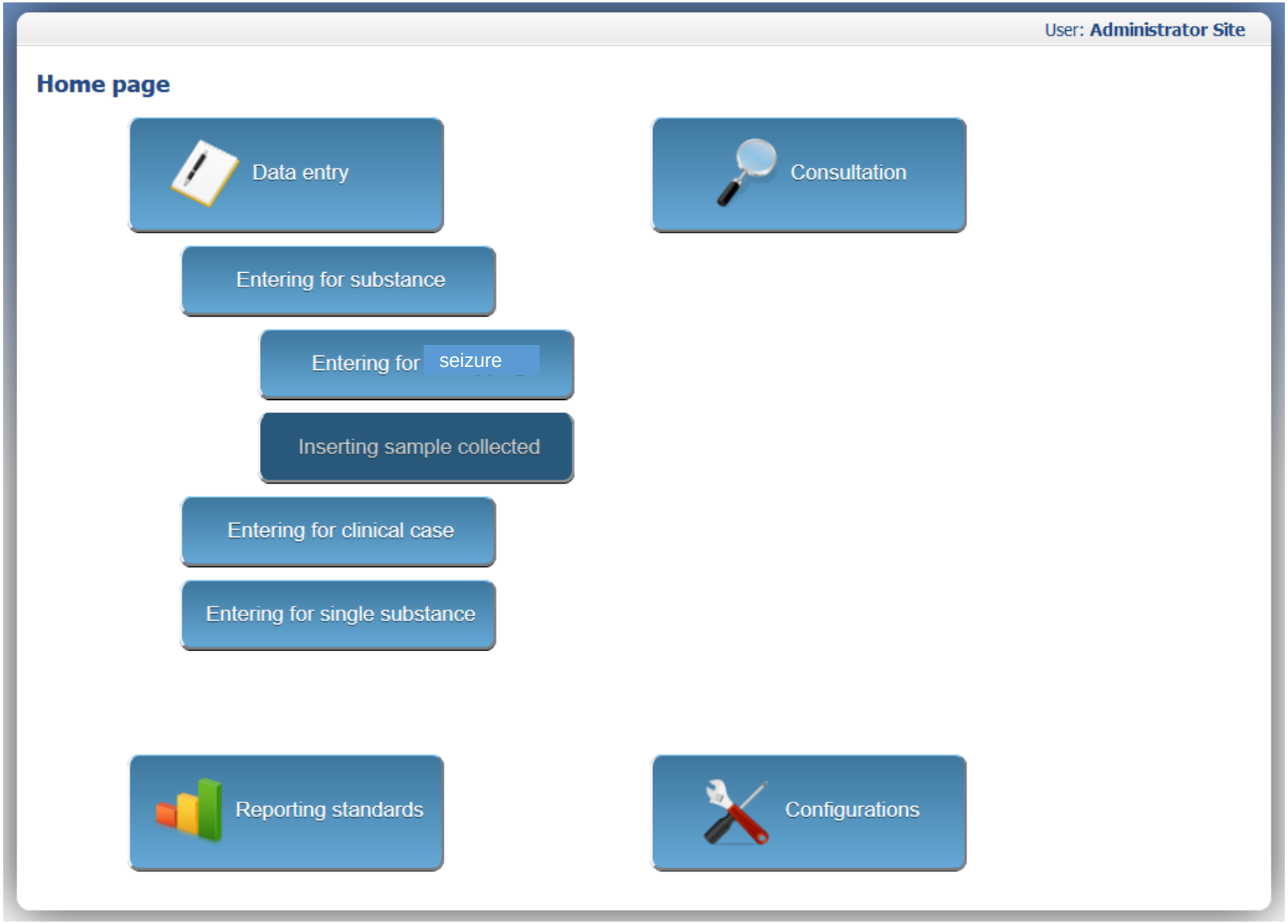
Analytical data quality available * : ◯ No ◯ Yes

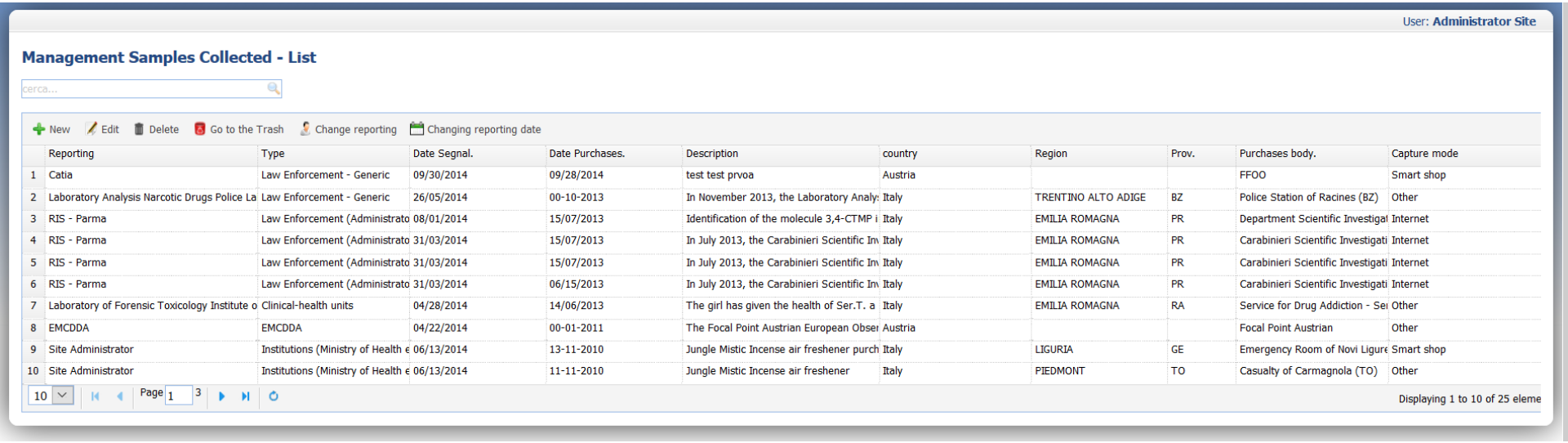
Quantitative analytical data available * : ◯ No ◯ Yes

State reporting:
◯ Monitoring
◯ Successfully
◯ Archiving

Text:


Managing Seizures - New
General data
Finds
Other
Notes:
Source Code
File
upload


User: Administrator Site
Home page
Data entry
Consultation
Entering for substance
Entering for seizure
Inserting sample collected
Entering for clinical case
Entering for single substance
Reporting standards
Configurations



User: **Administrator Site**

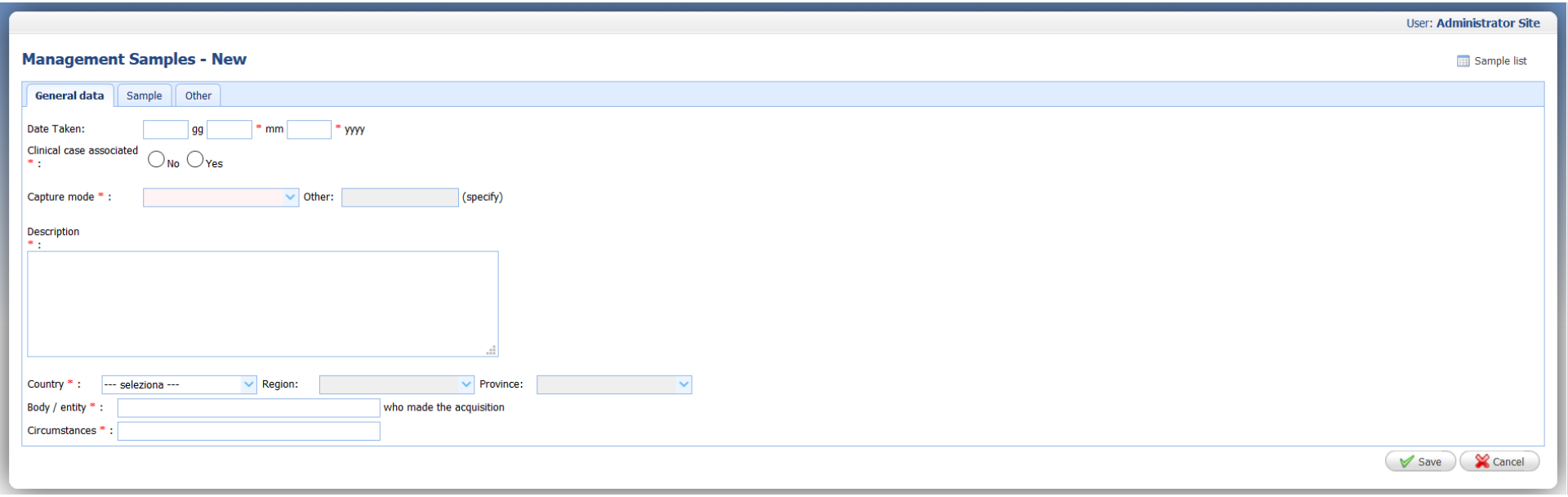
Management Samples Collected - List

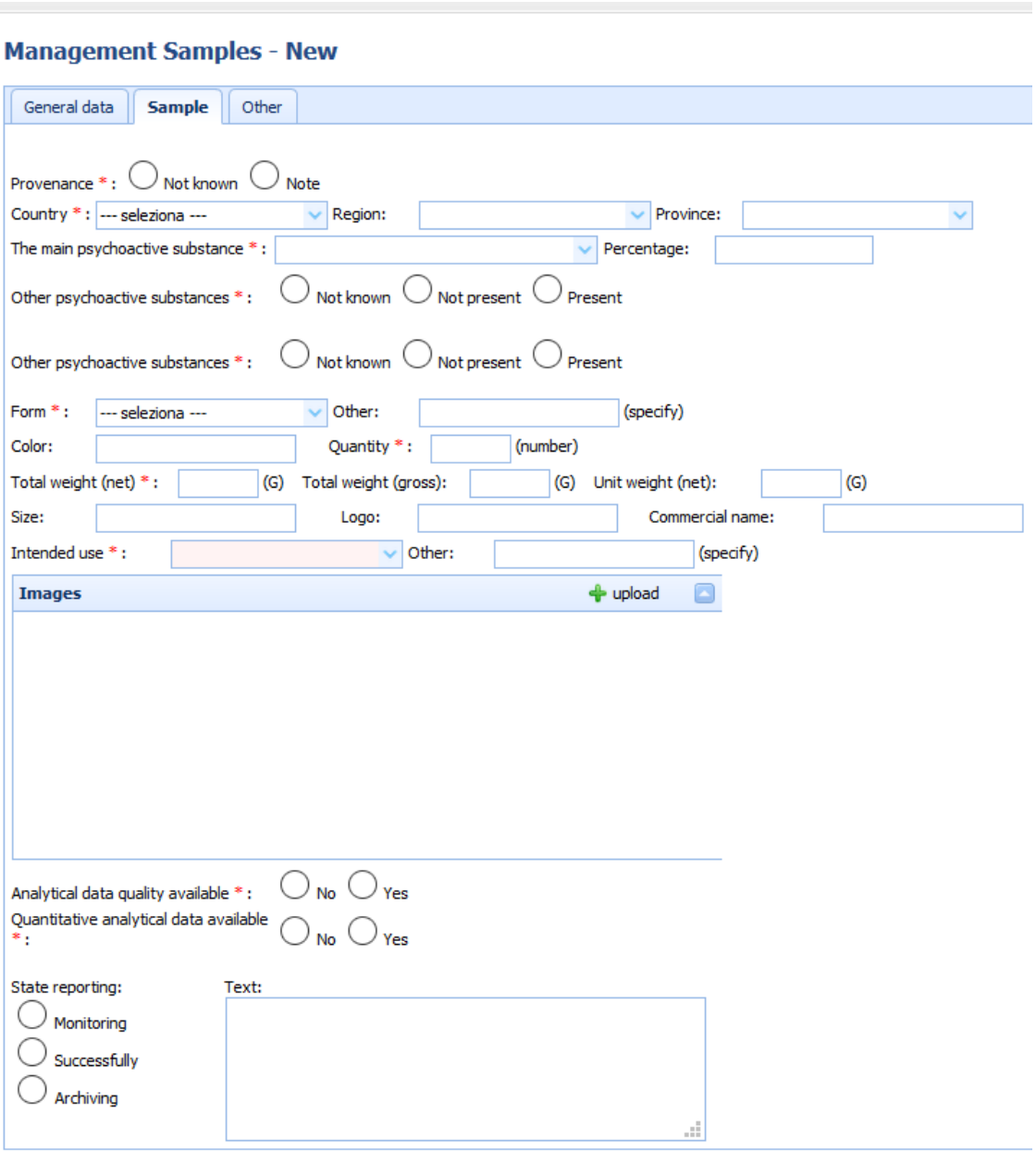
cerca...

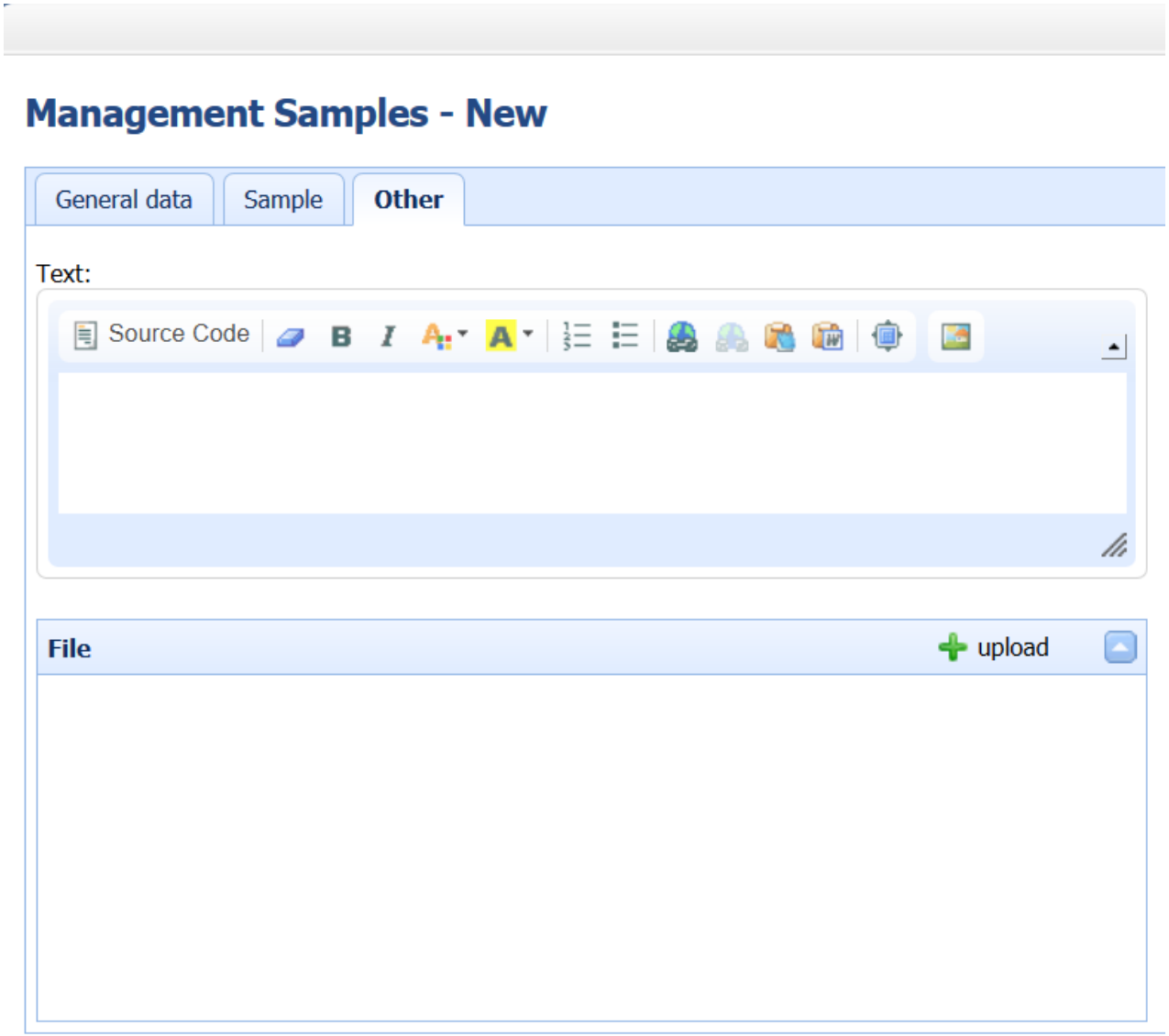
New | Edit | Delete | Go to the Trash | Change reporting | Changing reporting date

