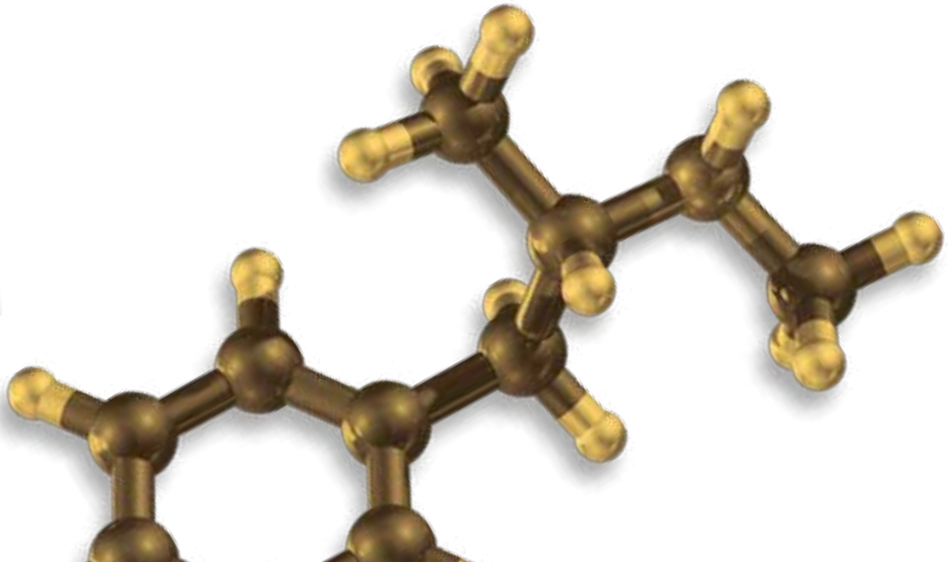
new art laboratories

nal von minden

LUCIO®-DRUG ELISA

Heterogeneous Enzymatic Immunoassays for Drug Analysis



Rapid Tests

Drug Laboratory Diagnostics

Medical Laboratory Diagnostics

Laboratoryservice

Consulting & Service

nal von minden
Your Partner in Professional Diagnostics

Competent and Innovative

For over 30 years the nal von minden GmbH provides highest product quality, an extensive product portfolio and excellent customer service for drug analysis and medical diagnostics. By continuously improving and enlarging our product range we react quickly and flexible to the constantly growing diagnostic market.

Our excellent professionalism, strict quality controls and emphasis on consulting tailored to the individual customer make us a strong partner for you. To reaffirm our philosophy of quality we are certified according to ISO:13485.

Our laboratory located in Regensburg enables us to reconstruct and check your test results in order to provide you with a detailed interpretation and evaluation tailored to your personal circumstances.

The nal von minden All-around Service

Our international team **in Regensburg, Moers and The Hague** serves customers from all across the world. Your satisfaction as a valued customer and the constant improvement of our service are our highest priority.

We are offering an all-around service with comprehensive consulting, flexible product development, a simple order process and fast delivery. We will always be happy to visit you on request, for a detailed consultation including product presentation.

We welcome any of your suggestions with regards to the expansion of our product range and the optimization of our processes.

As your long-term partner we don´t want to merely satisfy you, but inspire you!

The Laboratory Diagnostics Team
f.l.t.r.: Daniela Schneider, Lukas Eder, Viktoria Plän, Dr. Torsten Winkler, Marion Bachmeier, Richard Hülsmann and Stefanie Spötzl
not shown: Ulrike Jahnke, Regina Winter

Content

Introduction

85 million people = a quarter of the European adults - that's the number of people that have consumed illegal drugs as estimated by the European Commission. In 2011 more than 6500 people died from an overdose.

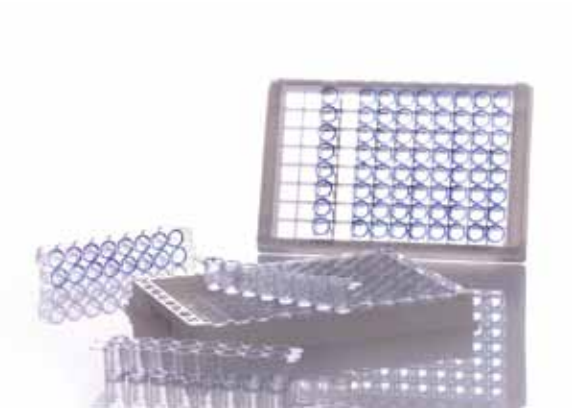
These figures clearly show the great need for drug analysis. Topics such as workplace testing and public security become more and more of an issue - and of course the search for an inexpensive and reliable method to make the screening process more effective.

Our LUCIO®-Drug ELISAs provide a way to ensure a trusted result and reduce and by prescreening your samples with our cost-efficient assays, unnecessary GC/MS or LC/MS analyses can be avoided. This is due to the fact that after performing the prescreening, all negative samples can be ruled out for further testing and merely positive ones have to be confirmed.

We offer LUCIO®-Drug ELISA kits for 24 different parameters including common types of drugs like amphetamines and buprenorphine as well as special parameters like zolpidem and carisoprodol.

To complete our portfolio with tests for new designer drugs, as a response to the developments of the European drug market, we distribute ELISA kits manufactured by Randox Toxicology. These are especially suitable for the new so-called “legal highs” such as “spice” or “bath salts”.

In addition we offer our full support when it comes to plan the automation for your laboratory. We can provide you with a non-obligation offer that is tailored to your individual needs.



Societies

We are partners, sponsors or members of the following societies and fora:

- ***TIAFT:*** The International Association of Forensic Toxicologists
- ***EWDTS:*** European Workplace Drug Testing Society
- ***GTFCh:*** Gesellschaft für Toxikologische und Forensische Chemie
- **IATDMCT:** International Association of Therapeutic Drug Monitoring & Clinical Toxicology
- **SoFT:** Society of Forensic Toxicologists
- **SoHT:** Society of Hair Testing
- **IFDAT:** International Forum for Drug & Alcohol Testing
- **SFTA:** Société Française de Toxicologie Analytique
- **DGKL:** Deutsche Vereinte Gesellschaft für Klinische Chemie und Laboratoriumsmedizin e.V.
- **DGRM:** Deutsche Gesellschaft für Rechtsmedizin
- **DGS:** Deutsche Gesellschaft für Sucht

You can regularly visit us at their events!

Test Principle

LUCIO®-Drug ELISA uses the heterogeneous enzyme linked immunosorbent assay (ELISA) technology.

This robust technique is commonly used in laboratory analysis and toxicology for the detection of drugs and their metabolites in various sample materials. Besides LUCIO®-Drug ELISAs have a high sensitivity level.

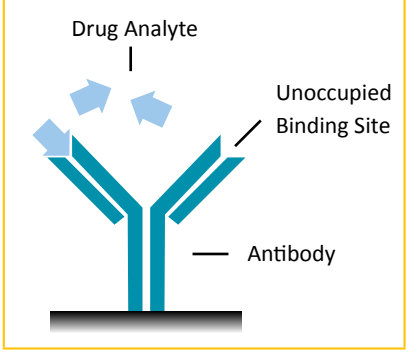
Sample material is pipetted into micro plates coated with drug specific antibodies. The target analytes contained in the sample material serve as antigens reacting with the antibodies of the micro well.

Now horseradish peroxydase (HRP), an enzyme bound to an analyte molecule (conjugate), is added to the well. The conjugate is competing with the analytes of the sample material for the available binding sites of the antibodies. In the next step unbound material is washed out and a chromogenic substrate is added.

In case of antibody-conjugate interaction TMB is oxidized by the bound peroxydase, leading to a colour development. The reaction is terminated by addition of stop solution.

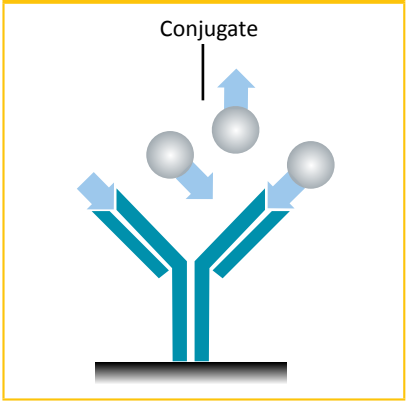
The intensity of the colour is indirectly proportional to the amount of the target analyte contained in the sample. The absorbance is measured using a microtiter plate reader at 450 nm.

1. Sample in microplate



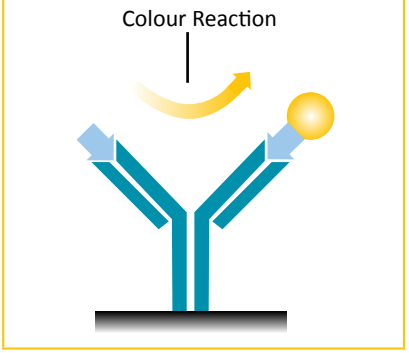
Analytes are bound by Antibody.

2. Addition of Conjugate

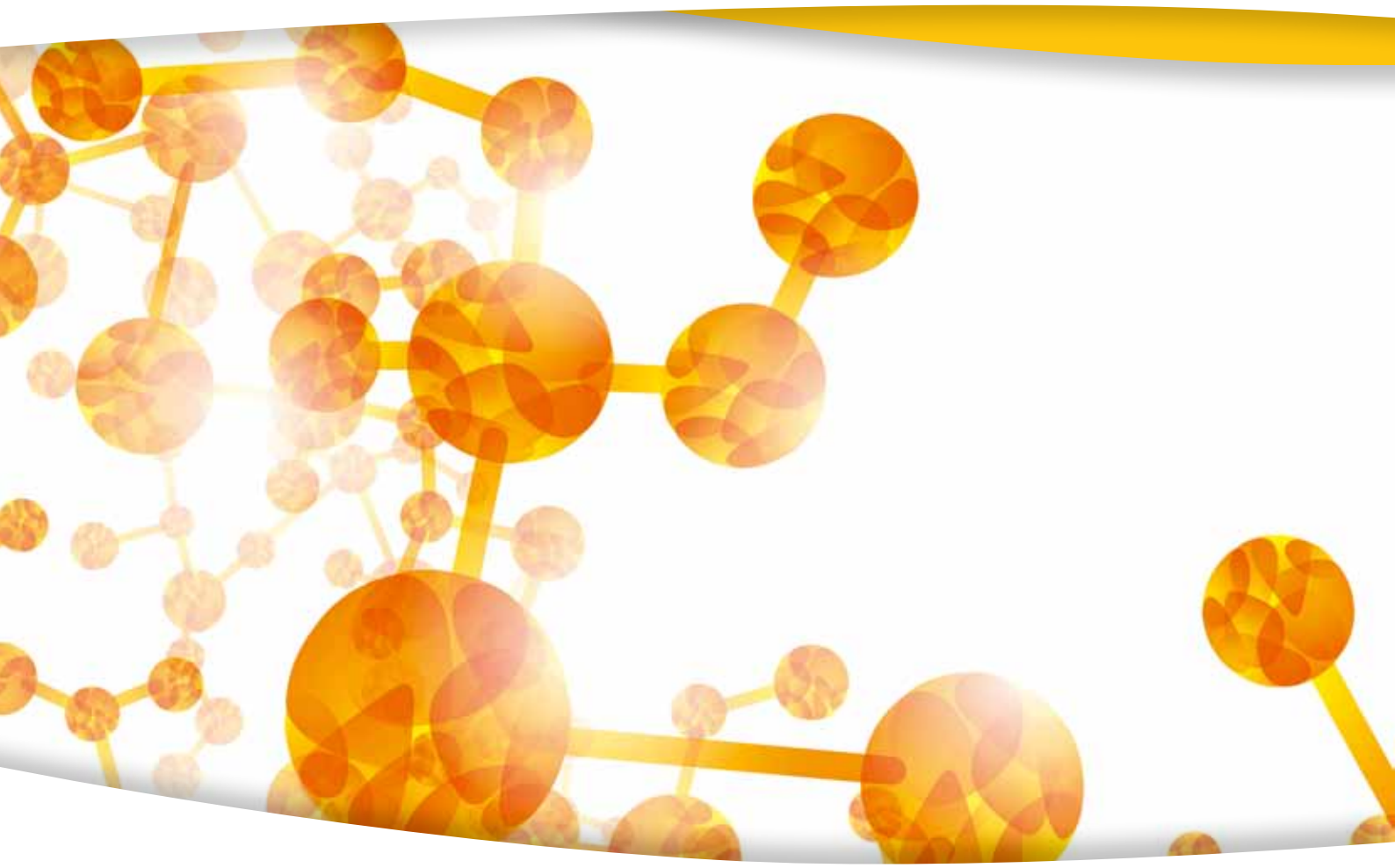


Analyte compete with conjugate for free binding sites on the antibodies.