	Reporting	Type	Date Segnal.	Date Purchases.	Description	country	Region	Prov.	Purchases body.	Capture mode
1	Catia	Law Enforcement - Generic	09/30/2014	09/28/2014	test test prvoa	Austria			FFOO	Smart shop
2	Laboratory Analysis Narcotic Drugs Police La	Law Enforcement - Generic	26/05/2014	00-10-2013	In November 2013, the Laboratory Analy:	Italy	TRENTINO ALTO ADIGE	BZ	Police Station of Racines (BZ)	Other
3	RIS - Parma	Law Enforcement (Administrato	08/01/2014	15/07/2013	Identification of the molecule 3,4-CTMP i	Italy	EMILIA ROMAGNA	PR	Department Scientific Investigat	Internet
4	RIS - Parma	Law Enforcement (Administrato	31/03/2014	15/07/2013	In July 2013, the Carabinieri Scientific Inv	Italy	EMILIA ROMAGNA	PR	Carabinieri Scientific Investigati	Internet
5	RIS - Parma	Law Enforcement (Administrato	31/03/2014	15/07/2013	In July 2013, the Carabinieri Scientific Inv	Italy	EMILIA ROMAGNA	PR	Carabinieri Scientific Investigati	Internet
6	RIS - Parma	Law Enforcement (Administrato	31/03/2014	06/15/2013	In July 2013, the Carabinieri Scientific Inv	Italy	EMILIA ROMAGNA	PR	Carabinieri Scientific Investigati	Internet
7	Laboratory of Forensic Toxicology Institute o	Clinical-health units	04/28/2014	14/06/2013	The girl has given the health of Ser.T. a	Italy	EMILIA ROMAGNA	RA	Service for Drug Addiction - Ser	Other
8	EMCDDA	EMCDDA	04/22/2014	00-01-2011	The Focal Point Austrian European Obser	Austria			Focal Point Austrian	Other
9	Site Administrator	Institutions (Ministry of Health e	06/13/2014	13-11-2010	Jungle Mistic Incense air freshener purch	Italy	LIGURIA	GE	Emergency Room of Novi Ligure	Smart shop
10	Site Administrator	Institutions (Ministry of Health e	06/13/2014	11-11-2010	Jungle Mistic Incense air freshener	Italy	PIEDMONT	TO	Casualty of Carmagnola (TO)	Other

10 | Page 1 3 | Displaying 1 to 10 of 25 eleme


User: Administrator Site
Management Samples - New
Sample list
General data
Sample
Other
Date Taken:
gg
* mm
* yyyy
Clinical case associated * :
No
Yes
Capture mode * :
Other:
(specify)
Description * :
Country * :
--- seleziona ---
Region:
Province:
Body / entity * :
who made the acquisition
Circumstances * :
Save
Cancel


Management Samples - New
General data
Sample
Other
Provenance * :
Not known
Note
Country * :
--- seleziona ---
Region:
Province:
The main psychoactive substance * :
Percentage:
Other psychoactive substances * :
Not known
Not present
Present
Other psychoactive substances * :
Not known
Not present
Present
Form * :
--- seleziona ---
Other:
(specify)
Color:
Quantity * :
(number)
Total weight (net) * :
(G)
Total weight (gross):
(G)
Unit weight (net):
(G)
Size:
Logo:
Commercial name:
Intended use * :
Other:
(specify)
Images
upload
Analytical data quality available * :
No
Yes
Quantitative analytical data available * :
No
Yes
State reporting:
Monitoring
Successfully
Archiving
Text:


Management Samples - New
General data
Sample
Other
Text:
Source Code
File
upload

Home page


Data entry


Consultation

Entering for substance

Entering for clinical case

Inserting for signs and symptoms

Entering for biological sample

Entering for single substance


Reporting standards


Configurations

User: **Administrator Site**

Management Signs and Symptoms - List

cerca...

New | Edit | Delete | Go to the Trash | Change reporting | Changing reporting date

	Reporting	Type	Date Segnal.	Date Remarks	Description	country	Region	Prov.	Common
1	Site Administrator		04/24/2014	05/04/2014	In April 2014, the structure of Forensic To	Italy	TUSCANY	FI	
2	Laboratory Analysis Narcotic Drugs Police Lai		26/05/2014	00-11-2013	In November 2013, the Laboratory Analys	Italy	TRENTINO ALTO ADIGE	BZ	
3	EMCDDA		21/02/2014	00-08-2013	In August 2013, the Norwegian Focal Poin	Norway			
4	EMCDDA		12/13/2013	00-08-2013	At the site of the European Observatory it	United States of America			
5	Poison Center AOUC Florence		17/04/2014	00-07-2013	In July 2013, the Poison Control Center A	Italy	TUSCANY	FI	
6	Laboratory of Forensic Toxicology Institute o		14/06/2013	14/06/2013	In June 2013, the Laboratory of Forensic	Italy	EMILIA ROMAGNA	RA	
7	Center Antivaleni Fondazione Salvatore Maug		17/04/2014	00-02-2013	In June 2013, the Pavia Poison Center rep	Italy	PIEDMONT	BI	
8	EMCDDA		21/02/2014	00-02-2013	In February 2013, the Swedish Focal Poin	Sweden			
9	Center Antivaleni Fondazione Salvatore Maug		04/16/2014	00-01-2013	In June 2013, the Poison Control Center c	Italy	EMILIA ROMAGNA	BO	
10	Center Antivaleni Fondazione Salvatore Maug		04/16/2014	00-01-2013	In June 2013, the Poison Control Center c	Italy	EMILIA ROMAGNA	BO	

10 | Page 1 4

Displaying 1 to 10 of 31 elements

Signs and symptoms

- [ ] Metabolic acidosis
- [ ] Agranulocytosis
- [ ] Amnesia
- [ ] Anxiety
- [ ] Ataxia
- [ ] Chills
- [ ] Catatonia
- [ ] Disseminated intravascular coagulation (DIC)
- [ ] Seizures
- [ ] Diarrhea
- [ ] Dystonia
- [ ] Abdominal pains
- [ ] Peripheral edema
- [ ] Cerebral hemorrhage
- [ ] Epistaxis
- [ ] Photophobia
- [ ] Cerebral insufficiency
- [ ] Hypertension
- [ ] Hypotension
- [ ] Leukocytosis
- [ ] Miosis
- [ ] Nystagmus
- [ ] Palpitations
- [ ] Rhabdomyolysis
- [ ] Sedation
- [ ] Drowsiness
- [ ] Tachycardia
- [ ] Trembling legs
- [ ] Dizziness
- [ ] Aggression
- [ ] Algia
- [ ] Anemia
- [ ] Apnea
- [ ] Panic attacks
- [ ] Bruxism
- [ ] Blindness
- [ ] Cardiopulmonary collapse
- [ ] Corrosion of the mucous membranes
- [ ] Dysarthria
- [ ] Distubi lower urinary tract
- [ ] Widespread pain
- [ ] Pulmonary edema
- [ ] Encephalopathy
- [ ] Euphoria
- [ ] Stroke
- [ ] Kidney failure
- [ ] Hyperthermia
- [ ] Hypothermia
- [ ] General malaise
- [ ] Nausea / emesis
- [ ] Horizontal nystagmus
- [ ] Paresthesia
- [ ] Rush
- [ ] Anaphylactic shock
- [ ] Deafness
- [ ] Quadriplegia
- [ ] Tremor / dyskinesia
- [ ] Watchful
- [ ] ACC - Circulatory Arrest Cardio
- [ ] Hallucinations / delirium
- [ ] Anisocoria
- [ ] Arrhythmia
- [ ] Bradycardia
- [ ] Palpitations
- [ ] Headache
- [ ] Coma
- [ ] Depression
- [ ] Disorientation
- [ ] Sleep disorders
- [ ] Muscle aches
- [ ] Hematemesis
- [ ] Hepatotoxicity
- [ ] Fever
- [ ] Unconsciousness
- [ ] Hyperglycemia
- [ ] Overtone
- [ ] Eye irritation
- [ ] Mydriasis
- [ ] Nephrotoxicity
- [ ] Vertical nystagmus
- [ ] Goose bumps
- [ ] Twitching
- [ ] Gastrointestinal symptoms
- [ ] Constipation
- [ ] Cough
- [ ] Lockjaw
- [ ] Xerostomia
- [ ] Agitation / excitement
- [ ] Changes in visual acuity / nystagmus
- [ ] Anorectic
- [ ] Respiratory arrest
- [ ] Bradypnea
- [ ] Cardiotoxicity
- [ ] Clonie
- [ ] Bewilderment
- [ ] Respiratory depression
- [ ] Dyspnea
- [ ] Chest pain
- [ ] Brain edema
- [ ] Migraine
- [ ] Epigastralgia
- [ ] Flushing
- [ ] Myocardial infarction
- [ ] Hyperreflexia
- [ ] Hypoglycemia
- [ ] Lachrymation
- [ ] Myoclonus
- [ ] Neurotoxicity
- [ ] Stupor
- [ ] Psychosis
- [ ] Salivation
- [ ] Drowsiness
- [ ] Sweating
- [ ] Tremor spread
- [ ] Flushes

Date patient observation:
gg * mm * yyyy

Overview * :

Country * : --- seleziona --- Region: Province: Common:

Sex patient * : Male Female Not known Age * : Death * : No Yes

Body temperature: ° C Blood pressure: mmHg Heart rate: FC bpm Saturation:

History | Outcome instrumental investigations | Other clinical information

Product statement, referred *

Not known Not reported Known

Select substance: add

Other:

Routes of referring: * Other: (specify)

Circumstances and environments of consumption reported: * Other: (specify)

Toxicology screening performed (urine) *

○ No ○ Yes

Positivity

Select substance: add

Negativity

Select substance: add

Treatment in emergency

Intervention | Pharmacological | Other

Biological sample available

○ No ○ Yes

☐ blood ☐ serum ☐ urine ☐ saliva ☐ hair ☐ other

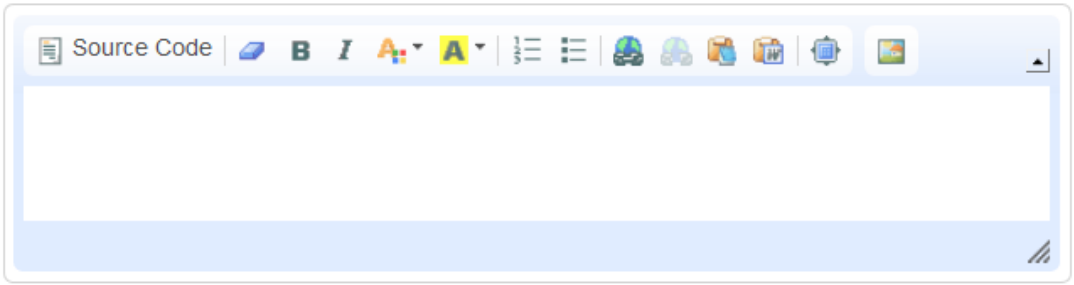
Collected sample available

○ No ○ Yes

Conclusions volume intake

Select substance: add

Other:

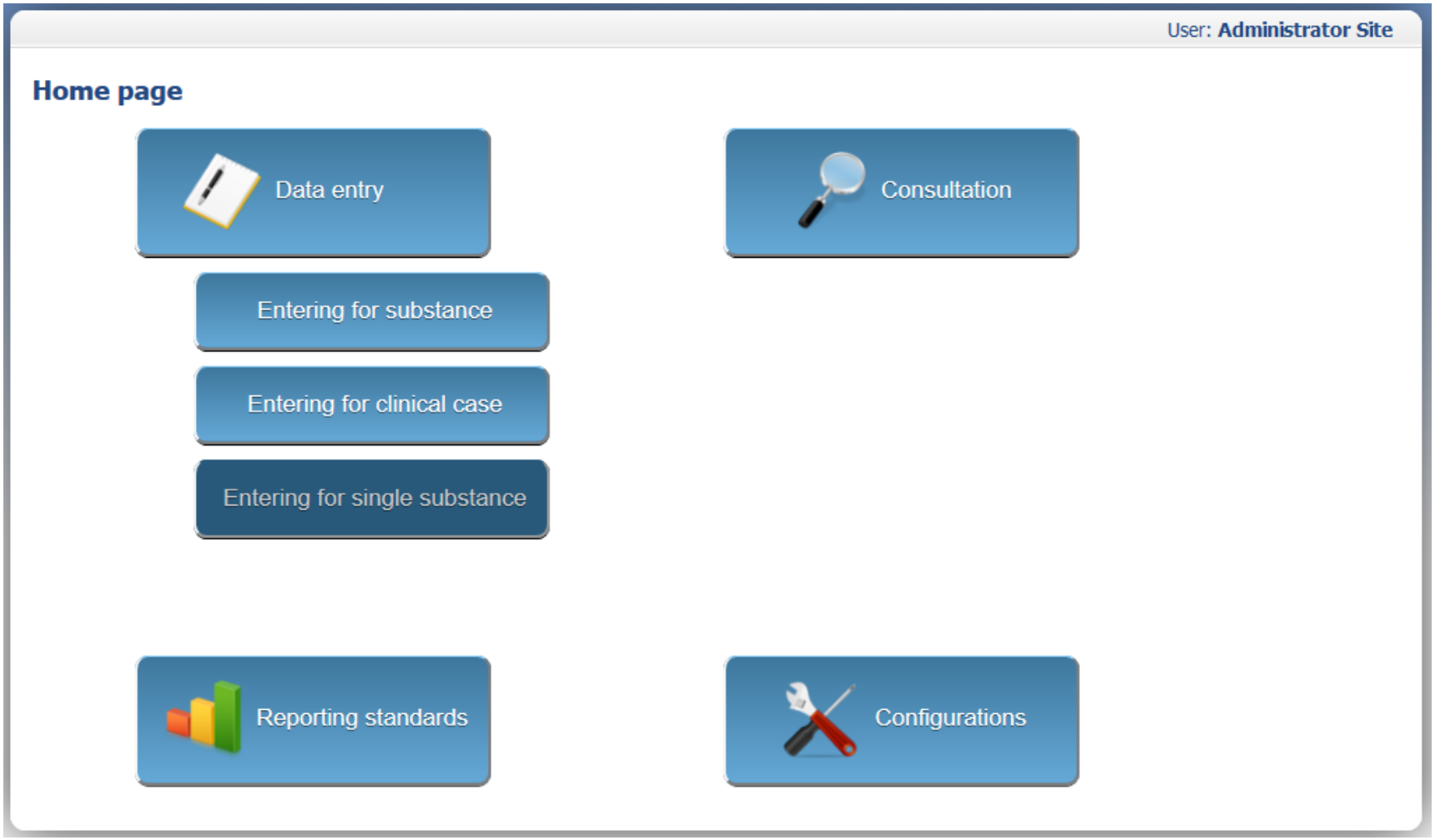


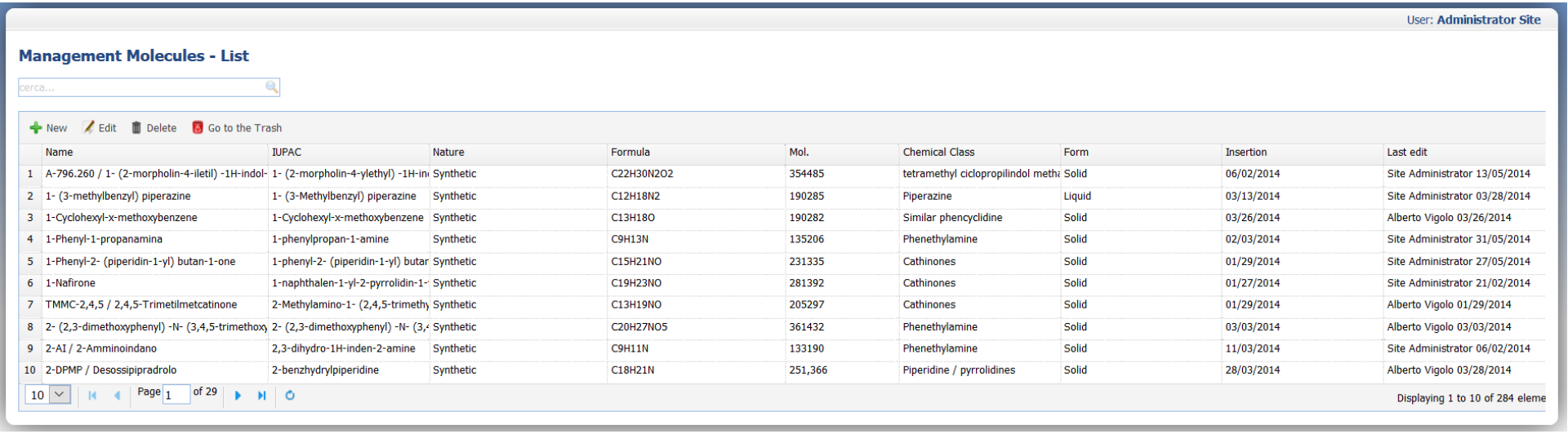
File upload

State reporting:

- Monitoring
- Successfully
- Archiving

Text:


User: Administrator Site
Home page
Data entry
Consultation
Entering for substance
Entering for clinical case
Entering for single substance
Reporting standards
Configurations



User: **Administrator Site**

Management Molecules - List

cerca...

New | Edit | Delete | Go to the Trash

	Name	IUPAC	Nature	Formula	Mol.	Chemical Class	Form	Insertion	Last edit
1	A-796.260 / 1- (2-morpholin-4-iletil) -1H-indol-	1- (2-morpholin-4-ylethyl) -1H-in	Synthetic	C22H30N2O2	354485	tetramethyl ciclopropilindol metha	Solid	06/02/2014	Site Administrator 13/05/2014
2	1- (3-methylbenzyl) piperazine	1- (3-Methylbenzyl) piperazine	Synthetic	C12H18N2	190285	Piperazine	Liquid	03/13/2014	Site Administrator 03/28/2014
3	1-Cyclohexyl-x-methoxybenzene	1-Cyclohexyl-x-methoxybenzene	Synthetic	C13H18O	190282	Similar phencyclidine	Solid	03/26/2014	Alberto Vigolo 03/26/2014
4	1-Phenyl-1-propanamina	1-phenylpropan-1-amine	Synthetic	C9H13N	135206	Phenethylamine	Solid	02/03/2014	Site Administrator 31/05/2014
5	1-Phenyl-2- (piperidin-1-yl) butan-1-one	1-phenyl-2- (piperidin-1-yl) butar	Synthetic	C15H21NO	231335	Cathinones	Solid	01/29/2014	Site Administrator 27/05/2014
6	1-Nafirone	1-naphthalen-1-yl-2-pyrrolidin-1-	Synthetic	C19H23NO	281392	Cathinones	Solid	01/27/2014	Site Administrator 21/02/2014
7	TMMC-2,4,5 / 2,4,5-Trimetilmetcatinone	2-Methylamino-1- (2,4,5-trimethy	Synthetic	C13H19NO	205297	Cathinones	Solid	01/29/2014	Alberto Vigolo 01/29/2014
8	2- (2,3-dimethoxyphenyl) -N- (3,4,5-trimethox	2- (2,3-dimethoxyphenyl) -N- (3,	Synthetic	C20H27NO5	361432	Phenethylamine	Solid	03/03/2014	Alberto Vigolo 03/03/2014
9	2-AI / 2-Amminoindano	2,3-dihydro-1H-inden-2-amine	Synthetic	C9H11N	133190	Phenethylamine	Solid	11/03/2014	Site Administrator 06/02/2014
10	2-DPMP / Desossipipradrolo	2-benzhydrylpiperidine	Synthetic	C18H21N	251,366	Piperidine / pyrrolidines	Solid	28/03/2014	Alberto Vigolo 03/28/2014

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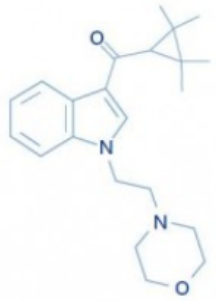
Displaying 1 to 10 of 284 eleme

Management Molecules - Edit

General data | Chemical / physical properties | Safety | Pharmacokinetics / metabolism | Information laboratoristiche literature | Pharmacology



Listing date * : 06 gg 02 mm 2014 yyyy

Common name / acronym molecule: A-796,260/1-(2-Morfolin-4-iletil)-1H-indol-3-il]-(2,2,3,3

Systematic name / IUPAC: 1-(2-morpholin-4-ylethyl)-1H-indol-3-yl]-(2,2,3,3-tetran

Stereochemistry:

Synonyms: A-796,260

Brand:

Slang:

CAS

Freeform 895155 - 26 - 7

Salt
Hydrochloride: - -
Sulphate: - -
Other: - -

Nature of the substance

(•) Synthetic

Summary notes:

( ) Yes ( ) No

Description:

( ) Natural

Name of the plant of

Natural

Name of the plant of origin:

Family:

Gender:

Species:

Synonyms:

Provenance:

Other active:

Chemical Class: tetrametil ciclopropilindol me

Other: (specify)

Pharmacological class (ATC classification): Cannabinoide

Other: (specify)

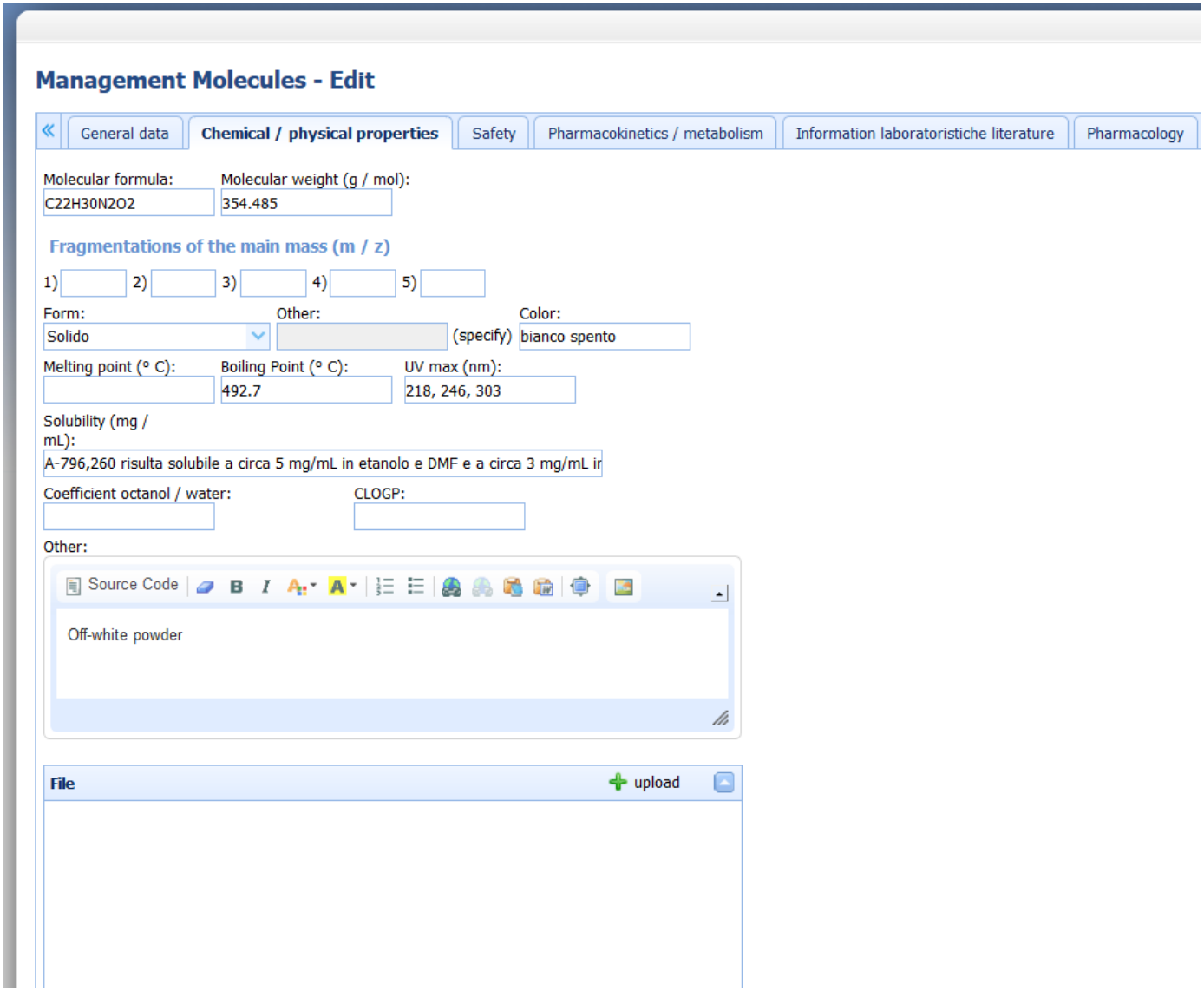
Other primary information:

Source Code

The A-796.260 is a synthetic cannabinoid type tetramethyl ciclopropilindolo, with the cannabinoid receptor agonist activity, developed by Abbott Laboratories. And 'structurally related analogues UR-144 and 5FUR-144 already reported by the European, and like these is not controlled in Europe.

File upload

Save Cancel


Management Molecules - Edit
General data
Chemical / physical properties
Safety
Pharmacokinetics / metabolism
Information laboratoristiche literature
Pharmacology
Molecular formula:
C22H30N2O2
Molecular weight (g / mol):
354.485
Fragmentations of the main mass (m / z)
1)
2)
3)
4)
5)
Form:
Solido
Other:
(specify)
Color:
bianco spento
Melting point (° C):
Boiling Point (° C):
492.7
UV max (nm):
218, 246, 303
Solubility (mg / mL):
A-796,260 risulta solubile a circa 5 mg/mL in etanolo e DMF e a circa 3 mg/mL ir
Coefficient octanol / water:
CLOGP:
Other:
Source Code
Off-white powder
File
upload

Management Molecules - Edit

General data | Chemical / physical properties | **Safety** | Pharmacokinetics / metabolism | Information laboratoristiche literature | Pharmacology | Toxicological information | Clinical observations from the literature | Emergency treatment literature | Legal Status | Production use, distribution

Person

Risk phrases R

- [ ] R1 - Explosive when dry
- [ ] R 2 - Risk of explosion by shock, friction, fire or other sources of ignition
- [ ] R3 - Extreme risk of explosion by shock, friction, in the presence of fire or other sources of ignition
- [ ] R 4 - Forms very sensitive explosive metallic compounds
- [ ] R 5 - Risk of explosion in the presence of heat
- [ ] R 6 - Risk of explosion in contact or not with the air
- [ ] R7 - May cause fire
- [ ] R8 - Promotes inflammation of combustible substances
- [ ] R9 - May explode composing with combustibles
- [ ] R10 - Flammable
- [ ] R11 - Highly flammable
- [ ] R12 - Extremely flammable
- [ ] R13 - extremely flammable liquefied gas
- [ ] R14 - Reacts violently with water
- [ ] R15 - Contact with water liberates highly flammable gases
- [ ] R16 - May explode composing with oxidizing substances
- [ ] R17 - Spontaneously flammable in air
- [ ] R18 - In use, may form explosive / flammable.
- [ ] R19 - May form explosive peroxides
- [ ] R20 - Harmful by inhalation
- [ ] R21 - Harmful in contact with skin
- [ ] R22 - Harmful if swallowed
- [ ] R23 - Toxic by inhalation
- [ ] R24 - Toxic in contact with skin
- [ ] R25 - Harmful if swallowed
- [ ] R26 - Very toxic by inhalation
- [ ] R27 - Very toxic in contact with skin
- [ ] R28 - Very toxic if swallowed
- [ ] R29 - Contact with water releases toxic gases
- [ ] R30 - Can become highly flammable in use
- [ ] R31 - Contact with acids liberates toxic gas
- [ ] R32 - Contact with acids liberates very toxic gas
- [ ] R33 - Danger of cumulative effects
- [ ] R34 - Causes burns
- [ ] R35 - Povoca severe burns
- [ ] R36 - Irritating to eyes
- [ ] R37 - Irritating to respiratone.
- [ ] R38 - Irritating to skin.
- [ ] R39 - Danger of very serious irreversible effects
- [ ] R40 - Possible risk of cancer - Insufficient proof
- [ ] R41 - Risk of serious damage to eyes
- [ ] R42 - May cause sensitization by inhalation
- [ ] R43 - May cause sensitization by skin contact
- [ ] R44 - Risk of explosion if heated under confinement
- [ ] R45 - May cause cancer
- [ ] R46 - May cause heritable genetic damage
- [ ] R48 - Risk of serious damage to health by prolonged exposure
- [ ] R49 - May cause cancer by inhalation
- [ ] R50 - Very toxic to aquatic organisms
- [ ] R51 - Toxic to aquatic organisms
- [ ] R52 - Harmful to aquatic organisms
- [ ] R53 - May cause long-term adverse effects in the aquatic environment
- [ ] R54 - Toxic to flora
- [ ] R55 - Toxic to fauna
- [ ] R56 - Toxic to soil organisms
- [ ] R57 - Toxic to bees
- [ ] R58 - May cause long-term adverse effects in the environment
- [ ] R59 - Dangerous for the ozone layer
- [ ] R60 - May impair fertility
- [ ] R61 - May cause harm to unborn child
- [ ] R62 - Possible risk of impaired fertility
- [ ] R63 - Possible risk of harm to the unborn child
- [ ] R64 - May cause harm to breastfed babies
- [ ] R65 - Harmful: May cause lung damage if swallowed
- [ ] R66 - Repeated exposure may cause skin dryness or cracking skin
- [ ] R67 - vapors may cause drowsiness
- [ ] R68 - Possible risk of irreversible effects
- [ ] R14 / 15 - Reacts violently with water, liberating extremely flammable gases
- [ ] R15 / 21 - Contact with water liberates toxic, extremely flammable
- [ ] R20 / 21 - Harmful by inhalation and skin contact
- [ ] R20 / 22 - Harmful if swallowed
- [x] R20 / 21/22 - Harmful by inhalation, in contact with skin and if swallowed
- [ ] R21 / 22 - Harmful in contact with skin and if swallowed
- [ ] R23 / 24 - Toxic by inhalation and skin contact.
- [ ] R23 / 25 - Toxic by inhalation and ingestion
- [ ] R23 / 24/25 - Toxic by inhalation, in contact with skin and if swallowed
- [ ] R24 / 25 - Toxic in contact with skin and if swallowed
- [ ] R26 / 27 - Very toxic by inhalation and skin contact
- [ ] R26 / 28 - Very toxic by inhalation and ingestion
- [ ] R26 / 27/28 - Very toxic by inhalation, in contact with skin and if swallowed
- [ ] R27 / 28 - Very toxic in contact with skin and if swallowed
- [ ] R36 / 37 - Irritating to eyes and respiratory system
- [ ] R36 / 38 - Irritating to eyes and skin
- [x] R36 / 37/38 - Irritating to eyes, respiratory system and skin