3. Addition of TMB Substrate



Conjugate and unbound sample analytes are washed out. Colour reaction of the conjugate enzymes and TMB substrate.



LUCIO®-Drug ELISA

We offer a comprehensive range of ELISAs. Over 24 assays for drugs and their metabolites have been developed to examine virtually any sample type relevant for a forensic laboratory. Thanks to the configuration of the assay as a "direct" ELISA (competitive assay, without secondary antibody) the protocol of this assay does essentially consist of three steps. Furthermore, one protocol for all assays and ready-to-use reagents, guarantees simple and cost-efficient application of the assays in your lab, whether in manual mode or automated on a wide range of liquid handling stations.

The special advantage of our ELISAs, and thus the benefit for you as a user in the lab, is located in the excellent sensitivity, in a variety of sample matrices, in concerted and effective protocols for the entire workflow – from sample collection to confirmation analysis.

For more information on the drug analysis, you are more than welcome to download and read our book "Analysis of Drugs and Medicines" on our website www.nal-vonminden.com. The book is available for download in the 4th revised edition.

Product Overview

Parameter		CE Status	Sensitivity	Kit content (plates)	Order No.
Acetaminophen	ACA	CE	2 µg/ml	2	1701602
				5	1701605
				50	1701650
Amphetamine	AMP	CE	2 ng/ml	2	1700102
				5	1700105
				50	1700150
Barbiturates	BAR	CE	2 ng/ml	2	1700402
				5	1700405
				50	1700450
Benzodiazepines	BZD	CE	1 ng/ml	2	1700502
				5	1700505
				50	1700550
Buprenorphine	BUP	CE	0,2 ng/ml	2	1701502
				5	1701505
				50	1701550
Cannabinoids	THC	CE	0,1 ng/ml	2	1700702
				5	1700705
				50	1700750
Carisoprodol	CAR	CE	2 ng/ml	2	1701702
				5	1701705
				50	1701750
Clonazepam	CNZ	CE	2 ng/ml	2	1701902
				5	1701905
				50	1701950
Cocaine	COC	CE	2 ng/ml	2	1700202
				5	1700205
				50	1700250
Fentanyl	FYL	CE	25 pg/ml	2	1701802
				5	1701805
				50	1701850
Ketamine	KET	CE	2 ng/ml	2	1703102
				5	1703105
				50	1703150
MDMA	XTC	CE	2 ng/ml	2	1701102
				5	1701105
				50	1701150

Product Overview

Parameter		CE Status	Sensitivity	Kit content (plates)	Order No.
Methadone	MTD	CE	2 ng/ml	2	1700602
				5	1700605
				50	1700650
Methamphetamine	MET	CE	2 ng/ml	2	1702102
				5	1702105
				50	1702150
Opiates	OPI	CE	2 ng/ml	2	1700302
				5	1700305
				50	1700350
Oxycodone	OXY	CE	2 ng/ml	2	1700802
				5	1700805
				50	1700850
Phencyclidine	PCP	CE	0,2 ng/ml	2	1700902
				5	1700905
				50	1700950
Propoxyphene	PPX	CE	2 ng/ml	2	1701202
				5	1701205
				50	1701250
Tricyclic Antidepressants	TCA	CE	2 ng/ml	2	1702702
				5	1702705
				50	1702750
Tramadol	TML	CE	10 ng/ml	2	1702602
				5	1702605
				50	1702650
Zolpidem	ZOL	CE	2 ng/ml	2	1702802
				5	1702805
				50	1702850

Kit Configuration

Our LUCIO®-Drug ELISA Kits are available in configurations consisting of two, five or 50 microtiter plates (every plate consists of 96 wells in 12 strips à 8 wells – in a frame holder).

ELISA Kits by Randox

Randox Toxicology developed a set of ELISA Kits that are currently unique on the market. These kits are specialized on new designer drugs which are sold as Legal Highs: JWH/AM, UR144/XLR11 , Bath Salts (Mephedrone, Methcathinone, MDPV) and Mitragynine (Kratom).

Additionally Randox developed kits for the detection of the so-called Z-Drugs or "non-benzodiazepines" – Zolpidem, Zaleplon, Zopiclone. These drugs may be prescribed for short term use (2-4 weeks) to deal with severe sleeping difficulties. Often users are unaware of the serious health risks involved in the misuse of these drugs.

The following kits are distributed by nal von minden:

Product Overview

Parameter	Kit content (plates)	Order No.
Spice ELISA JWH/AM	1	540701
Spice ELISA UR144/XLR11	1	1840701
Mephedrone / Methcathinone ELISA	1	1844001
Methylenedioxypyrovalerone (MDPV) ELISA	1	1844501
Mitragynine (Kratom) ELISA	1	1844301
Zolpidem ELISA	1	1842801
Zaleplon ELISA	1	1844101
Zopiclone ELISA	1	1844201

Automation

Our support includes the individual planning and establishing of the automation in your laboratory. The technical implementation as well as the maintenance and service during operation are of course also part of our service package. Depending on laboratory size and sample throughput we are providing various automation options suitable for any constellation.

We can offer everything from a simple washer/reader solution for a small sample throughput, to the Tecan Freedom EVOlyzer® for over 150.000 samples a day, from half-automated to fully automated.

No matter how high or low your sample throughput is we will have a solution for you!

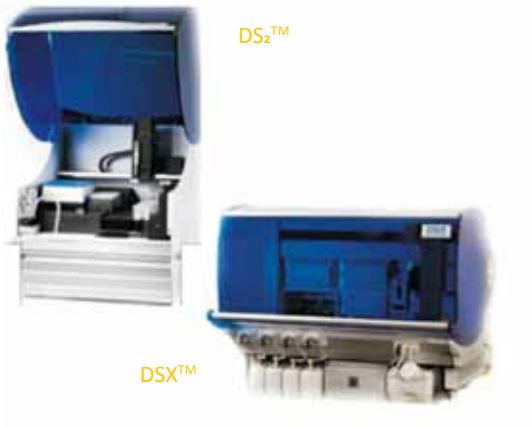
If your laboratory is already fully equipped we also offer technical assistance in the creation, validation and implementation of analytical protocols for our immunoassays.

Our application experts are happy to help you with any technical question via telephone, e-mail or a visit in your laboratory.

RT-2100 ELISA Reader + RT-3100 ELISA Washer

- ✓ Rapid reading of the 96 well plate (5 sec.)
- ✓ Compatible with Windows
- ✓ Connection to all common printers
- ✓ Very good price-performance-ratio

DS_2^{TM} / DSX^{TM}



- ✓ Complete automation of all steps of the ELISA method including sample dilution, sample distribution, incubation, washing and absorbance measurement
- ✓ Ideal for laboratories looking for an automation of their process in spite of a small sample throughput
- ✓ Parallel processing of up to two (DS2™) or four (DSX™) 96 well plates and 12 different assays
- ✓ Broad application range: including parameters for infectious and immunological diseases, hormones and allergy markers and drug analysis

Crocodile miniWorkstation

- ✓ A compact workstation that fits anywhere
- ✓ Five individual instruments in one (Dispenser, Shaker, Incubator, Washer and Reader)
- ✓ Walk away automation for 1 plate
- ✓ Regulatory compliance (DIN ISO 13485)

Walk away automation

The workstation is designed for truly unattended operation. Simply insert the sample microplate which contains standards and samples, choose the assay protocol and leave the work to the Crocodile.

Easy hardware setup

All functional modules are put together in one compact box. Simply connect the unit with the power outlet and a notebook or desktop computer and you are all set up for analysis. The tubing for wash and waste liquids is preinstalled, ready to be introduced into the wash and waste bottles.

Fast start

In everyday use, preparing to use the Crocodile won´t give you any headaches. Wash, waste, and reagent bottles are readily accessible, right next to the instrument. The instrument is ready for startup within minutes.

Easy maintenance and reliable service

Flushing of the system and routine replacement of the tubing is made easy by the intuitive design of the Crocodile. Trained technical staff is available to help if needed, and after-warranty service agreements are available in most geographical locations – to ensure trouble-free operation over the lifetime of the instrument.

An open system

The Crocodile will adapt to any ELISA format, including sandwich, competitive, or other. Reagent bottles of any shape and size are accommodated by the carefully designed and tested bottle holders.

Validation made easy

The validation performance of the Crocodile is supported by our 3Q Package: Installation Qualification, Operation Qualification and Performance Qualification steps are performed according to detailed instructions provided. The results are documented in checklists according to the specific features of the instrument.

PC-Software

The user friendly software easily adapts to any ELISA protocol. The five different functions can be aligned in any sequence, one or several times each (for example one to four dispensing steps or multiple washing steps). Setting of each step is flexible and intuitive. Once you have chosen an assay protocol, the screen will show a graphic of the entire assay schedule, as it will be performed by the Crocodile.

Tecan Freedom EVOlyzer®

- ✓ Fully automated system
- ✓ With all features that facilitate the routine work
- ✓ Coated, washable stainless steel tips with liquid level detection
- ✓ Increased throughput with continuous loading of samples

The lab managers' first choice

The Freedom EVOlyzer was created to increase the productivity and efficiency of your facility and can adapt to the changing needs of today's modern clinical laboratory. The Freedom EVOlyzer automates ELISAs from start to finish, allowing work resources to be redistributed. Fast delivery of results is made possible through high speed processing and dual parallel arm design.

Reliable results

Each individual device in the Freedom EVOlyzer is designed and tested for highly accurate and recise operation. Integrated process control and results quality control, based on the Levey-Jennings charts and Westgard rules, are the foundations for generating consistent and reliable results.

Easily integrated

The built-in bidirectional ASTM (NCCLS LIS1/ NCCLS LIS2, see description on last page) communication module allows seamless integration of the Freedom EVOlyzer with your local laboratory information system – no extra software is needed. Several input and output data formats are supported for easy integration with both front-end and back-end systems.

Worktable monitoring ensures safety

The Freedom EVOlyzer closely controls all user interactions and confirms all load and unload actions taking place through a Worktable Loading Interface, which monitors access to each individual grid on the worktable using a magnetic sensor. Automatic barcode scanning and evaluation of the samples, loaded plates and reagent containers ensures complete process security.

Operation with intuitive software

The Freedom EVOlution™ Software Run Control is optimized for touchscreen operation and designed to be simple to use, requiring minimal training. The graphical user interface (GUI) guides you through every procedure, step by step, and the software keeps track of all the system's required maintenance tasks.

Easy Processing modifications and simple Operator interaction

After the initial sample scan and worklist download, you can make last minute changes to the worklist before starting the process. The worktable's integrated green and red lights simplify the placement of sample and reagent racks on the instrument. An acoustic signal and flashing lights will alert you whenever interaction with the system is needed.

*Please be aware that the above mentioned products are only examples of our broad automation product range. On request we provide you with an individual non-binding automation offer based on the sample throughput of your laboratory and your specific needs. If ELISA automation is already existent in your laboratory, we offer support in the validation and creation of analysis protocols for our immunoassays.

united forces

one alliance for one solution

UNITED FORCES

“One day, analytics of drugs of abuse in oral fluid could replace blood”. This vision has become reality with the “United Forces" partnership between the Austria based Greiner Bio-One GmbH and nal von minden GmbH.

Together we offer a fully automated liquid handling process for detection of drugs of abuse in oral fluid samples.

As collection of specimen is easy and non-invasive, oral fluid is a stress-free alternative to blood collection. The Saliva Collection System (SCS) from Greiner Bio-One allows for a standardized oral fluid collection by using defined media, thereby preventing discrimination of analytes, as can be the case with carrier-bond collection systems.

Oral fluids now serve as the ideal sample matrix for routine and non-alterable drug testing in all situations, including at traffic controls, prisons, workplace-testing or drug rehabilitation centers. The key behind the United Forces approach is combining precise quantification of oral fluid content in the sample matrix with high-precision detection of drug analytes in these samples with a sophisticated, fully automated robotic system. Exceedingly accurate results with high precision reagents and laboratory equipment guarantee an all-in-one solution. providing high throughput capabilities with minimal hands-on time. The seamless interface with the ELISA-based analysis completes the all-in-one solution.