Safety Phrases S

- [ ] S1 - Keep locked
- [ ] S2 - Keep out of reach of children
- [ ] S3 - Store cool
- [ ] S4 - Keep away from housing
- [ ] S5 - Keep under ... (appropriate liquid to be specified by the manufacturer)
- [ ] S6 - Keep under ... (inert gas to be specified by the manufacturer)
- [ ] S7 - Keep container tightly closed
- [ ] S8 - Keep container dry
- [ ] S9 - Keep container in a well ventilated place
- [ ] S12 - Do not keep the container sealed
- [ ] S13 - Keep away from food, drink and animal feed
- [ ] S14 - Keep away from ... (incompatible materials to be specified by the manufacturer)
- [ ] S15 - Keep away from heat
- [ ] S16 - Keep away from sources of ignition - No smoking
- [ ] S17 - Keep away from combustible material
- [ ] S18 - Handle and open container with care
- [ ] S20 - Do not eat or drink while handling
- [ ] S21 - Do not smoke
- [ ] S22 - Do not breathe dust
- [ ] S23 - Do not breathe gas / fumes / vapors and aerosols (appropriate term to be specified by the manufacturer)
- [ ] S24 - Avoid contact with skin
- [ ] S25 - Avoid contact with eyes
- [ ] S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
- [ ] S27 - Take off immediately all contaminated clothing
- [ ] S28 - After contact with skin, wash immediately with plenty of ... (to be specified by the manufacturer)
- [ ] S29 - Do not empty into drains
- [ ] S30 - Never add water to this product
- [ ] S33 - Avoid static discharges
- [ ] S34 - Avoid shock and friction
- [ ] S35 - Do not dispose of this material and its container must be with proper precautions
- [ ] S36 - Wear suitable protective clothing
- [ ] S37 - Wear suitable gloves
- [ ] S38 - In case of insufficient ventilation, wear suitable respiratory equipment
- [ ] S39 - Wear eye and face
- [ ] S40 - To clean the floor and all objects contaminated by this material use ... (to be specified by the manufacturer)
- [ ] S41 - In case of fire and / or explosion do not breathe fumes
- [ ] S42 - During fumigation and spraying wear suitable respiratory equipment (appropriate term to be specified by the manufacturer)
- [ ] S43 - In case of fire use ... (fighting equipment to be specified by the manufacturer. If water increases the risk add: "Never use water")
- [ ] S44 - If you feel unwell seek medical advice (if possible, show the label)
- [ ] S45 - In case of accident or if you feel unwell seek medical advice immediately (if possible, show the label)
- [ ] S46 - If swallowed, seek medical advice immediately and show this container or label
- [ ] S47 - Store at temperatures not exceeding ... °C (to be specified by the manufacturer)
- [ ] S48 - Keep wetted with ... (appropriate material to be specified by the manufacturer)
- [ ] S49 - Keep only in the original container
- [ ] S50 - Do not mix with ... (to be specified by the manufacturer)
- [ ] S51 - Use only in well-ventilated
- [ ] S52 - Do not use on large surface areas
- [ ] S53 - Avoid exposure - obtain special instructions before use
- [ ] S54 - Obtain the consent of pollution control authorities before discharging to treatment plants wastewater
- [ ] S55 - Use best available treatment techniques before discharge into drains or the aquatic environment
- [ ] S56 - Do not discharge into drains or the environment; dispose to an authorized waste collection point
- [ ] S57 - Use appropriate container to avoid environmental contamination
- [ ] S58 - Dispose of as hazardous waste
- [ ] S59 - Refer to manufacturer / supplier for information on recovery / recycling
- [ ] S60 - This material and / or its container must be disposed of as hazardous waste
- [ ] S61 - Avoid release to the environment. Refer to special instructions / safety data sheets
- [ ] S62 - If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label
- [ ] S63 - If swallowed, inhaled, remove the victim from the contaminated area and keep at rest
- [ ] S64 - If swallowed, rinse mouth with water (only if the person is conscious)
- [ ] S1 / 2 - Keep locked up and out of reach of children
- [ ] S3 / 7 - Keep container tightly closed in a cool
- [ ] S3 / 9/14 - Store in a cool, well-ventilated place away from ... (incompatible materials to be specified by the manufacturer)
- [ ] S3 / 9/14/49 - Keep only in the original container in a cool, well-ventilated place away from ... (incompatible materials to be specified by the manufacturer)
- [ ] S3 / 9/49 - Keep only in the original container in a cool, well-ventilated
- [ ] S3 / 14 - Store in a cool place away from ... (incompatible materials to be specified by the manufacturer)
- [ ] S7 / 8 - Keep container tightly closed and dry
- [ ] S 7/9 - Keep container tightly closed and in a well-ventilated
- [ ] S7 / 47 - Keep container tightly closed and at temperature not exceeding ... °C (to be specified by the manufacturer)
- [ ] S20 / 21 - Do not eat, drink or smoke while handling
- [ ] S24 / 25 - Avoid contact with eyes and skin
- [ ] S27 / 28 - After contact with skin, immediately remove all contaminated clothing and wash immediately with .... (to be specified by the manufacturer)
- [ ] S29 / 35 - Do not empty into drains; dispose of this material and its container must be with proper precautions
- [ ] S29 / 56 - Do not empty into drains; dispose of this material and its container at a collection
- [ ] S36 / 37 - Wear suitable protective clothing and gloves
- [ ] S36 / 37/39 - Wear suitable protective clothing, gloves and eye / face protection

Environment (m / z)

Stability / reactivity

- [x] Not known
- [ ] Stable under normal conditions
- [ ] Unstable in the event of excessive heat,
- [ ] Unstable air
- [ ] Unstable in water
- [ ] Unstable in the event of ignition sources
- [ ] Unstable on exposure to moisture
- [ ] Sensitive to light
- [ ] It reacts with oxidizing agents
- [ ] It reacts with reducing agents
- [ ] It reacts with acids
- [ ] It reacts with alkalis
- [ ] It reacts with metals
- [ ] Other

Persistence and degradability

- [x] Not known
- [ ] Readily biodegradable
- [ ] Not readily biodegradable
- [ ] Other

Storage conditions

- [x] Unknown
- [ ] Immagazinare in cool
- [ ] Keep in tightly closed container
- [ ] Store in a cool and breezy
- [ ] Keep away from heat
- [ ] Store at room temperature
- [ ] Store at low temperatures
- [ ] Other

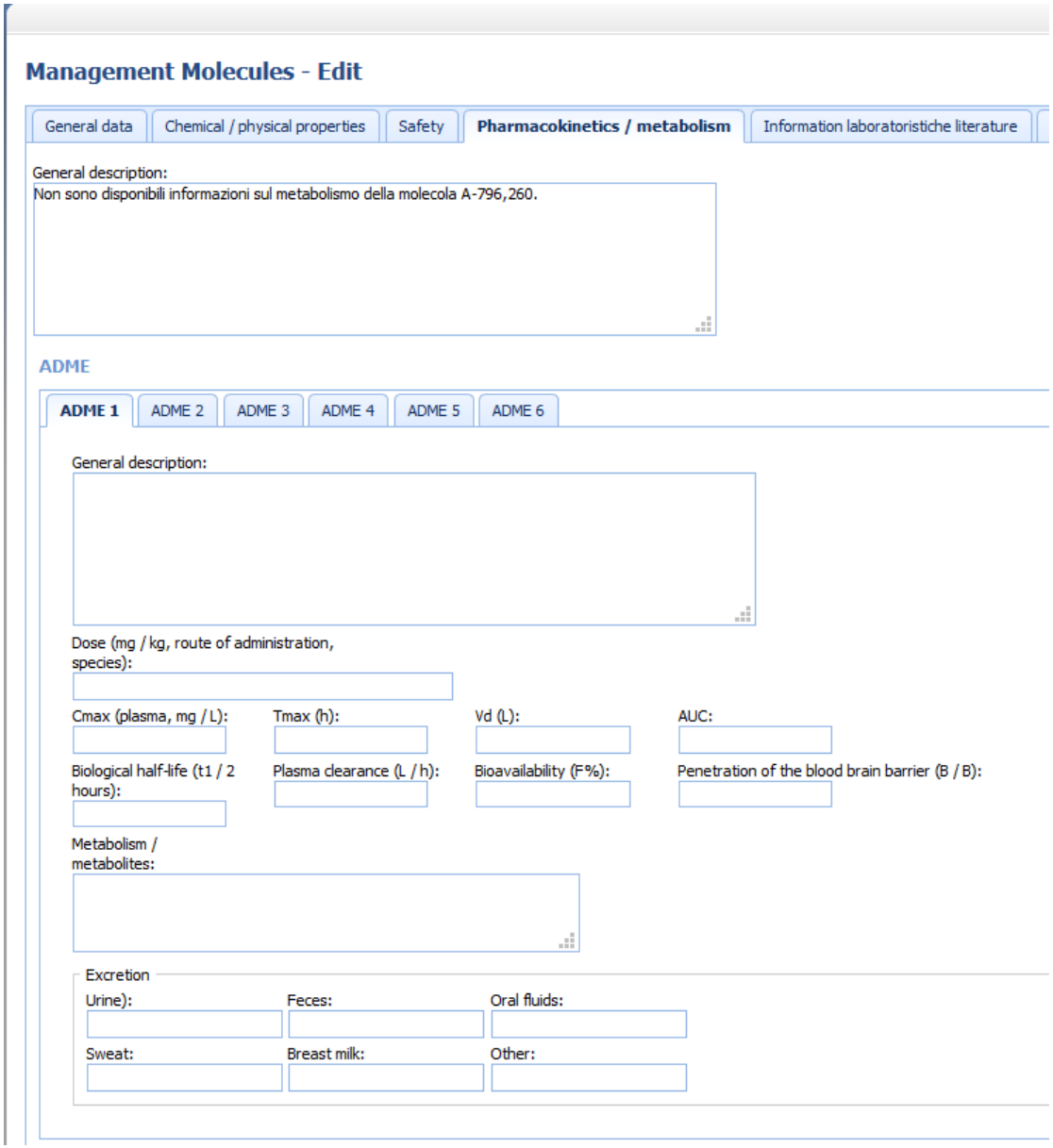
Methods of disposal

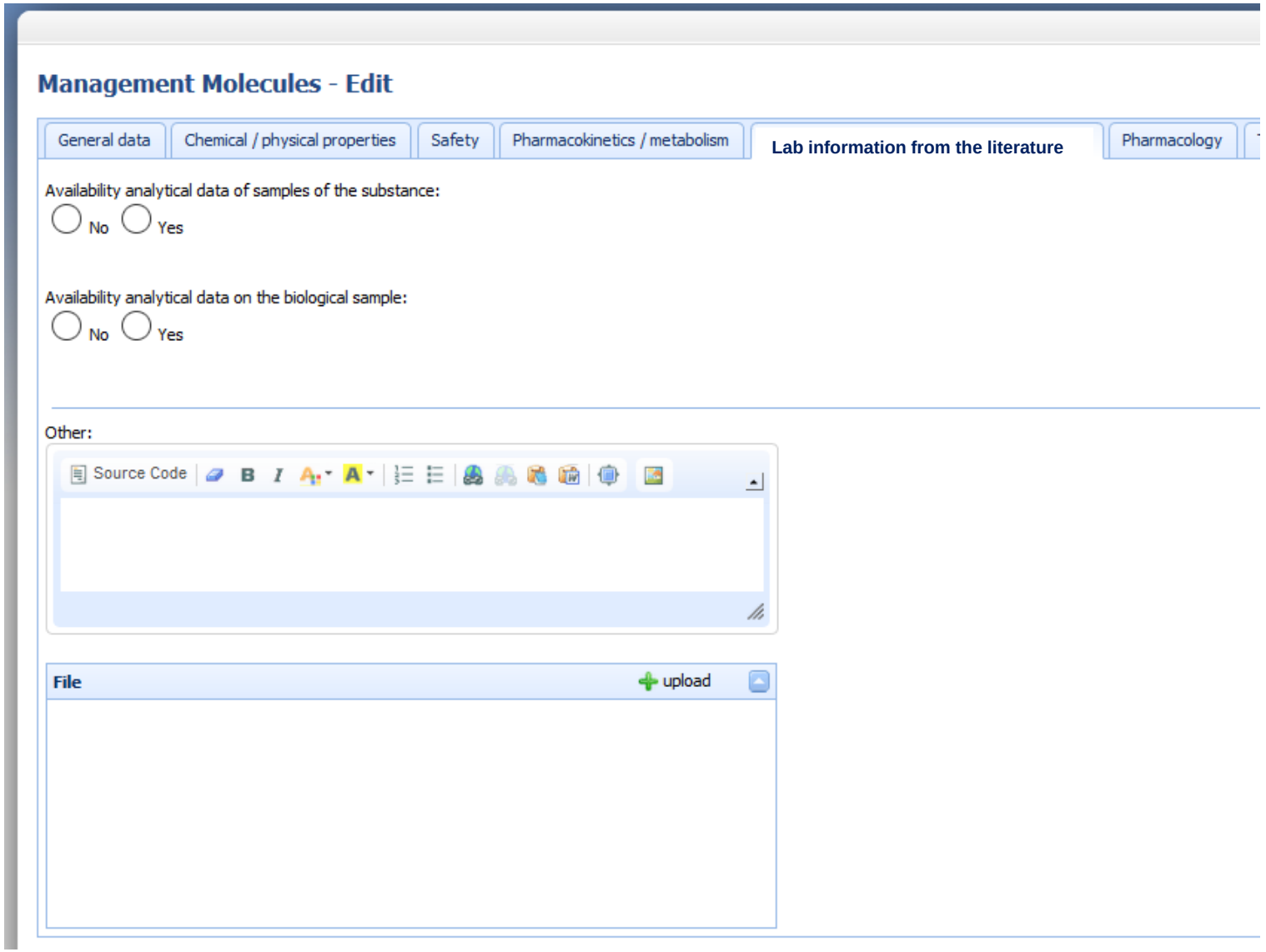
- [x] Unknown
- [ ] Seal and dispose of chemical reagent
- [ ] Dispose under current legislation
- [ ] Other