GBO Saliva Collection System

greiner bio-one

*Saliva Collection System – for Self Testing**

Description	Pcs./carton	Order no.
Saliva Collection System, single-pack	1	1711000

*Saliva Collection System – for Professionals***

Description	Pcs./carton	Order no.
Saliva Collection System with 1 trasfer tube	50	1711051
Saliva Collection System with 2 trasfer tubes	50	1711052
Saliva Extraction Solution 4 ml	1200	1711004
GBO Saliva Transfer Tube 3.5 ml	1200	1711003

GBO Saliva Quantification Kit

Description	Pcs./carton	Order no.
GBO Saliva Quantification Kit	1	1711005

* Self-Testing
Self-testing means that the test person can do the saliva collection his/herself without the assistance of any medical personnel. The system as well as the corresponding instructions for use is tested and certified for self-testing.

** Professionals
Doctors or medical personnel additionally have the possibility to purchase the above listet single products to create their own setting for saliva collection.

Saliva Collection System

The easy, stress-free sample collection as well as the fact that saliva only reproduces the free (biologically active) concentration of analytes enables a wide range of applications in the field of analytics for drugs, hormones and nucleic acids:

Step 1: Saliva extraction solution, tube 1

Simple saliva collection by thoroughly rinsing out the oral cavity in 2 min.; contains yellow internal standard for determination of the saliva quantity.

Step 2: Saliva collection beaker 2

For collection of saliva after rinsing.

Step 3: Saliva transfer tubes 3

Due to the vacuum in the tube, transfer is quick and hygienic. Additionally saliva is stabilised and preserved.

Brief Information and Order Numbers

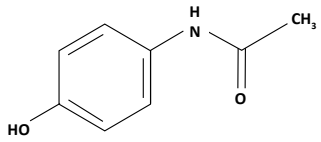
Acetaminophen (ACA)

Order Numbers ELISA:

1701602	2	x	96	well Microtiter plates
1701605	5	x	96	well Microtiter plates
1701650	50	x	96	well Microtiter plates

Specific Test Data:
Sensitivity: 2 µg/ml
Opt. Dose/Response: N/A
Positive Standard: N/A
Cross Reaction: see page 30

Information about the analyte:
Name: Acetaminophen
Group: Analgetics, Antipyretics
Brief Description: Acetaminophen is a painkiller and fever reducer, and a slight anti-inflammatory derivative of acetanilides.
Trade Names: Paracetamol, APAP, PHAA; Tylenol®, Grippex®, Dolprone®
CAS Number: 103-90-2
Structure:



Metabolism: (1) ->Glucuronide (2) ->Sulfate (3) ->N-Acetyl-p-benzochinonimin ->Mercaptur acid (Conjugation with Glutathion) (4) ->N-Acetyl-p-benzochinonimin reacts with liver cell proteins
Half-life in blood: 1 - 4 h
Excretion in Urine: < 5 %
Administration: oral, rectal
Therapeutic Dose: 0.5 - 1 g
Toxic Dose: 10 g
Therapeutic Concentration: 5 - 25 µg/ml
Toxic Concentration: 100 - 300 µg/ml
Specialties: The metabolization of Acetaminophen mainly occures in the liver. A small part, however, is dismantled on the cytochrome P450 enzyme system. The resulting reactive N-acetyl-p-benzochinonimin is normally inactivated by glutathione, but can cause liver damage, in case of overdose combined with Glutathione reservoir.

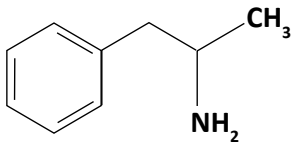
Amphetamine (AMP)

Order Numbers ELISA:

1700102	2	x	96	well Microtiter plates
1700105	5	x	96	well Microtiter plates
1700150	50	x	96	well Microtiter plates

Specific Test Data:
Sensitivity: 2 ng/ml
Opt. Dose/Response: 300-3000 pg/well
Positive Standard: 100 ng/ml d-Amphetamine
Cross Reaction: see page 30

Information about the analyte:
Name: Amphetamine
Group: Stimulants
Brief Description: Amphetamines are sympathomimetic effective amines, their biological effects include a strong stimulation of the CNS.
Trade Names: Dexedrin®, Benzedrin®
Street Names: Speed, Bennies, Dexies, Uppers
CAS Number: 300-62-9
Structure:



Metabolism: (1) ->Phenylacetone ->Benzoic acid ->Hippuric acid (2) ->4-Hydroxyamphetamine ->4-Hydroxynorephedrineglucuronide/ Sulfate (3) ->Norephedrine ->4-Hydroxynorephedrine
Substances with amphetamine as a metabolite: Ethylamphetamin, Clobenzorex, Mefenorex, Selegilin, Fenproporex, Amfetaminil, Prenylamin, Fenetyllin ->Amphetamine
Half-life in blood: 4 - 12 h
Detection time (Urine): 1 - 3 days
(Cut-off: 1000 ng/ml)
Detection time (Blood): 46 h
(Cut-off: 4 ng/ml, Dosis 6 mg oral)
Detection time (Saliva): 20 - 50 h
(Cut-off: 10 ng/ml)
Administration: oral
Therapeutic Dose: 10 mg
Therapeutic Concentration: 20 - 100 ng/ml
Toxic Concentration: 200 - 300 ng/ml
Specialties: Excreted in urine, either unchanged or after the drug was metabolised within the liver. Since amphetamine has a pKa value of 9.9, it is reabsorbed more easily from alkaline urine.

Acidic urine therefore contains 80% free amphetamine, while alkaline only contains 2-3%.

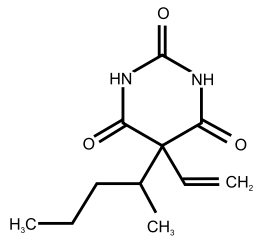
Barbiturates (BAR)

Order Numbers ELISA:

1700402	2	x	96	well Microtiter plates
1700405	5	x	96	well Microtiter plates
1700450	50	x	96	well Microtiter plates

Specific Test Data:
Sensitivity: 2 ng/ml
Opt. Dose/Response: N/A
Positive Standard: 25 ng/ml Secobarbital
Cross Reaction: see page 30

Information about the analyte:
Name: Secobarbital
Group: Barbiturates
Brief Description: Secobarbital is an example of a barbiturate with short half-life in blood and is used as a sedative. Barbiturates have dampening effects on the central nervous system.
Other barbiturates: Thiopental, Methohexital, Phenobarbital, Pentobarbital, Mephobarbital, Butalbital, Butabarbital, Aprobarbital, Amobarbital, Allobarbital
Trade Names: Seconal®
Street Names: Reds, Seccies, M&M's
CAS Number: 76-73-3
Structure:



Metabolism: ->3-Hydroxysecobarbital -> Secodiol ->5-(1-methylbutyl)-Barbituric acid
Half-life in blood: 15 - 35 h
Detection time (Urine): 2 - 8 d
(Cut-off: 300 ng/ml)
Excretion in Urine: 5 %
Administration: oral, rectal, intravenous, intramuscular
Therapeutic Dose: 100 - 200 mg
Toxic Dose: 2000 - 5000 mg
Therapeutic Concentration: 1 - 5 µg/ml
Toxic Concentration: 7 - 10 µg/ml
Specialties: Barbiturates with short half-life will always be in the form of metabolites excreted in the urine, barbiturates with a long half-life, on the other hand remain mostly unchanged.

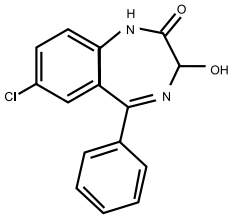
Benzodiazepines (BZD)

Order Numbers ELISA:

1700502	2	x	96	well Microtiter plates
1700505	5	x	96	well Microtiter plates
1700550	50	x	96	well Microtiter plates

Specific Test Data:
Sensitivity: 1 ng/ml
Opt. Dose/Response: 300-3000 pg/well
Positive Standard: 200 ng/ml Temazepam
Cross Reaction: see page 30

Information about the analyte:
Name: Temazepam
Group: Benzodiazepines
Brief Description: Temazepam is used clinically as hypnotic drug for the short-term treatment of insomnia. Benzodiazepines are currently the most commonly used sedative.
Further Benzodiazepines:
(1,4 Benzodiazepines) Medazepam, Diazepam, Nordiazepam, Oxazepam, Prazepam, Chlorazepat, Chlordiazepoxid, Flurazepam, Lorazepam, Lormetazepam;
(7-Nitro-benzodiazepines) Flunitrazepam, Nitrazepam, Clonazepam;
(Triazolbenzodiazepines) Alprazolam, Bromazepam, Brotizolam, Triazolam
Trade Names: Anxiolit®, Serax®, Adumbran®, Praxiten®
CAS Number: 604-75-1
Structure:



Metabolism: (1) Medazepam ->Diazepam ->Nordiazepam ->Oxazepam ->Oxazepamglucuronid (2) Diazepam ->Temazepam ->Oxazepam (3) Chlordiazepoxid ->Demoxazepam ->Nordiazepam (4) Prazepam ->Nordiazepam (5) Prazepam ->3-OH-Prazepam (6) Flunitrazepam, Nitrazepam, Clonazepam ->N-Demethyl-... (7) F...,N...,C... ->N-Acetyl-... ->N-Acetyl-3-hydroxy-... ->Glucuronide (8) F...,N...,C... ->7-Amino-...->7-Amino-3-hydroxy-... ->Glucuronide (9) Nitrazepam ->2-amino-5-Nitrobenzophenon ->3-hydroxy-2-amino-5-Nitrobenzophenon (10) Alprazolam, Brotizolam, Midazolam, Triazolam, Hydroxy-Alprazolam, Hydroxy-Brotizolam, etc.

Half-life in blood: 6 - 20 h
Excretion in Urine: < 1 %
Administration: oral, parenteral
Therapeutic Dose: 10 - 30 mg
Toxic Dose: > 1000 mg
Therapeutic Concentration: 100 - 1500 ng/ml
Toxic Concentration: > 2000 ng/ml
Specialties: The metabolites are pharmacologically active, and benzodiazepines as themselves are excreted with urine.

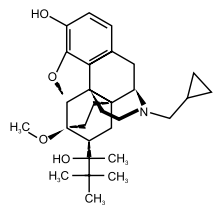
Buprenorphine (BUP)

Order Numbers ELISA:

1701502	2	x	96	well Microtiter plates
1701505	5	x	96	well Microtiter plates
1701550	50	x	96	well Microtiter plates

Specific Test Data:
Sensitivity: 0,2 ng/ml
Opt. Dose/Response: 6 - 150 pg/well
Positive Standard: 10 ng/ml Buprenorphine
Cross Reaction: see page 30

Information about the analyte:
Name: Buprenorphine
Group: Semisynthetic Opioids
Brief Description: Buprenorphine is a semisynthetic opioid analgesic and can also be used to substitute drugs in the treatment of opiate dependence.
Trade Names: Subutex®, Subuxone®, Temgesic®, Buprenex®
CAS Number: 52485-79-7
Structure:



Metabolism: (1) –>Buprenorphinglucuronide
(2) –>Norbuprenorphine –>Glucuronide
Half-life in blood: 3 - 5 h
Detection time (Urine): 2 - 6 days
(Cut-off: 20 ng/ml)
Excretion in Urine: 12 - 15 %
Administration: transdermal, sublingual, intravenous
Therapeutic Dose: 8 - 16 mg
Toxic Dose: 24 - 32 mg
Theraputic Concentration: 14 - 110 ng/ml
Toxic Concentration: 200 ng/ml
Specialties: Buprenorphine is characterized by a very slow dissociation kinetics at the opioid receptors. Buprenorphine is highly lipophilic, which means that it is stored in the fat tissue and slowly released.

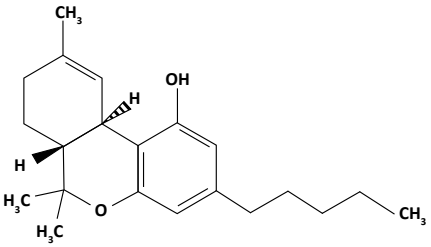
Cannabinoids (THC)

Order Numbers ELISA:

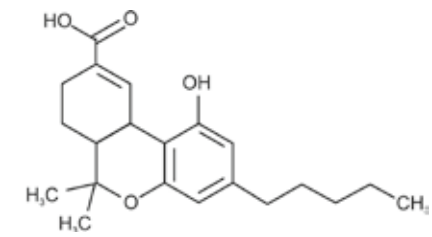
1700702	2	x	96	well Microtiter plates
1700705	5	x	96	well Microtiter plates
1700750	50	x	96	well Microtiter plates

Specific Test Data:
Sensitivity: 0,1 ng/ml
Opt. Dose/Response: 2 - 300 pg/well
Positive Standard: 10 ng/ml Δ^9-THC-COOH
Cross Reaction: see page 31

Information about the analyte:
Name: Δ^9-THC
Group: Hallucinogens
Brief Description: Δ^9-THC is a hallucinogen acting drug, derived from the flowers of the hemp produced and mainly consumed by smoking. THC-COOH and its glucuronide mainly occurs in Urine, metabolite of Δ^9-THC.
Street Names: THC, Mary Jane, Pot, Grass, Cannabis, Reefer, Hash, Hashish, Sinsemilla, Thai Sticks, Ganja, Kif
CAS Number (Δ^9-THC): 1972-08-3
Structure:



CAS Number (THC-COOH): 64280-14-4
Structure:



Metabolism: (1) –>11-Hydroxy-Δ9-THC –>11-nor-9-carboxy-Δ9-THC (THC-COOH)–>Glucuronide; (2) –>11-Hydroxy-Δ9-THC–>8,11-Dihydroxy-Δ9-THC; (3) –>8-Hydroxy-Δ9-THC –>8,11-Dihydroxy-Δ9-THC
Half-life in blood: 14 - 38 h
Detection time (Blood, Δ9-THC): 5 h (Cut-off: 10 ng/ml, Dose 34 mg inhalation)
Detection time (Blood, THC-COOH): 36 h (Cut-off: 10 ng/ml, Dose 34 mg inhalation)
Detection time (Urine, THC-COOH): 34 / 87 h (Cut-off: 15 ng/ml, Dose 16 mg / 30 mg THC-Smoke inhalation)
Detection time (Saliva, Δ9-THC): 34 h (Cut-off: 0.5 ng/ml, Dose 20 - 25 mg inhalation
Excretion in Urine: < 1 %
Administration: oral, inhalation
Theraputic Dose: 10 - 110 mg
Toxic Dose: N/A
Theraputic Concentration: 190 µg/ml
Toxic Concentration: N/A
Specialties: After taking, the drug is metabolized in the liver. The presence of the primary carboxyl metabolite (THC-COOH) in urine represents the use of marijuana/cannabis.

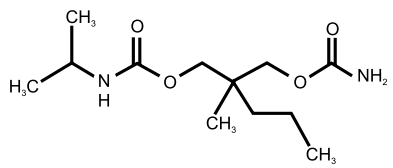
Carisoprodol (CAR)

Order Numbers ELISA:

1701702	2	x	96	well Microtiter plates
1701705	5	x	96	well Microtiter plates
1701750	50	x	96	well Microtiter plates

Specific Test Data:
Sensitivity: 2 ng/ml
Opt. Dose/Response: N/A
Positive Standard: N/A
Cross Reaction: see page 31

Information about the analyte:
Name: Carisoprodol
Group: Muscle Relaxers
Brief Description: Carisoprodol is a centrally acting muscle relaxant. It alleviates the pain associated with strains and sprains, spasms or other muscle injuries.
Trade Names: Soma®, Sanoma®, Carisoma®
CAS Number: 78-44-4
Structure:



Metabolism: –>Meprobamate
Half-life in blood: 8 h
Excretion in Urine: > 1 %
Administration: oral
Therapeutic Dose: 1400 mg
Toxic Dose: > 3500 mg
Therapeutic Concentration: 10 - 30 µg/ml
Toxic Concentration: > 40 µg/ml
Specialties: In the liver Carisoprodol is to a large extent metabolised to Meprobamate and excreted via the kidney. Meprobamate is an active substance, which is known for its potential abuse and dependence.

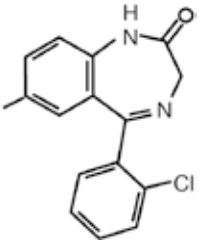
Clonazepam (CNZ)

Order Numbers ELISA:

1701902	2	x	96	well Microtiter plates
1701905	5	x	96	well Microtiter plates
1701950	50	x	96	well Microtiter plates

Specific Test Data:
Sensitivity: 2 ng/ml
Opt. Dose/Response: N/A
Positive Standard: N/A
Cross Reaction: see page 31

Information about the analyte:
Name: Clonazepam
Group: Benzodiazepines
Brief Description: Clonazepam is approved for use as anticonvulsant. It is the 2-chloro analogue of nitrazepam, which is a potent sedative.
Trade Names: Rivotril®, Clonopin®, Klonopin®
CAS Number: 1622-61-3
Structure:



Metabolism: –>7-Amionclonazepam –>7-Acetamidoclonazepam –>3-Hydroxylation and Conjugation
Half-life in blood: 15 - 40 h
Excretion in Urine: < 1 %
Administration: oral, intravenous
Therapeutic Dose: N/A
Toxic Dose: N/A
Therapeutic Concentration: N/A
Toxic Concentration: N/A
Specialties: N/A

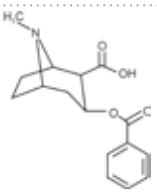
Cocaine (COC)

Order Numbers ELISA:

1700202	2	x	96	well Microtiter plates
1700205	5	x	96	well Microtiter plates
1700250	50	x	96	well Microtiter plates

Specific Test Data:
Sensitivity: 2 ng/ml
Opt. Dose/Response: 300 - 3000 pg/well
Postive Standard: 100 ng/ml Cocaine
Cross Reaction: see page 31

Information about the analyte:
Name: Cocaine
Group: Stimulants
Brief Description: Cocaine stimulates the central nervous system, is very effective and is a potent local anesthetic.
Street Names: Coke, Crack, Snow, Flake
CAS Number: 519-09-5
Structure (Benzoylecgonine):



Metabolism: (1) –>Norcocaine (2) –>Benzoylecgonine (BE) (3)–>Ecgoninemethylester –>Ecgonine
Half-life in blood: 0,4 - 1 h (Cocaine); 5 - 8 h (Benzoylecgonine)
Detection time (Urine, Cocaine): 4 - 12 h (Cut-off: 300 ng/ml)
Detection time (Urine, BE): 2 - 4 d / 5 days LongTerm Consumption (Cut-off: 300 ng/ml)
Detection time (Blood, Cocaine): 12 h (Cut-off: 10 ng/ml, Dose 100 mg intranasally)
Detection time (Blood, BE): 48 h (Cut-off: 10 ng/ml, Dose 100 mg intranasally)
Detection time (Saliva, Cocaine): 5 - 12 h (Cut-off: 1 ng/ml, Dose 25 - 42 mg)
Detection time (Saliva, BE): 12 - 24 h (Cut-off: 1 ng/ml, Dose 25 - 42 mg)
Excretion in Urine: 1 - 9 %
Administration:intranasal, oral, intravenous, inhalation
Therapeutic Dose : 20 - 70 mg
Toxic Dose: > 1000 mg
Therapeutic Concentration: 50 - 300 ng/ml
Toxic Concentration: 500 - 1000 ng/ml
Specialties: Cocaine remains in urine only for a short time, mainly in the form of the main metabolite, Benzoylecgonine.

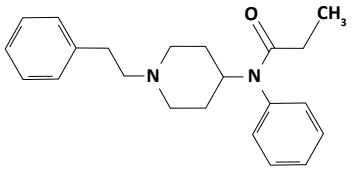
Fentanyl (FEN)

Order Numbers ELISA:

1701802	2	x	96	well Microtiter plates
1701805	5	x	96	well Microtiter plates
1701850	50	x	96	well Microtiter plates

Specific Test Data:
Sensitivity: 25 pg/ml
Opt. Dose/Response: N/A
Positive Standard: N/A
Cross Reaction: see page 31

Information about the analyte:
Name: Fentanyl
Group: Synthetic Opioide
Brief Description: Fentanyl is a synthetic opioid used as a potent analgesic in the anesthesia and transdermally used for the treatment of chronic pain.
Trade Names: Inovar®, Sublimaze®, Duragesic®
CAS Number: 437-38-7
Structure:



Metabolism: (1) –>Norfentanyl –>Hydroxynorfentanyl (2) –>Hydroxyfentanyl (3) –>Despropionfentanyl
Half-life in blood: 1 - 4 h
Excretion in Urine: 1 - 5 %
Administration: intravenous, transdermal
Therapeutic Dose: 0.025 - 0.1 mg
Toxic Dose: 2 mg
Therapeutic Concentration: 1 - 3 ng/ml
Toxic Concentration: > 3 ng/ml
Specialties: Fentanyl is lipophilic and is partially embedded in the fat tissue and delayed re-released. Fentanyl is mainly metabolised in the liver. Only 1-5% is unchanged excreted via the kidneys.

Ketamine (KET)

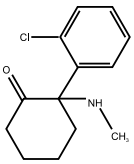
Order Numbers ELISA:

1703102	2	x	96	well Microtiter plates
1703105	5	x	96	well Microtiter plates
1703150	50	x	96	well Microtiter plates

Specific Test Data:
Sensitivity: 2 ng/ml
Opt. Dose/Response: N/A

Positive Standard: N/A
Cross Reaction: see page 31

Information about the analyte:
Name: Ketamine
Group: Narcotics, Dissociative
Brief Description: Ketamine is used in medicine and veterinary medicine as narcotics which can cause hallucinations.
Trade Names: Ketalar®
Street Names: Special K, Vitamin K
CAS Number: 6740-88-1
Structure:



Metabolism: –>Norketamine –>Dehydroketamine
Half-life in blood: 1 - 4 h
Excretion in Urine: 2 - 5 %
Administration: oral, intravenous, inhalation
Therapeutic Dose: 60 - 250 mg
Toxic Dose: > 500 mg
Theraputic Concentration: 1 - 6 µg/ml
Toxic Concentration: 7 - 10 µg/ml
Specialties: -

MDMA/Ecstasy (MDMA)

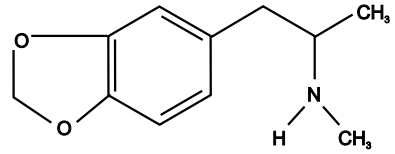
Order Numbers ELISA:

1701102	2	x	96	well Microtiter plates
1701105	5	x	96	well Microtiter plates
1701150	50	x	96	well Microtiter plates

Specific Test Data:
Sensitivity: 2 ng/ml
Opt. Dose/Response: N/A
Postive Standard: 100 ng/ml Methylenedioxymethylamphetamine
Cross Reaction: see page 31

Information about the analyte:
Name: MDMA (Ecstasy)
Group: Stimulants
Brief Description: MDMA is a psychoactive substance that can lead to both a typical amphetamine-activation as well as a hallucinogenic effect.
Street Names: Ecstasy, XTC, E
CAS Number: 42542-10-9

Structure:



Metabolism: (1) –>MDA (3,4-Methylendioxyamphetamine) –> 3,4-Dihydroxyamphetamine –> 4-Hydroxy-3-methoxyamphetamine –> Glucuronide –>Sulfate (2) –>3,4-Dihydroxymethamphetamine –>4-Hydroxy-3-methoxymethamphetamine –>Glucuronide –>Sulfate
Half-life in blood: 7 - 10 h
Detection Time (Urine): 48 h
(Cut-off: 20 ng/ml, Dose 100 mg orally)
Detection Time (Blood): 24 h
(Cut-off: 20 ng/ml, Dose 100 mg orally)
Detection Time (Saliva): 24 h
(Cut-off: 126 ng/ml, Dose 100 mg orally)
Excretion in Urine: 65 %
Administration: oral
Therapeutic Dose: 50 - 100 mg
Toxic Dose: 500 mg
Therapeutic Concentration: 100 - 350 ng/ml
Toxic Concentration: 350 - 1000 ng/ml
Specialties: MDMA is far better known as ecstasy, although the drug ecstasy often contains additional substances and not only MDMA.