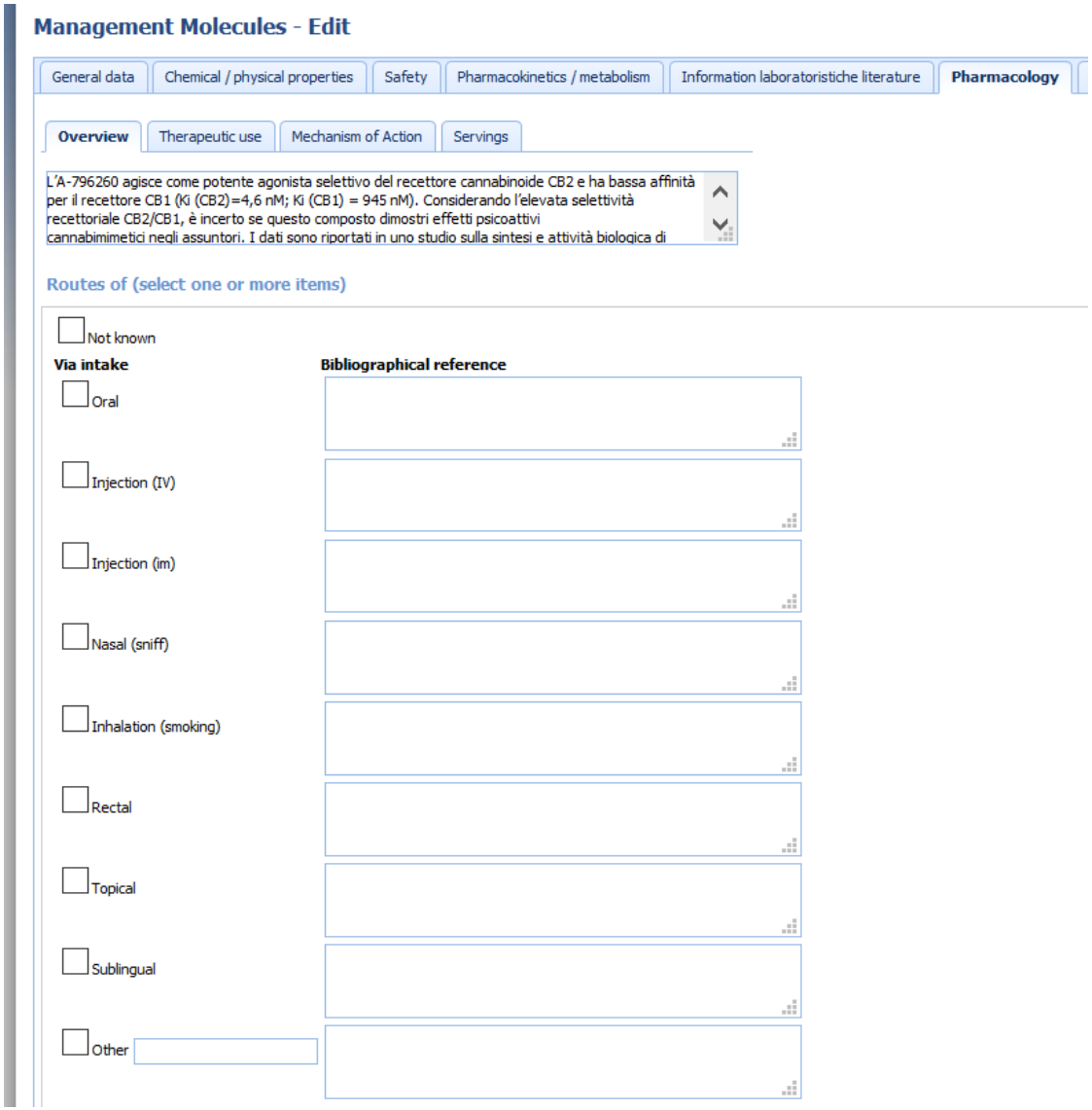
Other:

Source Code

File upload


Management Molecules - Edit
General data
Chemical / physical properties
Safety
Pharmacokinetics / metabolism
Information laboratoristiche literature
General description:
Non sono disponibili informazioni sul metabolismo della molecola A-796,260.
ADME
ADME 1
ADME 2
ADME 3
ADME 4
ADME 5
ADME 6
General description:
Dose (mg / kg, route of administration, species):
Cmax (plasma, mg / L):
Tmax (h):
Vd (L):
AUC:
Biological half-life (t1 / 2 hours):
Plasma clearance (L / h):
Bioavailability (F%):
Penetration of the blood brain barrier (B / B):
Metabolism / metabolites:
Excretion
Urine):
Feces:
Oral fluids:
Sweat:
Breast milk:
Other:


Management Molecules - Edit
General data
Chemical / physical properties
Safety
Pharmacokinetics / metabolism
Lab information from the literature
Pharmacology
Availability analytical data of samples of the substance:
No
Yes
Availability analytical data on the biological sample:
No
Yes
Other:
Source Code
File
upload



Management Molecules - Edit

General data | Chemical / physical properties | Safety | Pharmacokinetics / metabolism | Information laboratoristiche literature | **Pharmacology**

Overview | Therapeutic use | Mechanism of Action | Servings

L'A-796260 agisce come potente agonista selettivo del recettore cannabinoide CB2 e ha bassa affinità per il recettore CB1 (Ki (CB2)=4,6 nM; Ki (CB1) = 945 nM). Considerando l'elevata selettività recettoriale CB2/CB1, è incerto se questo composto dimostri effetti psicoattivi cannabimimetici negli assuntori. I dati sono riportati in uno studio sulla sintesi e attività biologica di

Routes of (select one or more items)

☐ Not known

Via intake	Bibliographical reference
☐ Oral	
☐ Injection (IV)	
☐ Injection (im)	
☐ Nasal (sniff)	
☐ Inhalation (smoking)	
☐ Rectal	
☐ Topical	
☐ Sublingual	
☐ Other	

Peak of action and duration of effects:

Drug interactions:

Addiction

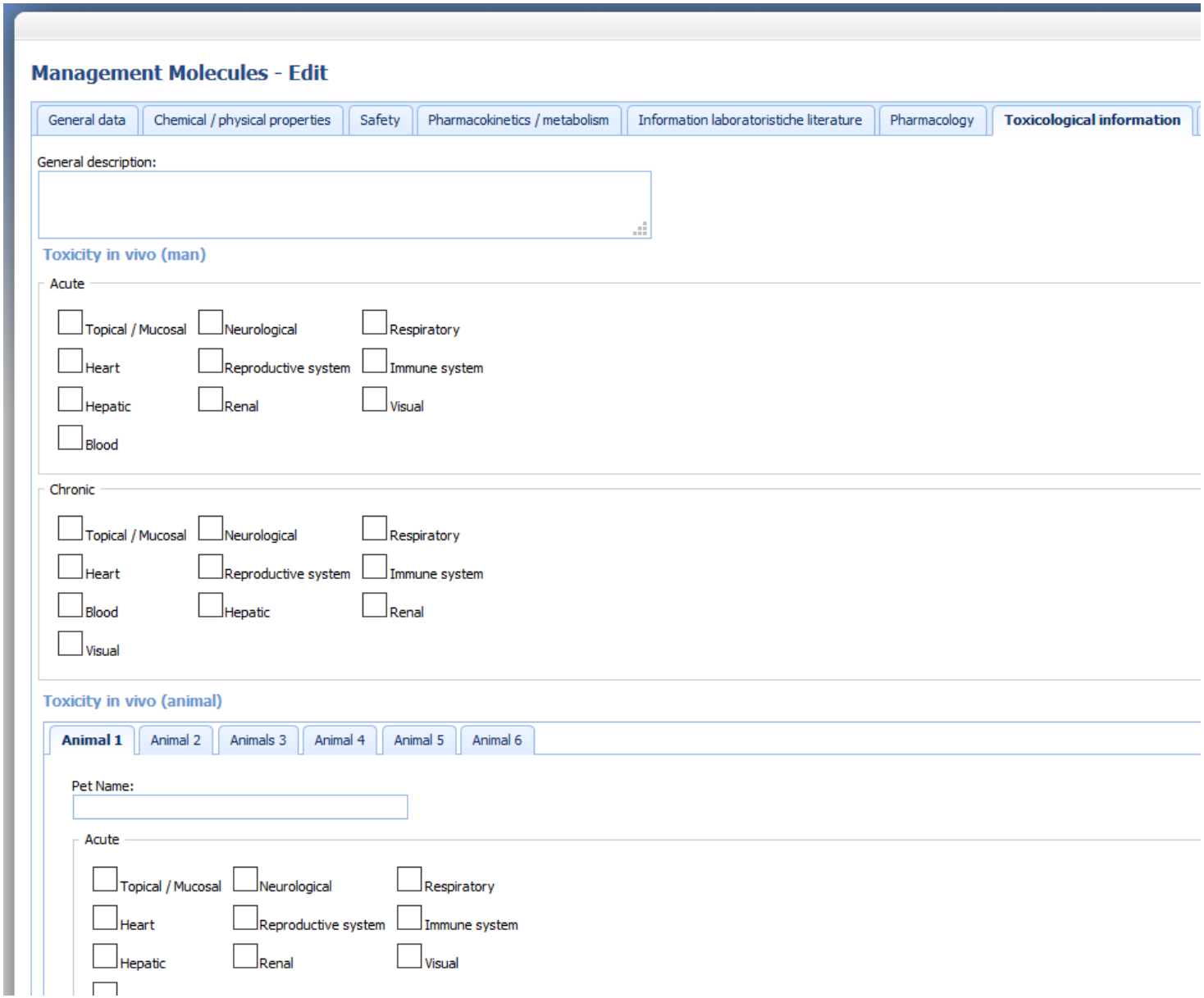
- ○ No
- ○ Yes, sure
- ○ Yes, possible
- ○ Not known
- ○ Other

Tolerance

- ○ No
- ○ Yes, sure
- ○ Yes, possible
- ○ Not known
- ○ Other

Side effects

- ○ No
- ○ Yes, sure
- ○ Yes, possible
- ○ Not known
- ○ Other


Management Molecules - Edit
General data
Chemical / physical properties
Safety
Pharmacokinetics / metabolism
Information laboratoristiche literature
Pharmacology
Toxicological information
General description:
Toxicity in vivo (man)
Acute
Topical / Mucosal
Neurological
Respiratory
Heart
Reproductive system
Immune system
Hepatic
Renal
Visual
Blood
Chronic
Topical / Mucosal
Neurological
Respiratory
Heart
Reproductive system
Immune system
Blood
Hepatic
Renal
Visual
Toxicity in vivo (animal)
Animal 1
Animal 2
Animals 3
Animal 4
Animal 5
Animal 6
Pet Name:
Acute
Topical / Mucosal
Neurological
Respiratory
Heart
Reproductive system
Immune system
Hepatic
Renal
Visual

Toxicity in vivo (animal)

Animal 1 | Animal 2 | Animals 3 | Animal 4 | Animal 5 | Animal 6

Pet Name:

Acute

- ☐ Topical / Mucosal
- ☐ Neurological
- ☐ Respiratory
- ☐ Heart
- ☐ Reproductive system
- ☐ Immune system
- ☐ Hepatic
- ☐ Renal
- ☐ Visual
- ☐ Blood

Chronic

- ☐ Topical / Mucosal
- ☐ Neurological
- ☐ Respiratory
- ☐ Heart
- ☐ Reproductive system
- ☐ Immune system
- ☐ Blood
- ☐ Hepatic
- ☐ Renal
- ☐ Visual

Possible pathways of human exposure

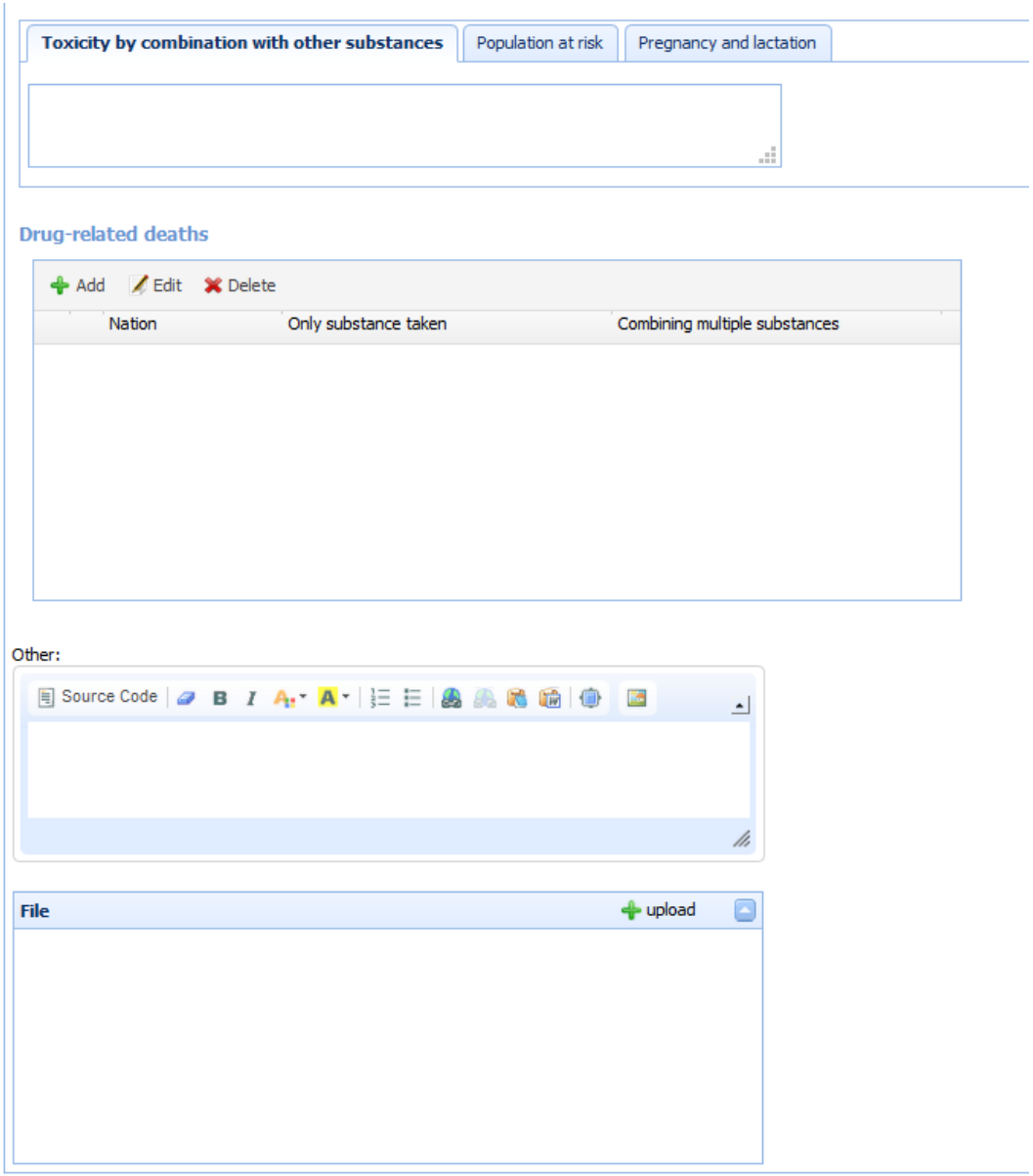
- ☐ Airway
- ☐ Skin contact
- ☐ Parenteral
- ☐ Nursing
- ☐ Other