Mephedrone / Methcathinone (4-MMC)

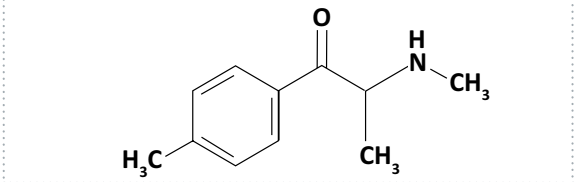
Order Numbers ELISA:

1844001	1	x	96	well Microtiter plates

Specific Test Data:
Sensitivity: N/A
Opt. Dose/Response: N/A
Postive Standard: N/A
Cross Reaction: N/A

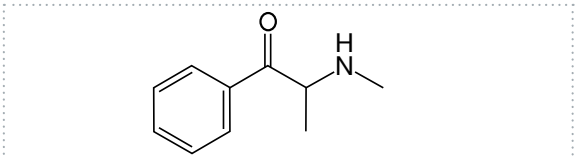
Information about the analytes:
Name: Mephedrone
Group: Stimulants
Brief Description: Mephedrone is a synthetic stimulant drug of the amphetamine and cathinone classes.
Street Names: Bubbles, M-CAT, Meow, MMC
CAS Number: 1189805-46-6

Structure:



Half-life in blood: N/A
Detection Time (Urine): N/A
Detection Time (Blood): N/A
Detection Time (Saliva): N/A
Excretion in Urine: N/A
Administration: intranasal, oral
Therapeutic Dose: N/A
Toxic Dose: N/A
Therapeutic Concentration: N/A
Toxic Concentration: N/A
Specialties: -

Name: Methcathinone
Group: Stimulans
Brief Description: Methcathinones is a mono-amine alkaloid and psychocative stimulant similar to methamphetamine.
Trade Names: 5650-44-2
CAS Number: 103-90-2
Structure:



Half-life in blood: N/A
Detection Time (Urine): N/A
Detection Time (Blood): N/A
Detection Time (Saliva): N/A
Excretion in Urine: N/A
Administration: oral
Therapeutic Dose: N/A
Toxic Dose: N/A
Therapeutic Concentration: N/A
Toxic Concentration: N/A
Specialties: -

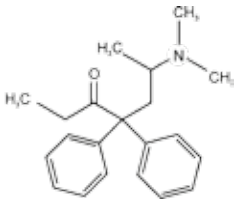
Methadone (MTD)

Order Numbers ELISA:

1700602	2	x	96	well Microtiter plates
1700605	5	x	96	well Microtiter plates
1700650	50	x	96	well Microtiter plates

Specific Test Data:
Sensitivity: 2 ng/ml
Opt. Dose/Response: 500 - 5000 pg/wel
Positive Standard: 300 ng/ml Methadone
Cross Reaction: see page 31

Information about the analyte:
Name: Methadone
Group: Synthetic Opioids
Brief Description: Methadone is an opioidic analgetic and an antagonist at the μ-opioid receptor. Methadone is used to treat addiction to opioids.
Trade Names: Dolophine®, Amidone®
Street Names: Pola, Metha, Hepta
CAS Number: 76-99-3
Structure:



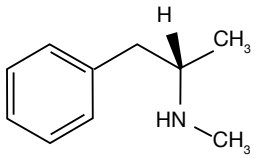
Metabolism: (1) –>EDDP –>EMDP –>Hydroxy-EMDP –>Glucuronide; (2) –>Methadol –>Nor-methadol
Half-life in blood: 13 - 55 h
Detection Time: 2 - 3 days
Excretion in Urine: 5 - 50 %
Administration: intravenous, oral
Therapeutic Dose: 40 - 100 mg
Toxic Dose: >100 - 200 mg
Therapeutic Concentration: 100 - 500 ng/ml
Toxic Concentration: 200 mg/ml
Specialties: Methadone has a ratio of 1:1 in two enantiomers with different ways of effecting. The analgesic effect is almost entirely on levomethadone (l-methadone); Dextromethadon (d-methadone) has almost no analgesic potency. In the context of drug substitution, both, levomethadone, as well as an enantiomeric mixture are used. Pure levomethadone has twice the effectiveness of the enantiomeric mixture. Methadone is metabolized in liver and kidneys.

Methamphetamine (MET)

Order Numbers ELISA:
1702102 2 x 96 well Microtiter plates
1702105 5 x 96 well Microtiter plates
1702150 50 x 96 well Microtiter plates

Specific Test Data:
Sensitivity: 2 ng/ml
Opt. Dose/Response: 300 - 3000 pg/well
Positive Standard: 100 ng/ml d-Methamphetamine
Cross Reaction: See page 31

Information about the analyte:
Name: Methamphetamine
Group: Stimulants
Brief Description: Methamphetamine and its metabolites are sympathomimetic effective substances, similar to Dextroamphetamin.
Trade Names: Desoxyn®, Methedrin®
Street Names: Meth, Doe, Crystal
CAS Number: 537-46-2
Structure:



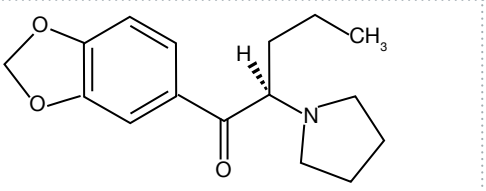
Metabolism: (1) –>Amphetamine (–> see page 17) (2) –>4-Hydroxymethamphetamine –>4-Hydroxy-amphetamine –>4-Hydroxynorephedrine
Substances with Metamphetamine as metabolite:
Dimethylamphetamine, Benzphetamine, Furfenorex, Selegilin, Fencamine –>Methamphetamine
Half-life in blood: 2 - 9 h
Detection Time (Urine): 60 h
(Cut-off: 300 ng/ml, Dose 22 mg inhaled)
Detection Time (Blood): 48 h
(Cut-off: 3 ng/ml, Dose 22 mg inhaled)
Detection Time (Saliva): 24 h
(Cut-off: 2.5 ng/ml, Dose 10 mg oral)
Excretion in Urine: 10 - 43 %
Administration: inhalation, intravenous
Theraputic Dose: 5 - 10 mg
Toxic Dose: 50 - 1000 mg
Theraputic Concentration: 5 - 60 ng/ml
Toxic Concentration: 1000 ng/ml
Specialties: Methamphetamine is excreted in urine partly as amphetamine, and partly oxidated as deaminated and hydroxilated derivates. 10 - 43% of methamphetamine, however, is excreted unchanged with the urine, which makes the discovery of methamphetamine in urine a direct reference to the amount of drug taken.

Methylendioxypyrovaleron (MDPV)

Order Numbers ELISA:
1844501 1 x 96 well Microtiter plates

Specific Test Data:
Sensitivity: N/A
Opt. Dose/Response: N/A
Postive Standard: N/A
Cross Reaction: N/A

Information about the analytes:
Name: Methylendioxypyrovaleron
Group: Stimulants
Brief Description: Methylendioxypyrovaleron is a psychoactive substance with stimulant properties that acts as a norepinephrine-dopamine reuptake inhibitor (NDRI).
Street Names: Cloud 9, MDPK, MTV
CAS Number: 24622-62-6
Structure:



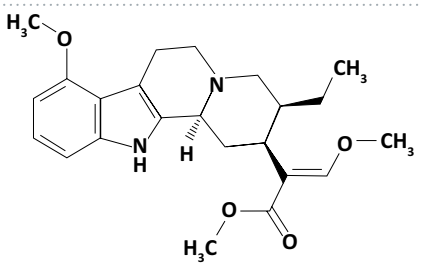
Metabolism: -
Half-life in blood: N/A
Detection Time (Urine): N/A
Detection Time (Blood): N/A
Detection Time (Saliva): N/A
Excretion in Urine: N/A
Administration: oral
Therapeutic Dose: N/A
Toxic Dose: N/A
Therapeutic Concentration: N/A
Toxic Concentration: N/A
Specialties: Originally Methylendioxyprovaleron was developed as replacement for Ritalin® but there is no medical use yet.

Mitragynine (Kratom)

Order Numbers ELISA:
1844301 1 x 96 well Microtiter plates

Specific Test Data:
Sensitivity: N/A
Opt. Dose/Response: N/A
Positive Standard: N/A
Cross Reaction: N/A

Information about the analyte:
Name: Mitragynine
Group: Analgetic
Brief Description: Mitragynine is the most abundant active alkaloid in the plant Mitragyna spaciosa, commonly known as Kratom.
Trade Names: -
Street Names: Kratom
CAS Number: 4098-40-2
Structure:



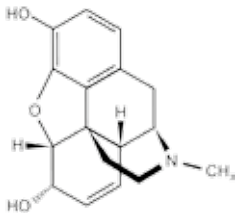
Metabolism: -
Half-life in Blood: N/A
Detection Time (Blood): N/A
Excretion in Urine: N/A
Administration: oral
Therapeutic Dose: N/A
Toxic Dose: N/A
Therapeutic Concentration: N/A
Toxic Concentration: N/A
Specialties: Mitragynine has a similar effect as Codeine but without most of the side effects.

Opiates (OPI)

Order Numbers ELISA:
1700302 2 x 96 well Microtiter plates
1700305 5 x 96 well Microtiter plates
1700350 50 x 96 well Microtiter plates

Specific Test Data:
Sensitivity: 2 ng/ml
Opt. Dose/Response: 100 - 3000 pg/well
Positive Standard: 50 ng/ml Morphine
Cross Reaction: See page 32

Information about the analyte:
Name: Morphine
Group: Opiates
Brief Description: Morphine is an alkaloid of opium. It is used in medicine as one of the strongest known natural painkillers.
Additional Opiates/Opioides:
(Opiates) Codeine, Thebaine, Oripavine;
(semi-synthetic Opioids) Dihydrocodeine, Diacetylmorphine, Buprenorphine, Hydromorphone, Hydrocodone, Oxycodone, Oxymorphone;
(full synthetic Opioids) Pethidine/Meperidine, Levomethadone, Fentanyl, Tramadol, Pentazocine, Nalbuphine, Piritramide, (Dextro-)Propoxyphene, Tilidine, Methadone.
Trade Names: Duramorph®, Morphia, Morphium
Street Names: Junk, White Stuff, Morpho, M
CAS Number: 57-27-2
Structure:



Metabolism: (1) –>Morphine-3-glucuronide (2) –>Morphine-6-glucuronide (3) Diacetylmorphine–>6-Monoacetylmorphine –>Morphine (4) Codeine –>Morphine
Half-life in Blood: 1 - 4 h
Detection Time (Urine, Morphine): 11 - 54 h (Cut-off: 300 ng/ml, Dose 10 - 15 mg intravenously)
Detection Time (Blood, Morphine): 20 h (Cut-off: 1 ng/ml, Dose 12 - 20 mg inhalation)
Detection Time (Saliva, Morphine): 12 - 24 h (Cut-off: 1 ng/ml, Dose 20 mg intramuscularly)
Excretion in Urine: < 10 %
Administration: oral, intravenous, intranasal, inhalation

Therapeutic Dose: 10 - 100 mg
Toxic Dose: > 200 mg
Therapeutic Concentration: 10 - 150 ng/ml
Toxic Concentration: > 100 ng/ml
Specialties: Heroin, a semi-synthetic derivative of morphine, is quickly converted into morphine within the body. Since the half-life is very short, you can generally expect to find morphine and morphineglucuronide within the body of a user of heroin. The drug codeine is also metabolised by the body into morphine. Therefore, the presence of morphine or its metabolite morphineglucuronide within urine can be a sign that the person is using either heroin, morphine and/or codeine.

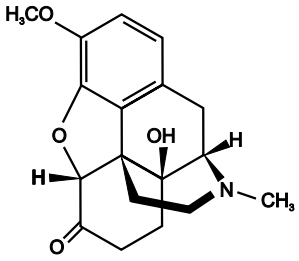
Oxycodone (OXY)

Order Numbers ELISA:

1700802	2	x	96	well Microtiter plates
1700805	5	x	96	well Microtiter plates
1700850	50	x	96	well Microtiter plates

Specific Test Data:
Sensitivity: 2 ng/ml
Opt. Dose/Response: N/A
Positive Standard: N/A
Cross Reaction: see page 32

Information about the analyte:
Name: Oxycodone
Group: Opioids
Brief Description: Oxycodone is a semisynthetic opioid similar to codeine.
Trade Names: OxyContin®, Tylox®, Percodan®, Percocet®, Dihydroxycodeinon, Dihydron
CAS Number: 76-42-6
Structure:



Metabolism: Oxymorphone, Noroxycodone
Half-Life im Blood: 2 - 5 h
Excretion in Urine: 13-19%
Administration: oral
Therapeutic Dose: 10 - 30 mg
Toxic Dose: 500 mg
Therapeutic Concentration: 20 - 50 ng/ml
Toxic Concentration: 200 ng/ml
Specialties: After oral administration of a dose of 5 mg, an urine sample was collected within 24 hours and the main components were: unchanged drug (13-19%), conjugated drug (7-29%) and conjugated Oxymorphone (13-14%). The time window for the detection of oxycodone in the urine is that of other similar opioids such as morphine.

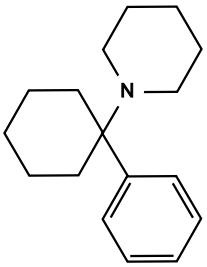
Phencyclidine (PCP)

Order Numbers ELISA:

1700902	2	x	96	well Microtiter plates
1700905	5	x	96	well Microtiter plates
1700950	50	x	96	well Microtiter plates

Specific Test Data:
Sensitivity: 0,2 ng/ml
Opt. Dose/Response: N/A
Positive Standard: N/A
Cross Reaction: see page 32

Information about the analyte:
Name: Phencyclidine
Group: Dissociative Drug
Brief Description: Phencyclidine is a dissociative acting drug that originally was classified as a narcotic.
Trade Names: PCP
Street Names: Angel Dust, Hog, Killer Weed
CAS Number: 77-10-1
Structure:



Metabolism: (1) –>4-phenyl-4-Piperidinocyclohex-anol (2) –>1-(1-phenylcyclohexyl)-4-Hydroxypiperidine
Half life of Blood: 7 - 16 h
Detection Time: 2 - 3 days (Cut-off 25 ng/ml)
Excretion in Urine: 30 - 50 %
Administration: inhalation, intravenous, oral, intranasal
Therapeutic Dose: 5 - 10 mg
Toxic Dose: >10 - 20 mg
Therapeutic Concentration: 10 - 50 ng/ml
Toxic Concentration: 100 - 240 ng/ml

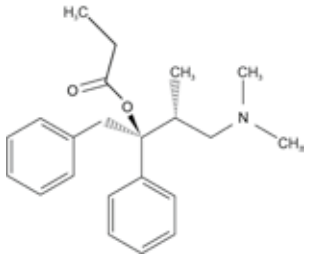
Propoxyphene (PPX)

Order Numbers ELISA:

1701202	2 x 96 well Microtiter plates
1701205	5 x 96 well Microtiter plates
1701250	50 x 96 well Microtiter plates

Specific Test Data:
Sensitivity: 2 ng/ml
Opt. Dose/Response: N/A
Positive Standard: N/A
Cross Reaction: see page 32

Information about the analyte:
Name: Propoxyphene
Brief Description: Propoxyphene is a synthetic opioid agonist with a similar structure as methadone. Propoxyphene is used to relieve moderate to severe pain and is used as an alternative to methadone in the treatment of drug addiction.
Trade Names: Dextropropoxyphene, Darvon®, Darvocet-N®
Street Names: Yellow Footballs
CAS Number: 469-62-5
Structure:



Metabolism: –>Norpropoxyphene –>Dinorpropoxyphene
Half life of Blood: 8 - 30 h
Excretion in Urine: < 1 %
Administration: oral
Therapeutic Dose: 65 - 400 mg
Toxic Dose: > 500 mg
Therapeutic Concentration: 50 - 500 ng/ml
Toxic Concentration: > 1000 ng/ml
Specialties: Propoxyphene is transformed in the liver to the active metabolite Norpropoxyphene, which has a reduced CNS calming effect than Propoxyphene, but a stronger local anesthetic effect.

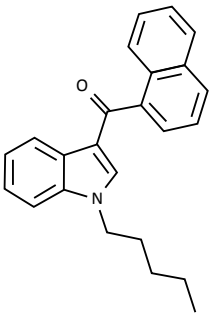
Synthetic Cannabinoids (Spice)

Order Numbers ELISA:

540701	1 x 96 well Microtiter plates (JHW/AM)
1840701	1 x 96 well Microtiter plates (UR144/XLR11)

Specific Test Data:
Sensitivity: N/A
Opt. Dose/Response: N/A
Positive Standard: N/A
Cross Reaction: see page 34

Information about the analyte:
Name: Synthetic Cannabinoids
Group: Hallucinogens
Brief Description: Spice is a mixture of different synthetic cannabinoid substances. The main substance is JWH-018.
Trade Names: Spice, K2
CAS Number: 209414-07-3 (JWH-018)
Structure:



Half life of Blood: N/A
Excretion in Urine: N/A
Administration: inhalation
Therapeutic Dose: N/A
Toxic Dose: N/A
Therapeutic Concentration: N/A
Toxic Concentration: N/A
Specialties: Different synthetic Cannabinoids are sold as so called Legal Highs.

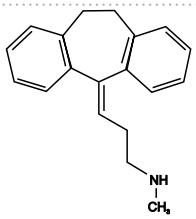
Tricyclic Antidepressants (TCA)

Order Numbers ELISA:

1702702	2	x	96	well Microtiter plates
1702705	5	x	96	well Microtiter plates
1702750	50	x	96	well Microtiter plates

Specific Test Data:
Sensitivity: 2 ng/ml
Opt. Dose/Response: N/A
Positive Standard: 200 ng/ml Nortriptyline
Cross Reaction: see page 32

Information about the analyte:
Name: Nortriptyline
Group: Antidepressant
Brief Description: Tricyclic antidepressants are the oldest group of antidepressants and have been prescribed to treat depression since the 1950s.
Other tricyclic antidepressants: Imipramine, Clomipramine, Desipramine, Amitriptyline, Doxepine, Melitracen, Trimipramine, Opipramole, Butriptyline, Dosulepine, Lofepramine, Protriptyline, Amoxapine.
Trade Names: Aventyl®, Pamelor®, Notrilen®
CAS Number: 72-69-5
Structure:



Metabolism: (1) –>10-Hydroxynortriptyline (2) Imipramine –>Desipramine (3) Clomipramine/ Desipramine –>Desmethylclomipramine (4) Amitriptyline –>Nortriptyline (5) Doxepine –>Desmethyldoxepine
Half life in Blood: 16 - 56 h
Detection Time (Urine): 2 - 3 days
(Cut-off: 500 ng/ml)
Excretion in Urine: < 5 %
Administration: oral
Therapeutic Dose: 25 - 150 mg
Toxic Dose: > 500 mg
Therapeutic Concentration: 20 - 200 ng/ml
Toxic Concentration: 500 ng/ml
Specialties: -

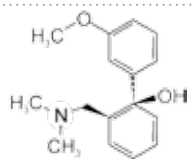
Tramadol (TML)

Order Numbers ELISA:

1702.602	2	x	96	well Microtiter plates
1702.605	5	x	96	well Microtiter plates
1702.650	50	x	96	well Microtiter plates

Specific Test Data:
Sensitivity: 10 ng/ml
Opt. Dose/Response: 500 - 800 pg/well
Positive Standard: 500 ng/ml Tramadol
Cross Reaction: see page 32

Information about the analyte:
Name: Tramadol
Group: Analgetics
Brief Description: Tramadol is a fully synthetic moderate effective opioids analgetic.
Trade Names: Tramal®, Tramundin®, Amadol®
CAS Number: 27203-92-5
Structure:



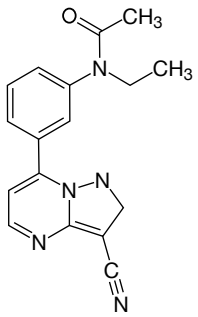
Metabolism: –>O-Desmethyltramadol –>N-Desmethyltramadol
Half life in Blood: 5 - 10 h
Excretion in Urine: 30 %
Administration: intravenous, oral
Therapeutic Dose: 50 - 100 mg
Toxic Dose: > 500 mg
Therapeutic Concentration: 100 - 800 ng/ml
Toxic Concentration: 1000 ng/ml
Specialties: Studies have shown that Tramadol concentration is significantly higher in urine than in serum. In Urine, about 30% of the dose is an unchanged drug and 70% is excreted as metabolites. Therefore urine tests are perfect to review tramadol in the context of therapeutic drug monitoring, or in forensic toxicology.

Zaleplon (ZAL)

Order Numbers ELISA:
1844101 1 x 96 well Microtiter plates

Specific Test Data:
Sensitivity: N/A
Opt. Dose/Response: N/A
Positive Standard: N/A
Cross Reaction: N/A

Information about the analyte:
Name: Zaleplon
Group: Sedative
Brief Description: Zaleplon is a nonbenzodiazepine hypnotic from the pyrazolopyrimidine class.
Trade Names: Sonata®, Starnoc®, Andante®
CAS Number: 151319-34-5
Structure:



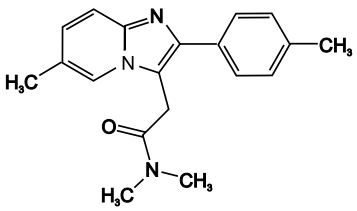
Metabolism: –>5-Oxozaleplon (1) –> N-desethylzaleplon (2)
–> 5-oxo-N-desethylzaleplone
Half life in Blood: 0.9-1.2 h
Excretion in Urine: < 0.1 %
Adminsitration: oral, intranasal
Therapeutic Dose: N/A
Toxic Dose: N/A
Therapeutic Concentration: N/A
Toxic Concentration: N/A
Specialties: The use of Zaleplone should not be longer than two weeks because of its rapid tolerance effect.

Zolpidem (ZOL)

Order Numbers ELISA:
1702802 2 x 96 well Microtiter plates
1702805 5 x 96 well Microtiter plates
1702150 50 x 96 well Microtiter plates
1842801 1 x 96 well Microtiter plates

Specific Test Data:
Sensitivity: 2 ng/ml
Opt. Dose/Response: N/A
Positive Standard: 25 ng/ml Zolpidem
Cross Reaction: see page 32

Information about the analyte:
Name: Zolpidem
Group: Sedative
Brief Description: Zolpidem is an Imidazopyridine derivative and is currently in Germany as well as in the United States the most widely spread drug to treat insomnia.
Trade Names: Ambien®, Stilnox®, Bikalm®
CAS Number: 82626-48-0
Structure:



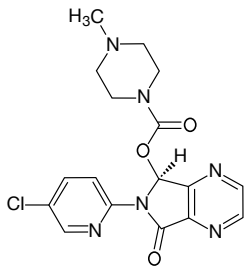
Metabolism: –>Zolpidem-COOH
Half life in Blood: 2 - 3 h
Excretion in Urine: < 1 %
Adminsitration: oral
Therapeutic Dose: 10 mg
Toxic Dose: 200 mg
Therapeutic Concentration: 80 - 150 ng/ml
Toxic Concentration: 500 - 700 ng/ml
Specialties: The effect is similar to that of benzodiazepines, though they do not have a similar structure. Zolpidem is not converted to pharmacologically active metabolites.

Zopiclone (ZPC)

Order Numbers ELISA:
1844101 1 x 96 well Microtiter plates

Specific Test Data:
Sensitivity: N/A
Opt. Dose/Response: N/A
Positive Standard: N/A
Cross Reaction: N/A

Information about the analyte:
Name: Zopiclone
Group: Sedative
Brief Description: Zopiclone is a cyclopyrrolone derivate that has been utilized clinically as a hypnotic agent since 1994.
Trade Names: Imovane®, Somnal®, Ximovan®, Lunesta®
CAS Number: 43200-80-2
Structure:



Metabolism: –>Zopiclone-N-oxide–> N-Desmethylzopiclone
Half life in Blood: 3.5 - 6.5 h
Excretion in Urine: < 5 %
Adminsitration: oral
Therapeutic Dose: 7.5 mg
Toxic Dose: 200 - 350 mg
Therapeutic Concentration: N/A
Toxic Concentration: N/A
Specialties: Zopiclone has two enantiomeres, the R-form and the S-form (Eszopiclone). Only the Eszopiclone is pharmacologically active. In medicaments a mix of both enantiomeres is used as well as the pure Eszopiclone.

Cross-reactivity

LUCIO®-Drug ELISAs are based on the principle of a specific antibody binding to target analytes in a certain sample matrix. In addition to these target analytes, compounds showing the same or similar epitopes can be bound (see tables on the following pages). The extent to which these compounds cross react depends on the concentration and type of sample matrix. The cross reactivity value is calculated from the ng/ml ratio necessary to produce a similar signal to that of the target reference concentration. Results are presented in percent CR (cross reactivity).