Toxicity by combination with other substances | Population at risk | Pregnancy and lactation

Drug-related deaths

Add | Edit | Delete

Nation	Only substance taken	Combining multiple substances


Toxicity by combination with other substances
Population at risk
Pregnancy and lactation
Drug-related deaths
Add
Edit
Delete
Nation
Only substance taken
Combining multiple substances
Other:
Source Code
File
upload

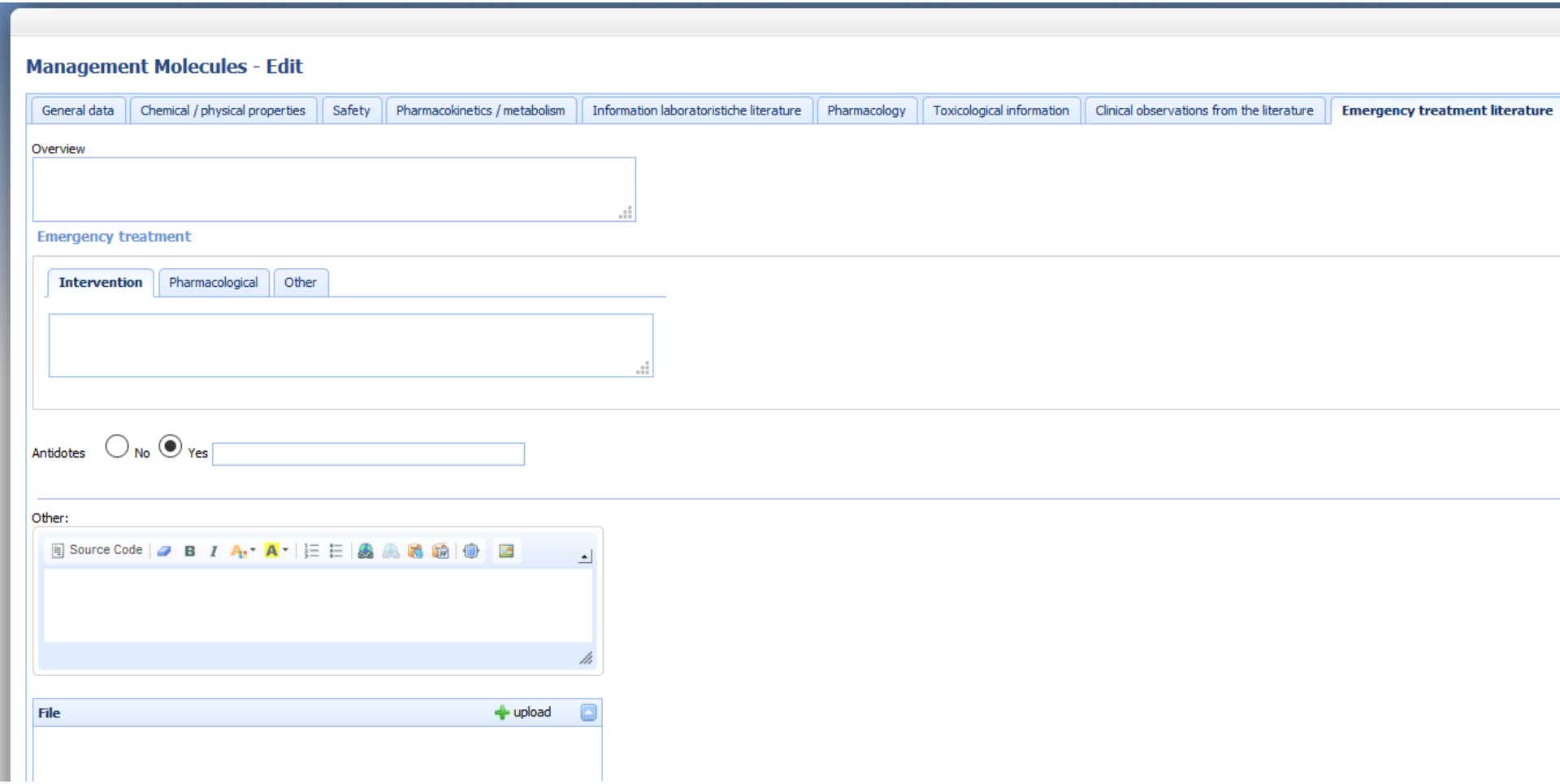
Management Molecules - Edit

General data | Chemical / physical properties | Safety | Pharmacokinetics / metabolism | Information laboratoristiche literature | Pharmacology | Toxicological information | **Clinical observations from the literature**

Overview

Signs and symptoms reported in the literature (select one or more items)

☐ Metabolic acidosis	☐ Aggression	☐ ACC - Circulatory Arrest Cardio	☐ Agitation / excitement	☐ Agranulocytosis
☐ Algia	☐ Hallucinations / delirium	☐ Changes in visual acuity / nystagmus	☐ Amnesia	☐ Anemia
☐ Anisocoria	☐ Anorectic	☐ Anxiety	☐ Apnea	☐ Arrhythmia
☐ Respiratory arrest	☐ Ataxia	☐ Panic attacks	☐ Bradycardia	☐ Bradypnea
☐ Chills	☐ Bruxism	☐ Palpitations	☐ Cardiotoxicity	☐ Catatonia
☐ Blindness	☐ Headache	☐ Clonie	☐ Disseminated intravascular coagulation (DIC)	☐ Cardiopulmonary collapse
☐ Coma	☐ Bewilderment	☐ Seizures	☐ Corrosion of the mucous membranes	☐ Depression
☐ Respiratory depression	☐ Diarrhea	☐ Dysarthria	☐ Disorientation	☐ Dyspnea
☐ Dystonia	☐ Distubi lower urinary tract	☐ Sleep disorders	☐ Chest pain	☐ Abdominal pains
☐ Widespread pain	☐ Muscle aches	☐ Brain edema	☐ Peripheral edema	☐ Pulmonary edema
☐ Hematemesis	☐ Migraine	☐ Cerebral hemorrhage	☐ Encephalopathy	☐ Hepatotoxicity
☐ Epigastralgia	☐ Epistaxis	☐ Euphoria	☐ Fever	☐ Flushing
☐ Photophobia	☐ Stroke	☐ Unconsciousness	☐ Myocardial infarction	☐ Cerebral insufficiency
☐ Kidney failure	☐ Hyperglycemia	☐ Hyperreflexia	☐ Hypertension	☐ Hyperthermia
☐ Overtone	☐ Hypoglycemia	☐ Hypotension	☐ Hypothermia	☐ Eye irritation
☐ Lachrymation	☐ Leukocytosis	☐ General malaise	☐ Mydriasis	☐ Myoclonus
☐ Miosis	☐ Nausea / emesis	☐ Nephrotoxicity	☐ Neurotoxicity	☐ Nystagmus
☐ Horizontal nystagmus	☐ Vertical nystagmus	☐ Stupor	☐ Palpitations	☐ Paresthesia
☐ Goose bumps	☐ Psychosis	☐ Rhabdomyolysis	☐ Rush	☐ Twitching
☐ Salivation	☐ Sedation	☐ Anaphylactic shock	☐ Gastrointestinal symptoms	☐ Drowsiness
☐ Drowsiness	☐ Deafness	☐ Constipation	☐ Sweating	☐ Tachycardia
☐ Quadriplegia	☐ Cough	☐ Tremor spread	☐ Trembling legs	☐ Tremor / dyskinesia
☐ Lockjaw	☐ Flushes	☐ Dizziness	☐ Watchful	☐ Xerostomia


Management Molecules - Edit
General data
Chemical / physical properties
Safety
Pharmacokinetics / metabolism
Information laboratoristiche literature
Pharmacology
Toxicological information
Clinical observations from the literature
Emergency treatment literature
Overview
Emergency treatment
Intervention
Pharmacological
Other
Antidotes
No
Yes
Other:
Source Code
File
upload

Management Molecules - Edit

General data | Chemical / physical properties | Safety | Pharmacokinetics / metabolism | Information laboratoristiche literature | Pharmacology | Toxicological information | Clinical observations from the literature | Emergency treatment literature | **Legal Status** | Production use, distribution

Under control

Add | Edit | Delete

	Nation	Normative reference	File
1	Australia		
2	Belgium		
3	Russia		

Not under control

Add | Delete

	Nation
1	Italy
2	Lithuania

Management Molecules - Edit

General data | Chemical / physical properties | Safety | Pharmacokinetics / metabolism | Information laboratoristiche literature | Pharmacology | Toxicological information | Clinical observations from the literature | Emergency treatment literature | Legal Status | **Production use, distribution**

Overview | Motodi synthesis and / or production | Precursors | Impurities | Combinations with other substances

Circumstances and environments of consumption (select one or more items)

- ☐ Disco
- ☐ Rave Party
- ☐ Private party
- ☐ Private house
- ☐ Public gardens
- ☐ Concert
- ☐ School
- ☐ Sports field
- ☐ Other
- ☐ Not known

Features of the consumer population)

- ☐ Young
- ☐ Adults
- ☐ Other

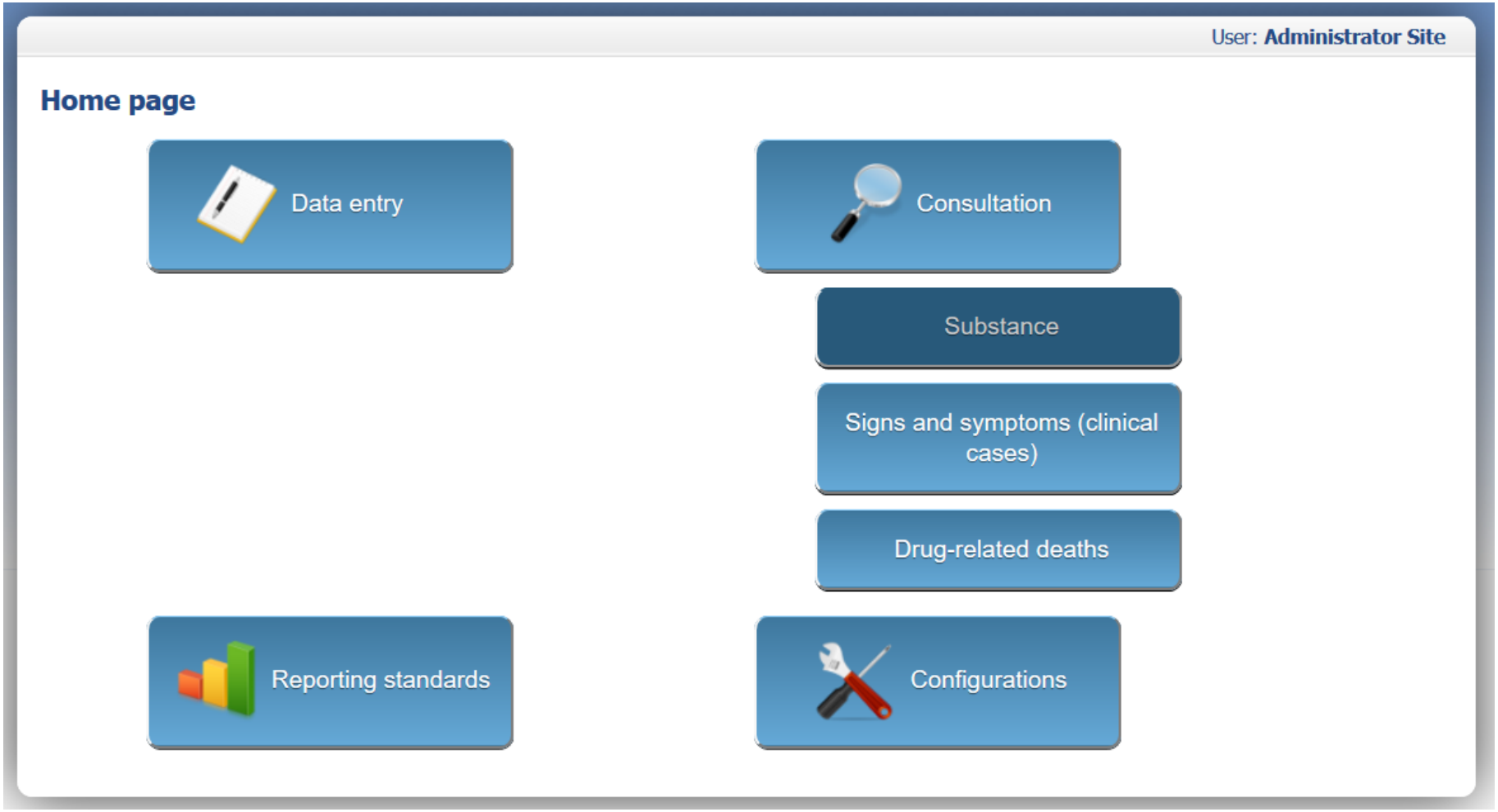
Production: ○ Large scale ○ Small scale ○ Not known

Traffic: ○ Large scale ○ Small scale ○ Not known

Distribution: ○ Large scale ○ Small scale ○ Not known

Internet availability is: ○ Yes ○ No

Retail price: Wholesale Price:


User: Administrator Site
Home page
Data entry
Consultation
Substance
Signs and symptoms (clinical cases)
Drug-related deaths
Reporting standards
Configurations

Search queries substances

Query 1 - Search by molecular weight.

Molecular Weight * : Period: from a Signal: tutte Search

Query 2 - Search by fragmentation mass.

Query 3 - Search by empirical formula.

Query 4 - Public reporting for specific molecule.

Query 5 - molecules to specific reporting entity.

Query 6 - Associations of a certain molecule with other molecules.

Query 7 - Public reporting for a particular combination of molecules.

Query 8 - Percentages of active principle for a given molecule.

Query 9 - Molecules for single chemical class.

Query 10 - Molecules for single pharmacological class.

Query 11 - Number seizures, biological samples, samples collected for a given molecule.

Query 12 - Trade names for one or more chemical classes.

Query 13 - Images available for a particular molecule or a particular chemical class.

Search queries substances

Query 1 - Search by molecular weight.

Query 2 - Search by fragmentation mass.

Fragmentation of mass * : Period: from a Signal: tutte Search

Query 3 - Search by empirical formula.

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Query 5 - molecules to specific reporting entity.

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Search queries substances

Query 1 - Search by molecular weight.

Query 2 - Search by fragmentation mass.

Query 3 - Search by empirical formula.

Empirical formula * :

Period: from a

Signal: tutte

Search

Query 4 - Public reporting for specific molecule.

Query 5 - molecules to specific reporting entity.

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Query 13 - Images available for a particular molecule or a particular chemical class.

Query 5 - molecules to specific reporting entity.

Query 6 - Associations of a certain molecule with other molecules.

Query 7 - Public reporting for a particular combination of molecules.

Molecules *

☐ A-796.260 / 1- (2-morpholin-4-iletil) -1H-indol-3-yl] - (2,2,3,3- tetrametilciclopropil) methanone	☐ 1- (3-methylbenzyl) piperazine	☐ 1-Cyclohexyl-x-methoxybenzene	☐ 1-Phenyl-1-propanamina	☐ 1-Phenyl-2- (piperidin-1-yl) butan-1-one
☐ 1-Nafirone	☐ TMMC-2,4,5 / 2,4,5-Trimetilmetcatinone	☐ 2- (2,3-dimethoxyphenyl) -N- (3,4,5-trimethoxybenzyl) etanamina	☐ 2-AI / 2-Amminoindano	☐ 2-DPMP / Desossipipradrolo
☐ 2-FA / 2-Fluoroamfetamina	☐ 2-FMA / 2-Fluoro-N-methyl-amphetamine	☐ 2-FMA / 2-Fluoro-N-methyl-amphetamine	☐ 2-MeO-Ketamine	☐ PEA-2/2-Phenethylamine
☐ 25B-NBOMe	☐ 25D-NBOMe	☐ 25E-NBOMe	☐ 25G-NBOMe	☐ 25H-NBOMe
☐ 25H-NBOMe	☐ 25I-NBOME	☐ 25N-NBOMe	☐ 2C-B	☐ 2C-B-BZP / 4-Bromo-2,5-dimethoxy-1-benzylpiperazine
☐ 2C-C-NBOMe	☐ 2C-C-NBOMe	☐ 2C-E	☐ 2C-E	☐ 2C-G
☐ 2C-H	☐ 2C-N	☐ 3,4-CTMP / 3,4-Diclorometilfenidato	☐ 3,4-CTMP; 3,4-Diclorometilfenidato	☐ 3,4-Diclorometilfenidato
☐ DMMC-3,4 / 3,4-dimethyl-methcathinone	☐ 3- (4-Idrossimetilbenzoil) -1-pentilindolo	☐ 3- (p-methoxybenzoyl) -N-methylindole	☐ 3-Amino-1-phenyl-butane	☐ 3-FMA / 3-fluorometamfetamina
☐ 3-FMC / 3-Fluoro-isometcatinone	☐ 3-FMC / 3-Fluorometcatinone	☐ 3-MeO-PCE	☐ 3-MeO-PCP / 3-Metossifenciclidina	☐ 3-MMC / 3-Metilmetcatinone
☐ 4-AcO-DALT / 4-acetoxy-N, N-diallitriptamina	☐ 4-AcO-DMT	☐ 4-AcO-DPT	☐ 4-APB / 4- (2-Aminopropyl) benzofuran	☐ 4-BMC / Brefedrone
☐ CA-4/4-Cloroamfetamina	☐ 4-EMC / 4-etilmetcatinone	☐ 4-FA / 4-fluoroamfetamina	☐ 4-FA / 4-Fluoroamfetamina	☐ 4-Fluorocatinone
☐ 4-Fluoroefedrina	☐ 4-FMA / 4-Fluorometamfetamina	☐ 4-FMC / Flefedrone	☐ 4-HO-DPT	☐ 4-HTMPIPO / 4-Hydroxy-3,3,4-trimethyl-1-(1-pentyl-1H-indol-3-yl) pentan-1-one
☐ 4-Idrossiamfetamina	☐ 4-MA / 4-methylamphetamine	☐ 4-MBC / Benzedrone	☐ 4-Me-MABP / 4-Metilbufedrone	☐ 4-MEC; 4-metiletcatinone
☐ 4-MeO-alpha-PVP	☐ 4-MeO-PCP / 4-Metossifenciclidina	☐ 4-Metilaminorex 4-methyl derivative	☐ 4-Metilbufedrone, N-benzyl derivative	☐ 4-Metilfendimetrazina
☐ 4-MMA / 4-metilmetamfetamina	☐ 4-MMC / Mephedrone	☐ 5-APB / 5- (2-Aminopropyl) benzofuran	☐ 5-APDB / 5- (2-Aminopropyl) -2,3-diidrobenzofurano	☐ 5-APDI
☐ 5-EAPB	☐ 5-HTP	☐ 5-IAI / 5-Iodo-2-aminoindano	☐ 5-EN / 5- (2-Aminopropyl) indole	☐ 5-MAPB
☐ 5-MeO-DALT	☐ 5-MeO-DPT	☐ 5-MeO-MET	☐ 5F-AB-PINACA	☐ 5F-PB-22
☐ 5F-PB22 / AM-2201 similar carboxylate derived quinolinil	☐ 5FUR-144 / 1- (5-Fluoropentil) -1H-indol-3-yl) (2,2,3,3-tetramethyl-cyclopropyl) methanone	☐ 6-APB / 6- (2-Aminopropyl) benzofuran	☐ 6-APDB / 6- (2-Aminopropyl) -2,3-diidrobenzofurano	☐ A-834.735
☐ A-834.735	☐ A-836.339	☐ AB-001 / JWH-018 derived adamantoil	☐ AB-005 isomer azepanico / (1- (1-Metilazepan-2-yl) -1H-indole-3-yl) (2,2,3,3-tetrametilciclopropil) methanone	☐ AB-005 / [1 - [(1-Methyl-2-piperidinyl) methyl] -1H-indol-3-yl] (2,2,3,3-tetrametilciclopropil) -metanone
☐ AB-FUBINACA	☐ AB-PINACA	☐ ADB-PINACA	☐ ADBICA	☐ AH-7921 / 3,4-Dichloro-N- [(1

Search queries substances

Query 1 - Search by molecular weight.

Query 2 - Search by fragmentation mass.

Query 3 - Search by empirical formula.

Query 4 - Public reporting for specific molecule.

Query 5 - molecules to specific reporting entity.

Query 6 - Associations of a certain molecule with other molecules.

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Query 8 - Percentages of active principle for a given molecule.

Query 9 - Molecules for single chemical class.

Query 10 - Molecules for single pharmacological class.

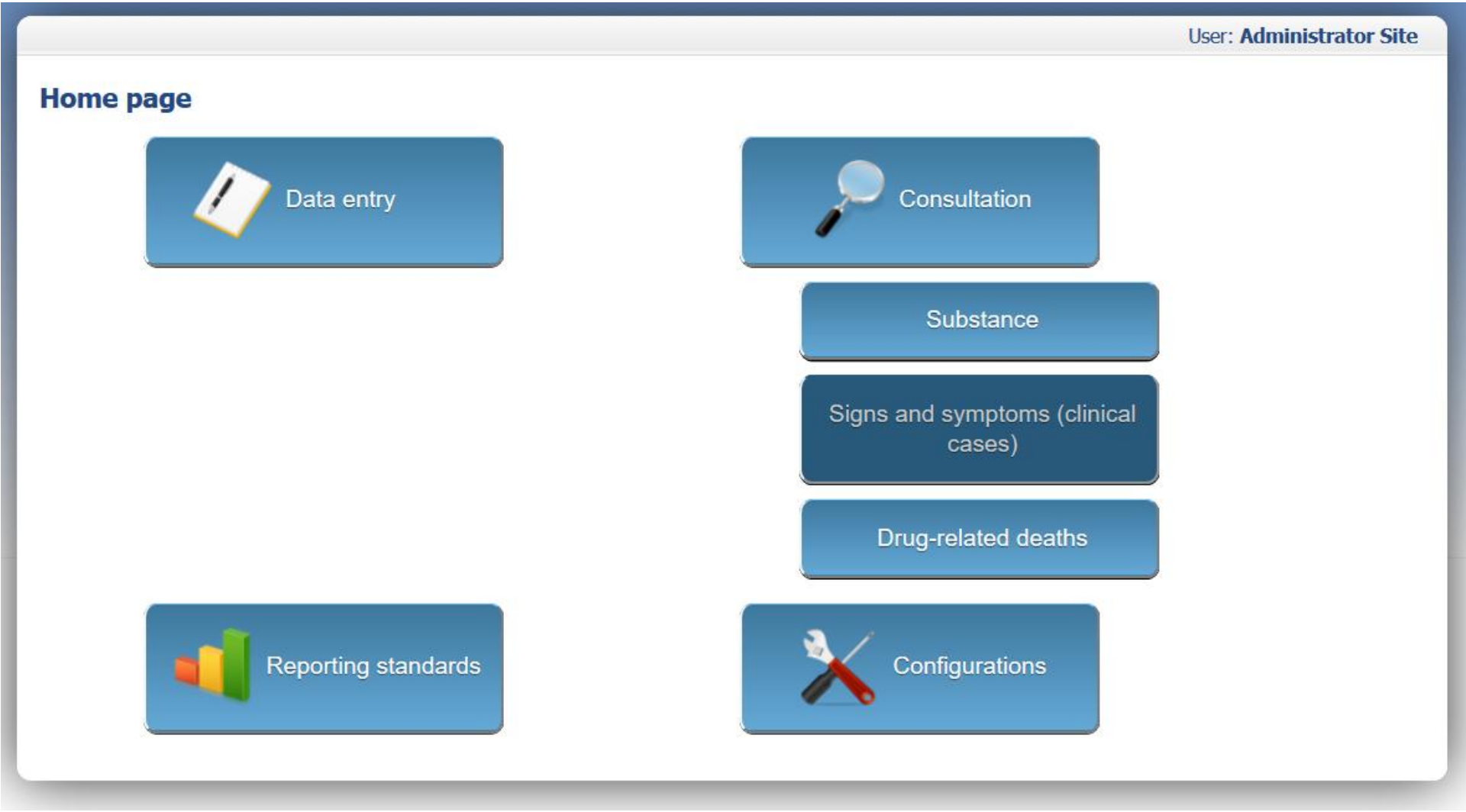
Query 11 - Number seizures, biological samples, samples collected for a given molecule.

Molecule: Period: from a Signal: tutte Search

Query 12 - Trade

Query 13 - Image

Name	IUPAC	Synonyms
A-796.260 / 1- (2-morp	1- (2-morpholin-4-ylethyl) -1	A-796.260
1- (3-methylbenzyl) pip	1- (3-Methylbenzyl) piperazin	1 - [(3-methylphenyl) methy
1-Cyclohexyl-x-methox	1-Cyclohexyl-x-methoxyber	1-Cyclohexyl-x-methoxyber
1-Phenyl-1-propanamin	1-phenylpropan-1-amine	1-phenyl-propyl-amine; alph
1-Phenyl-2- (piperidin-1	1-phenyl-2- (piperidin-1-yl) b	2-piperidino-1-phenylbutan-1
1-Nafirone	1-naphthalen-1-yl-2-pyrrolidi	1- (naphthalen-1-yl) -2- (pyr
TMMC-2,4,5 / 2,4,5-Trin	2-Methylamino-1- (2,4,5-trim	2,4,5-TMMC


User: Administrator Site
Home page
Data entry
Consultation
Substance
Signs and symptoms (clinical cases)
Drug-related deaths
Reporting standards
Configurations

Search query signs and symptoms (clinical cases)

Query 14 - Signs and symptoms of acute poisoning per molecule assumed.

Molecule * : or Chemical Class * : or Drug Class * :

Period: from a Search

Query 15 - treatments carried out after intoxication by a given molecule.

Query 16 - Streets of intake per molecule.

Query 17 - Number of reports by recruitment per molecule.

Query 18 - Number of cases mismatch between reported and assumed molecule molecule detected after analysis.

Query 19 - NEWS Molecules entered into the database according to the signs and symptoms highlighted

Search query signs and symptoms (clinical cases)

Query 14 - Signs and symptoms of acute poisoning per molecule assumed.

Query 15 - treatments carried out after intoxication by a given molecule.

Query 16 - Streets of intake per molecule.

Query 17 - Number of reports by recruitment per molecule.

Molecule * : | Routes of * : Tutte | Period: from a | Search

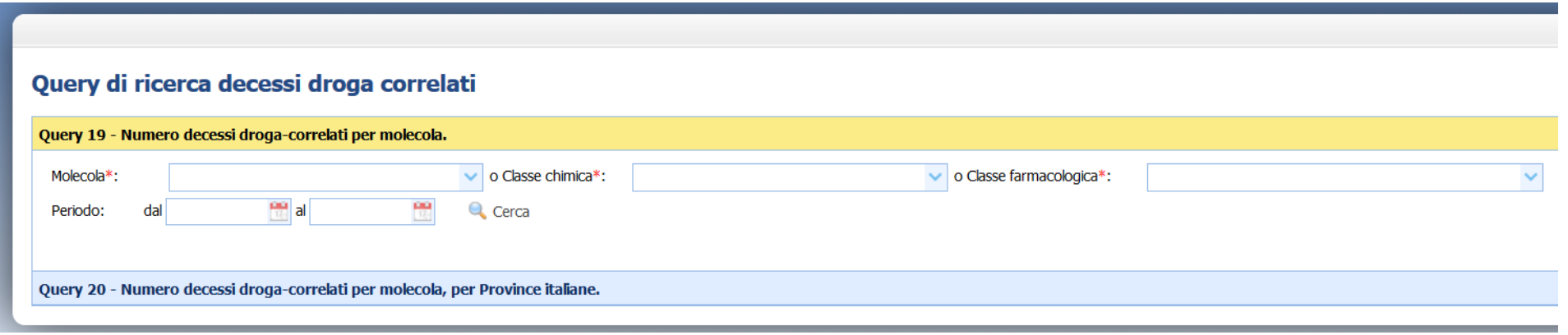
Query 18 - Number of cases mismatch between reported and assumed molecule molecule detected after analysis.

Query 19 - NEWS Molecules entered into the database according to the signs and symptoms highlighted

User: **Administrator Site**

Home page

- Data entry
- Consultation
  - Substance
  - Signs and symptoms (clinical cases)
  - Drug-related deaths
- Reporting standards
- Configurations


Query di ricerca decessi droga correlati
Query 19 - Numero decessi droga-correlati per molecola.
Molecola*:
o Classe chimica*:
o Classe farmacologica*:
Periodo:
dal
al
Cerca
Query 20 - Numero decessi droga-correlati per molecola, per Province italiane.


User: Administrator Site
Home page
Data entry
Consultation
Reporting standards
Configurations
Substance
Clinical case

Charts and graphs of substances

Report 1 - NEWS Molecules entered into the database according to the chemical class of membership - N and%.

Period: from a Search

- Report 2 - Molecules NEWS entered into the database according to the pharmaceutical class - N and%.
- Report 3 - NEWS Molecules entered into the database according to the chemical class of membership and year of entry - N and%
- Report 4 - NEWS Molecules entered into the database according to the pharmaceutical class and year of entry - N and%
- Report 5 - NEWS Molecules entered into the database according to their nature - and N%.
- Report 6 - NEWS Molecules entered into the database according to the type and year of registration
- Report 7 - NEWS Molecules entered into the database according to their origin (natural or synthetic) and the chemical class of membership - N and%.
- Report 8 - NEWS Molecules entered into the database according to the chemical class of membership and the availability of analytical data - N and%.
- Report 9 - NEWS Molecules entered into the database with the availability of analytical data according to the year of entry and the chemical class of membership - N.
- Report 10 - NEWS Molecules entered into the database according to the availability of analytical data and the type of sample that were found (seizure, sample collected, biological sample) - N and%.
- Report 11 - NEWS Molecules entered into the database with the availability of analytical data by kind of sample (specimen, collected sample or biological sample) and year of registration - N.
- Report 12 - Seizures NEWS entered into the database according to the chemical class of membership of the molecules in them identified - N and%
- Report 13 - Seizures recorded by the National Early Warning System according to the chemical class of related molecules - N.
- Report 14 - Seizures reported to NEWS for single molecule - N and%
- Report 16 - Numerosity seizures reported to the National Early Warning System in the various regions.
- Report 17 - Numerosity seizures reported to the National System of Early Warning by each collaborative center over the years.
- Report 18 - Samples collected in the same chemical class of membership of the molecules in them identified - N and%.
- Report 19 - Samples collected recorded by the National Early Warning System according to the chemical class of related molecules - N.
- Report 20 - Samples collected reported to NEWS for single molecule - N and%
- Report 21 - Numerosity samples collected reported to the National Early Warning System in the various regions.
- Report 22 - Numerosity samples collected reported to the National System of Early Warning by each collaborative center over the years.