For example, a cross reactivity of 50% indicates that twice the amount of the compound – compared to the target analyte - is required to reach the same signal strength in the ELISA. A cross reactivity of less than 2% is considered to be very weak, a resulting percentage of 80% is considered to be very strong.

Results usually are derived with urine as the sample matrix.

Any substance can be used as the reference value. The LUCIO®-Drug ELISAs have to be calibrated and interpreted accordingly in relation to the reference substance.

Acetaminophen *(17016xx)*

Compound	Acetaminophen (µg/ml)	
	25	%CR
Acetaminophen	**25**	**100**

Amphetamine *(17001xx)*

Compound	d-Amphetamine (ng/ml)	
	25	%CR
d-Amphetamine	**25**	**100**
l-Amphetamine	570	43,8
Clomipramine	>50 000	<0,1
Dopamine	>50 000	<0,1
MDA	0,8	3125
MDMA	5 200	<1
Mephentermine	7 800	<1
d-Methamphetamine	>10 000	<1
Phentermine	120	120
Phenylpropanolamine	>50 000	<0,1
Trimethobenzamide	14 200	<1

Barbiturates *(17004xx)*

Compound	Secobarbital (ng/ml)	
	25	%CR
Secobarbital	**25**	**100**
Amobarbital	375	6,6
Aprobarbital	6 200	<1
Butabarbital	880	2,8
Butalbital	1 830	1,4
Cyclopentobarbital	1 850	1,4
Diallylbarbital	3 600	<1
Morphine-3-β-D-Glucuronide	19 200	<1
Pentobarbital	46	54,3
Phenobarbital	700	3,6
Talbutal	450	5,6
Thiopental	56	44,6

Benzodiazepine *(17005xx)*

Compound	Temazepam (ng/ml)	
	25	%CR
Temazepam	**25**	**100**
Alprazolam	0,59	4237
7-Aminoclonazepam	10 400	<1
7-Aminoflunitrazepam	120	20,8
Bromazepam	120	20,8
Chlordiazepoxide	130	19,2
Clobazepam	23	109
Clonazepam	270	9,3
Clorazepate	3,4	735
Delorazepam	140	17,9
Desmethyldiazepam	1,10	2273
Diazepam	0,16	15625
Estazolam	0,34	7353
Flunitrazepam	62,0	40,3
Flurazepam	35,0	71,5
Halazepam	5,0	500
Lorazepam	5 400	<1
Lormetazepam	530	4,7
Medazepam	105	23,8
Midazolam	15,0	167
Nitrazepam	18,4	136
Oxazepam	325	7,7
Oxazolam	10 800	<1
Prazepam	0,95	2632
Triazolam	12,4	202

Buprenorphine *(17015xx)*

Compound	Buprenorphine (ng/ml)	
	1,25	%CR
Buprenorphine	**1,25**	**100**
Norbuprenorphine	0,75	167

Cannabinoids (17007xx)

Compound	Δ⁹-THC (ng/ml)	
	4,0	%CR
Δ⁹-THC	**4,0**	**100**
Alprozolam	29 000	<0,1
Cannabidiol	0,72	556
Cannabinol	25,0	16
Delorazepam	1 180	<1
EDDP	>50 000	<0,1
α-Hydroxy-Alprozolam	349	1,1
11-Hydroxy-Δ⁹-THC	4,0	100
β-Phenylethylamine	>12 500	<0,1
Δ⁸-THC	11,0	36,4
Δ⁸-THC-Acid	0,51	784
Δ⁹-THC-Acid	1,2	334

Carisoprodol (17017xx)

Compound	Carisoprodol (ng/ml)	
	25	%CR
Carisoprodol	25	100
Meprobamate	260	680

Clonazepam (17019xx)

Compound	Clonazepam (ng/ml)	
	25	%CR
Clonazepam	**25**	**100**
Alprazolam	>50K	<0,1
7-Aminoclonazepam	2	1250
7-Aminoflunitrazepam	42	60
Bromazepam	11 000	<1
Chlordiazepoxide	24 000	<1
Clobazepam	35 000	<0,1
Clomipramine	50 000	<0,1
Clorazepate	4 000	<1
Cocaethylene	>50K	<0,1
Delorazepam	30	83,4
Desalkyl flurazepam	600	41,7
Desmethyldiazepam	3,4	735
Estazolam	42 000	<0,1
Flunitrazepam	340	7,4
Lormetazepam	12	208
d-Methaphetamine	>50K	<0,1
Nitrazepam	540	4,7
Quinidine	>50K	<0,1
Ranitidine	>50K	<0,1
Triazolam	2 000	1,3

Cocaine (17002xx)

Compound	Cocaine (ng/ml)	
	25	%CR
Cocaine	**25**	**100**
Benzoylecgonine	21,2	116
Chlorpromazine	>50 000	<0,1
Clomipramine	20 000	<1
Cocaethylene	22,5	112
Cyclobenzaprine	>50 000	<0,1
Ecgonine	3 650	<1
Imipramine	>50 000	<0,1
Isoxsuprine	1 280	2,0
Perphenazine	<0,1	>50 000
β-Phenylethylamine	>12 500	<1

Fentanyl (17018xx)

Compound	Fentanyl (pg/ml)	
	100	%CR
Fentanyl	**100**	**100**
Amitriptyline	12 000	<1
Chlorpromazine	25 200	<1
Clomipramine	3 100	3,2
Cyclobenzaprine	24 500	<1
Diphenhydramine	13 000	<1
Doxepin	19 200	<1
Ethylmorphine	29 500	<1
Fenfluramine	10 000	1
Imipramine	17 300	<1
Isoxuprine	42 000	<1
MDE	5 100	2,0
Nortriptyline	27 000	<1
Perphenazine	30 500	<1
β-Phenylethylamine	65	154
Thebaine	29 500	<1

Ketamine (17031xx)

Compound	Ketamine (ng/ml)	
	25	%CR
Ketamine	**25**	**100**
Amitriptyline	43 000	<0,1
Clomipramine	11 700	<1
Cyclobenzaprine	>50 000	<0,1
Desipramine	>5 000	<1
Imipramine	35 000	<0,1
Norketamine	700	3,6
N-methyl-1-phenylcyclohexanamine	800	3,1
Perphenazine	70 000	<0,1
Phencyclidine	820	3,1
β-Phenylethylamine	>12 500	<1

MDMA (17011xx)

Compound	MDMA (ng/ml)	
	25	%CR
MDMA	**25**	**100**
l-Amphetamine	17 500	<1
Ephedrine	>50 000	<0,1
Fenfluramine	90	27,8
N-Hydroxy-MDA	26 000	<0,1
Isoxsuprine	460	5,4
MDA	820	3,1
MDE	14	179
Mephentermine	820	3,1
d-Methamphetamine	>10 000	<1
Phentermine	7 000	<1
(R,2R)Pseudoephedrine	29 500	<0,1

Methadone (17006xx)

Compound	(+/-)Methadone (ng/ml)	
	25	%CR
Methadone	**25**	**100**
Methadol	870	2,9
(+)Methadone	23	109

Methamphetamine *(17021xx)*

Compound	d-Methamphetamine (ng/ml)	
	25	%CR
d-Methamphetamine	**25**	**100**
d-Amphetamine	5 000	<1
(+)Brompheniramine	>50 000	<0,1
Chloroquine	610	4,1
(+)Chlorpheniramine	39 000	<0,1
(+/-)Chlorpheniramine	>50 000	<0,1
Dexbrompheniramine	41 000	<0,1
EDDP	>50 000	<0,1
(-)Ephedrine	4 500	<1
Fenfluramine	190	13,2
Ketamine	>50 000	<0,1
MDA	6 400	<1
MDE	540	4,6
Mephentermine	1 500	<1
l-Methamphetamine	155	16,1
l-Phenylethylamine	8 200	<1
β-Phenylethylamine	230	10,9
Procaine	3 000	<1
(+/-)Pseudoephedrine	49 000	<0,1
(R,2R)Pseudoephedrine	>50 000	<0,1
Ranitidine	3 700	<1
Trimethobenzamide	190	13,2

Opiate *(17003xx)*

Compound	Morphine (ng/ml)	
	25	%CR
Morphine	**25**	**100**
Atropine	>50 000	<0,1
Clomipramine	>50 000	<0,1
Codeine	12	208
Diacetylmorphine	29	86,2
Ethylmorphine	12	208
Hydrocodone	133	18,8
Hydromorphone	229	10,9
Meperidine	>10 000	<1
6-Mono-Acetylmorphine	28	89,3
Morphine-3-β-D-Glucuronide	39	64,1
Nalorphine	540	4,6
Naloxone	>50 000	<0,1
Oxycodone	>10 000	<1
Thebaine	120	20,3

Oxycodone *(17008xx)*

Compound	Oxycodone (ng/ml)	
	25	%CR
Oxycodone	**25**	**100**
Codeine	4 100	<1
Diacetylmorphine	>10 000	<1
Ethylmorphine	1 780	1,4
Hydrocodone	490	5,1
Hydromorphone	2 000	1,3
6-Mono-Acetylmorphine	>10 000	<1
Morphine	>10 000	<1
Morphine-3-β-D-Glucuronide	>25 000	<1
Naloxone	>10 000	<1
Oxymorphone	136	18,4
β-Phenylethylamine	>12 500	<1
Thebaine	>10 000	<1

Phencyclidine *(17009xx)*

Compound	Phencyclidine (ng/ml)	
	4	% CR
Phencyclidine	**4**	**100**
Amitriptyline	48 000	<0,1
(+)Brompheniramine	24 000	<0,1
(+)Chlorpheniramine	25 600	<0,1
(+/-)Chlorpheniramine	32 000	<0,1
Chlorpromazine	6 100	<0,1
Cyclobenzaprine	28 100	<0,1
Dexbrompheniramine	23 200	<0,1
Doxepine	41 000	<0,1
EDDP	20 000	<0,1
4-Hydroxy-PCP	575	<1
N-methyl-1-phenylcyclohexanamine	270	1,5

Propoxyphene *(17012xx)*

Compound	d-Propoxyphene (ng/ml)	
	10	25
d-Propoxyphene	**25**	**100**
Norpropoxyphene	6,1	164
Promethazine	>50 000	<0,1

Tramadol *(17026xx)*

Compound	Tramadol (ng/ml)	
	25	%CR
Tramadol	**25**	**100**
(+/-)Chlorpheniramine	27 000	<0,1
Diphenhydramine	12 000	<1
Pheniramine	>50 000	<0,1
N-methyl-1-phenylcyclohexanamine	>10 000	<1

Tricyclic Antidepressants *(17027xx)*

Compound	Imipramine (ng/ml)	
	25	%CR
Imipramine	**25**	**100**
Amitriptyline	65	38,5
Chlorpromazine	2 170	<1
Clomipramine	340	7,4
Cyclobenzaprine	273	9,2
Desipramine	18	139
Doxepine	590	4,2
Maprotiline	9,2	272
Nortriptyline	12	208
Perphenazine	19 200	<1
Protriptyline	200	12,5
Trimipramine	780	3,2

Zolpidem *(17028xx)*

Compound	Zolpidem (ng/ml)	
	25	%CR
Zolpidem	**25**	**100**

The following substances have been tested with our LUCIO®-Drug ELISA Assays at the concentrations shown. None of these compounds showedvalues in the assays that were equal to or greater than the assays sensitivity levels except the parameters listed in the right column. The concentations for these parameters can be found in the tables on the preceding pages.