Charts and graphs of substances

Report 1 - NEWS Molecules entered into the database according to the chemical class of membership - N and%.

Period: from 01/01/2013 a 31/12/2015 Search

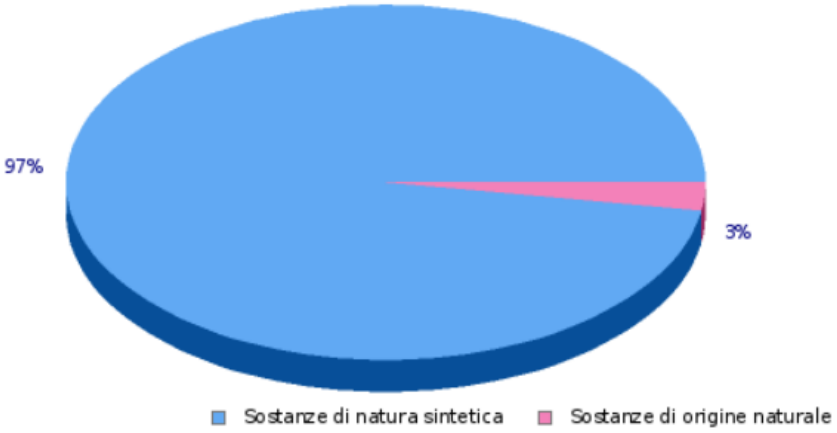
	N	%
Nitrophenols	1	0.3
Vegetable products	0	0.0
Benzothiazepine	2	0.7
Benzoxazepine	6	2.1
Benzossazinone	1	0.3
Similar phencyclidine	1	0.3
Quinolinil indole	1	0.3
Fenilacetilindoli	4	1.4
Fenilpiperidine	3	1.0
Benzodifurani	1	0.3
Benzoyl indoles	12	4.2
Diidrochinolin-3-carboxamide	1	0.3
Hydroxy indolyl ketone	1	0.3
Naphthoyl naphthalenes	1	0.3
Chinolinilcarbossilato	1	0.3
1-naftoilpirroli	5	1.7
Naphthoyl indoles	28	9.8
cyclopropyl-indole-ketones	3	1.0
tetramethyl ciclopropilindol methanone	6	2.1
Adamantoil indole	3	1.0
Indazolo	1	0.3
Indole-3-carboxamide	4	1.4
Indole 2-carboxamide	3	1.0
Indazol 3-carboxamide	6	2.1

Charts and graphs of substances

- Report 1 - NEWS Molecules entered into the database according to the chemical class of membership - N and%.
- Report 2 - Molecules NEWS entered into the database according to the pharmaceutical class - N and%.
- Report 3 - NEWS Molecules entered into the database according to the chemical class of membership and year of entry - N and%
- Report 4 - NEWS Molecules entered into the database according to the pharmaceutical class and year of entry - N and%
- **Report 5 - NEWS Molecules entered into the database according to their nature - and N%.**

Period: from 2009 a 2015 Search

	N	%
Substances of synthetic nature	268	97.45
Substances of natural origin	7	2:55
Total	275	100.00%



Report 21 - Numerosity samples collected reported to the National Early Warning System in the various regions.

Molecule * : 3-FMC/3-Fluorometcatinone Period: from 2009 a 2015 Search

	2009	2010	2011	2012	2013	2014	2015
ABRUZZO	0	0	0	0	0	0	0
BASILICATA	0	0	0	0	0	0	0
CALABRIA	0	0	0	0	0	0	0
CAMPANIA	0	0	0	0	0	0	0
EMILIA ROMAGNA	0	0	0	0	0	0	0
FRIULI VENEZIA GIULIA	0	0	0	0	0	0	0
LAZIO	0	0	0	0	0	0	0
LIGURIA	0	0	0	0	0	0	0
LOMBARDY	0	0	0	0	0	0	0
MARCHES	0	0	0	0	0	0	0
PIEDMONT	0	0	0	0	0	0	0
PUGLIA	0	0	0	0	0	0	0
SARDINIA	0	0	0	0	0	0	0
SICILY	0	0	0	0	0	0	0
TUSCANY	0	0	0	0	0	0	0
TRENTINO ALTO ADIGE	0	0	0	0	0	0	0
UMBRIA	0	0	0	0	0	0	0
VENETO	0	0	0	0	0	0	0
MOLISE	0	0	0	0	0	0	0
VAL D'AOSTA	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0

Georeferenced samples collected reported to the National Early Warning System, according to the abundance in different regions.

Year 2009

Year 2010

Year 2011

Year 2012


User: Administrator Site
Home page
Data entry
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Reporting standards
Configurations
Substance
Clinical case

Charts and graphs of clinical cases

Report 1 - NEWS Clinical cases registered in the database, according to the chemical class of membership of related molecules - N and%

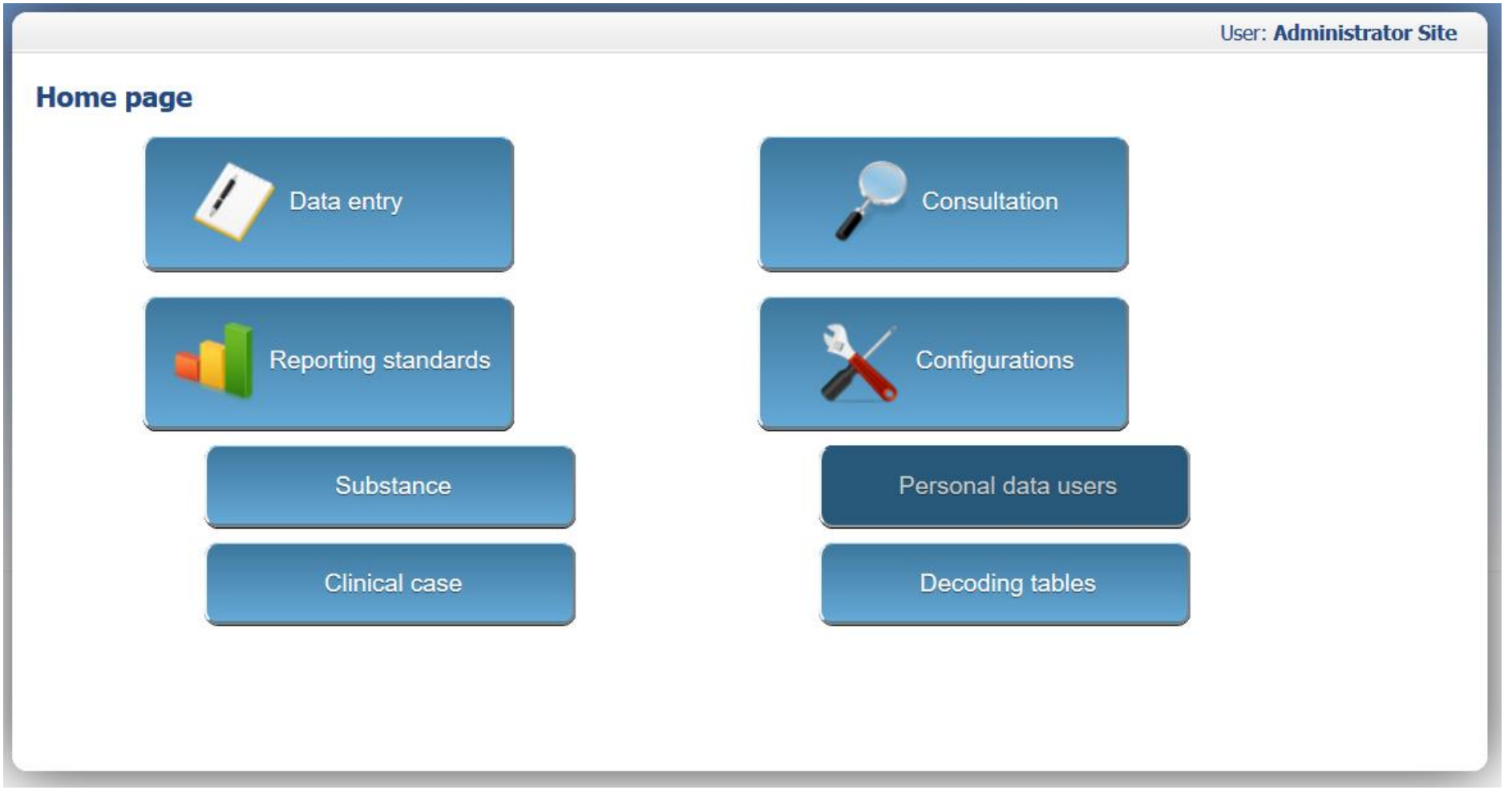
Chemical Class * : Tutte Period: from 2009 a 2015 Search

Report 2 - Clinical cases registered by the National Early Warning System according to the chemical class of related molecules - N and year.

Report 3 - Clinical cases registered by the National Early Warning System in accordance with the specific molecule - N and year.

Report 4 - Clinical cases reported to NEWS for single molecule - N and%

Report 5 - Clinical cases reported to the National Early Warning System, according to the number of the co-assumed (poly) - N and%.


User: Administrator Site
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User: **Administrator Site**

Data Management - List

cerca...

New | Change | Password | Delete

	Name	Active	Privileges	Type	country	Region	Provinc	City	E-mail	Phone	Cell phone	Fax	Name Ref.	Cogome Ref.	Name Resp.	Cogome Resp.
1	Adolfo Gregori	Yes	Administrator	Law Enforcemen	Italy	LAZIO	RM	ROME	adolfo.gregori@carabin	0633566330	3346920744		Adolfo	Gregori		
2	Alberto Vigolo	Yes	Administrator	Laboratory analy	Italy	VENETO	YOU	Cornedc	alberto.vigolo88@gmai				Catia	Serious		
3	Site Administrator	Yes	Administrator	Institutions (Minis	Italy	VENETO	VR	Verona	crimondo@hotmail.com				Claudia	Rimondo	Rimondo	Claudia
4	Andrea Ossato	Yes	Administrator	Laboratory analy	Italy	VENETO	PD	Gazzo P	andreaossato@libero.it		3483243994		Catia	Serious		
5	University Hospital Polic	Yes	Unit Clinical Healt	Clinical-health uni	Italy	SICILY	PA	Palermo	aaa@libero.it				aaa	aaa		
6	Catia	Yes	Police	Law Enforcemen	Italy			Verona	catiaseri@yahoo.it				Catia	Test		
7	Center Antivaleni Fond	Yes	Administrator	Poison Center	Italy	LOMBARDY	PV	Pavia	clocatelli@fsm.it				Carlo	Locatelli		
8	Poison Center AOUC Fl	Yes	Unit Clinical Healt	Poison Center	Italy	TUSCANY	FI	Florence	cav@aou-careggi.tosc				First	Botti		
9	Poison Centre Milan Az.	Yes	Unit Clinical Healt	Poison Center	Italy	LOMBARDY	ME	Milan	franca.davanzo@ospec				Franca	Davanzo		
10	Regional Center Regior	Yes	Laboratory Analy	Laboratory analy	Italy			Orbassa	marco.vincenti@unito.i				Marco	Winning		

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User: **Administrator Site**

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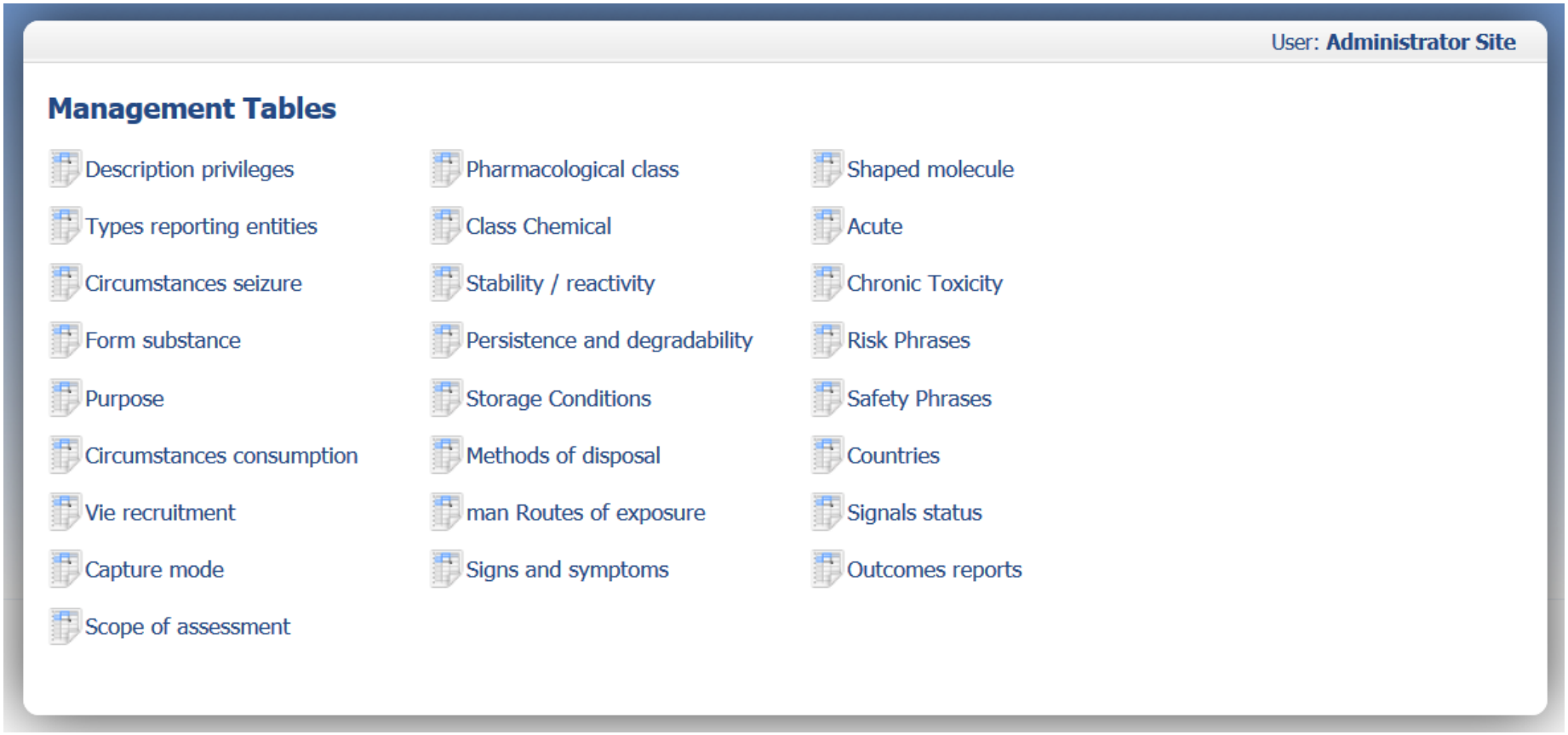
User: Administrator Site
Management Tables
Description privileges
Types reporting entities
Circumstances seizure
Form substance
Purpose
Circumstances consumption
Vie recruitment
Capture mode
Scope of assessment
Pharmacological class
Class Chemical
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Persistence and degradability
Storage Conditions
Methods of disposal
man Routes of exposure
Signs and symptoms
Shaped molecule
Acute
Chronic Toxicity
Risk Phrases
Safety Phrases
Countries
Signals status
Outcomes reports

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Thanks for your attention

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Project manager