Parameter	Abbreviation	Parameter	Abbreviation
Acetaminophen	ACA	MDMA	MDMA
Amphetamine	AMP	Methadon	MTD
Barbiturats	BAR	Methamphetamine	MET
Benzodiazepines	BZD	Opiate	OPI
Buprenorphine	BUP	Oxycodone	OXY
Cannabinoids	THC	Phencyclidine	PCP
Carisoprodol	CAR	Propoxyphene	PPX
Clonazepam	CNZ	Tramadol	TML
Cocaine	COC	Tricyclic Antidepressants	TCA
Fentanyl	FYL	Zolpidem	ZOL
Ketamine	KET		

Compound	tested level (ng/ml)	Prameter with cross-reactivity
Acetaminophen	50 000	ACA
Acetylsalicylic acid	50 000	
Alprazolam	50 000	BZD
7-Aminoclonazepam	50 000	CNZ
7-Aminoflunitrazepam	50 000	BZD, CNZ
Amitriptyline	50 000	TCA
Amobarbital	50 000	BAR
d-Amphetamine	10 000	AMP
l-Amphetamine	1 000	AMP
Ampicilline	50 000	
Aprobarbital	50 000	
Ascorbic acid	50 000	
Aspartame	50 000	
Atropine	50 000	
Benzocaine	50 000	
Benzoylecgonine	10 000	COC
Bromazepam	50 000	BZD
(+) Brompheniramine	50 000	
Buprenorphine	10 000	BUP
Butabarbital	50 000	BAR
Butalbital	50 000	BAR
Caffeine	50 000	
Cannabidiol	5 000	THC
Cannabinol	5 000	THC
Carbamazepine	50 000	
Carisoprodol	50 000	CAR
Chlordiazepoxide	50 000	BZD
Chloroquine	50 000	MET
Chlorothiazide	50 000	
(+) Chlorpheniramine	50 000	
(+/-) Chlorpheniramine	50 000	
Chlorpromazine	50 000	
Clobazam	50 000	
Clomipramine	50 000	FYL, TML
Clonazepam	50 000	BZD
Clorazepate	50 000	BZD
Cocaethylene	50 000	COC
Cocaine	5 000	COC
Codeine	25 000	OPI
(-) Cotinine	50 000	
Creatine	50 000	
Cyclobenzaprine	50 000	TML
Cyclopentobarbital	50 000	BAR
Delorazepam	50 000	BZD, CNZ
Δ8-Tetrahydrocannabinol	1 000	THC
Δ8-THC-acid	500	THC
Δ9-Tetrahyrocannabinol	1 000	THC
Δ9-THC-acid	1 000	THC
Demoxepam	50 000	
Desalkylflurazepam	50 000	CNZ
Desipramine	50 000	TCA
Desmethyldiazepam	10 000	BZD, CNZ
Despropionylfentanyl	1 000	
Dexbrompheniramine	50 000	
Dextromethorphan	50 000	
Diacetylmorphine	10 000	OPI
Diallylbarbital	50 000	
Diazepam	10 000	BZD
4-Dimethylaminoantipyrine	50 000	
Diphenhydramine	50 000	
Diphenylhydantoin	50 000	
Dopamine	50 000	
Doxepine	50 000	TCA
Ecgonine	10 000	
Ecgonine Methylester	10 000	
EDDP	50 000	
(-) Ephedrine	50 000	
(-) Epinephrine	50 000	
(+/-) Epinephrine	50 000	
Erythromycin	50 000	
Estazolam	50 000	BZD
Ethylmorphine	25 000	OPI, OXY
Fenfluramine	10 000	FYl, MDMA, MET
Fentanyl	10 000	FYL
Flunitrazepam	10 000	BZD, CNZ
Flurozepam	10 000	BZD
Furosemide	50 000	
D(+) Glucose	50 000	
Gualacolglycerol	50 000	
Halazepam	10 000	BZD
Hexobarbital	50 000	
Hydrocodone	10 000	OPI, OXY
Hydromorphone	10 000	OPI, OXY
α-Hydroxy alprozolam	10 000	THC
11-Hydroxy-Δ9-THC	500	THC
4-Hydroxy-PCP	10 000	
N-Hydroxy MDA	50 000	
Ibuprofen	50 000	
Imipramine	50 000	TCA
(+/-) Isoproterenol	50 000	
Isoxsuprine	50 000	COC
Ketamine	50 000	KET
Lidocaine	50 000	
Lorazepam	10 000	
Lormetazepam	50 000	BZD, CNZ
Maprotilline	50 000	TCA
MDA	50 000	AMP, MDMA
MDE	10 000	FYL, MDMA, MET
MDMA	10 000	MDMA
Medazepam	50 000	BZD
Meperidine	10 000	
Mephentermine	50 000	MDMA
Meprobamate	50 000	CAR
Mephobarbital	100 000	
Methadol	50 000	MTD
(+) Methadone	10 000	MTD
(+/-) Methadone	5 000	MTD
d-Methamphetamine	10 000	MET
l-Methamphetamine	10 000	MET
Metharbital	100 000	
n-Methylephedrine	50 000	
N-methyl-1-phenylcyclo-hexanamine	10 000	KET, PCP
Methylphenidate	50 000	
Midazolam	10 000	BZD
6-Monoacetylmorphine	10 000	OPI
Morphine	10 000	OPI

Morphine-3-β-D-Glucuronide	25 000	OPI
Nalorphine	10 000	OPI
Naloxone	50 000	
(+) Naproxen	50 000	
Nicotine	50 000	
Nitrazepam	50 000	BZD, CNZ
Norbuprenorphine	5 000	BUP
Norclormipramine	50 000	
Norketamine	50 000	KET
Norpropxyphene	5 000	PPX
Nortriptyline	50 000	TCA
Oxalic acid	50 000	
Oxazepam	50 000	BZD
Oxazolam	50 000	
Oxycodone	10 000	OXY
Oxymorphone	10 000	OXY
Pentobarbital	50 000	BAR
Perphenazine	100 000	
Phencyclidine	1 000	KET, PCP
Pheniramine	50 000	
Phenobarbital	100 000	BAR
Phenothiazine	25 000	
Phentermine	50 000	AMP
l-Phenylalanine	50 000	
l-Phenylephrine	50 000	
β-Phenylethylamine	12 500	FYL, MET
Phenylpropanolamine	50 000	
Prazepam	10 000	BZD
Primidone	50 000	
Procaine	50 000	
Promethazine	50 000	
d-Propoxyphene	5 000	PPX
Protriptyline	50 000	TCA
(+/-) Pseudoephedrine	50 000	
(R,2R) Pseudoephedrine	50 000	
Quinidine	50 000	
Ranitidine	50 000	
Secobarbital	25 000	BAR
Sulindac	50 000	
Talbutal	50 000	BAR
Temazepam	50 000	BZD
Thebaine	50 000	OPI
Theophylline	50 000	
Thiopental	50 000	BAR
Thioridazine	50 000	
Tramadol	10 000	TML
Triazolam	50 000	BZD, CNZ
Trifluoperazine	50 000	
Trimethobenzamide	50 000	MET
Trimipramine	50 000	TCA
Tyramine	50 000	
Zolpidem	50 000	ZOL

Cross-reactivity Randox ELISAs

The following substances have been tested with the Randox ELISA Assays. The specificity of the ELISA kits is summarised in the tables below:

Spice *(540701)*

Compound	% Cross-Reactivity
JWH 018	100
4-OH JWH-018 (JWH-018 4-hydroxyindole metabolite)	9
5-OH JWH-018 (JWH-018 5-hydroxyindole metabolite)	56
6-OH JWH-018 (JWH-018 6-hydroxyindole metabolite)	215
7-OH JWH-018 (JWH-018 7-hydroxyindole metabolite)	89
N-desalkyl JWH-018: LK 1012 10CD194	3
(±)-JWH 018 N-(4-hydroxypentyl) metabolite	195
JWH-018 N-(5-hydroxyindole) metabolite	231
JWH-018 N-pentanoic acid metabolite	85
JWH-018 N-(1-methylbutyl) isomer	54
JWH-018 N-(1,2-dimethylbutyl) isomer	70
JWH-018 N-(2,2-dimethylbutyl) isomer	62
JWH-018 6-methoxyindole analogue	95
JWH-018 N-(2-methylbutyl) isomer (JWH-073 2-methylbutyl homologue)	78
JWH-018 N-(3-methylbutyl) isomer (JWH-073 3-methylbutyl homologue)	217
JWH-018 2'-naphthyl-N-(3-methylbutyl) isomer	2
JWH-018 (5'-carboxy)	206
JWH-018 (1-(4-carboxybutyl)-1H-indol-3-yl) (naphthalene-1-yl(N-carboxybutyl)	133
JWH-073	135
4-OH JWH-073 (JWH-073 4-hydroxyindole metabolite)	15
5-OH JWH-073 (JWH-073 5-hydroxyindole metabolite)	135
6-OH JWH-073 (JWH-073 6-hydroxyindole metabolite)	162
7-OH JWH-073 (JWH-073 7-hydroxyindole metabolite)	113
JWH-073 N-(3-hydroxybutyl) metabolite	164
JWH-073 N-(4-hydroxybutyl) metabolite	255
JWH-073 N-Butanol	96
JWH-073 N-Butanoic acid metabolite	37
JWH-073 4-Butanoic-acid	38
JWH-073 2-methylnaphthyl analog	14
JWH-073 4-methylnaphthyl analog	10
JWH-073 N-(2-methylpropyl)isomer	113
JWH-007	2
JWH-015	3
JWH-016	3
JWH-019	35
JWH-019 5-hydroxyindole metabolite (JWH-019-M2)	38
JWH-020	22
JWH-022	102
JWH-030	6
JWH-081 2-methoxynaphthyl isomer or (JWH-267)	3
JWH-081 5-methoxynaphthyl isomer	6.5
JWH-081 7-methoxynaphthyl isomer (JHW-164)	5
JWH-081 N-(5-hydroxypentyl) metabolite	3
JWH-122	10
JWH-122 6-methylnaphthyl isomer	7
JWH-122 7-methylnaphthyl isomer	13
JWH-122 2-methylnaphthyl isomer	12
JWH-122 N-(5-hydroxypentyl) metabolite	16
JWH-147	4

JWH-164 (JWH-081 7-methoxynaphthyl isomer)	1.7
JWH-200 4-hydroxyindole metabolite	3
JWH-200 5-hydroxyindole metabolite	63
JWH-200 6-hydroxyindole metabolite	133
JWH-210 2-ethylnaphthyl isomer	2
JWH-210 7-ethylnaphthyl isomer or JWH-234	2
JWH-398	12
JWH-398 5-chloronaphthyl isomer	5
JWH-398 N-(5-hydroxypentyl) metabolite	36
AM-694	5
AM-694 3-iodo isomer	1
AM-1220	179
(R)-AM1241	0.2
AM-2201	119
AM-2201 N-(4-fluoropentyl) isomer	176
AM-2201 N-(4-hydroxypentyl) metabolite	145
AM-2233	7
RCS-4 2-methoxy isomer	2
RCS-4 3-methoxy isomer	1
(+)WIN 55212-2 (mesylate)	2
Win 55,212-3 mesylate	3
WIN 55,225 (other name JWH-200)	127
2-OH JWH-018 (JWH-018 2-hydroxyindole metabolite)	<1
JWH-018 2'-naphthyl isomer	<1
JWH-18 adamantyl analog	<1
JWH-018 2'-naphthyl-N-(1-methylbutyl) isomer	<1
JWH-018 2'-naphthyl-N-(1,2-dimethylpropyl) isomer	<1
JWH-018 2'-naphthyl-N-(2-methylbutyl) isomer	<1
JWH-018 2'-naphthyl-N-(2,2-dimethylpropyl) isomer	<1
2-OH JWH-073 (JWH-073 2-hydroxyindole metabolite)	<1
JWH-073 2'-naphthyl-N-(1-methylpropyl) isomer	<1
JWH-073 2'-naphthyl-N-(2-methylbutyl) isomer	<1
JWH-011	<1
JWH-081	<1
JWH-098	<1
JWH-133	<1
JWH-182	<1
JWH-200 2'-naphthyl isomer	<1
JWH-201	<1
JWH-203	<1
JWH-203 3-chloro isomer (JWH-237)	<1
JWH-206 (JWH-203 4-chloro isomer)	<1
JWH-210	<1
JWH-210 N-(5-carboxypentyl) metabolite	<1
JWH-210 5-hydroxyindole metabolite	<1
JWH-250	<1
JWH-250 N-(5-hydroxypentyl) metabolite	<1
JWH-250 N-(5-carboxypentyl) metabolite	<1
JWH-250 5-hydroxyindole metabolite	<1
JWH-251	<1
JWH-251 3-methylphenyl isomer	<1
JWH-302	<1
AM251	<1
AM-630 (other name 6-Iodopravadoline)	<1
AM-694 4-iodo isomer	<5
AM-1241	<1
(S)-AM1241	<1
AM2201 2'-naphthyl isomer	<1
CB-13	<1
CB-25	<1
CB-52	<1
CB-86	<1
CP-49,497-C7 ((+-)CP47,497)	<1
CP-47,497-parap-quinone analogues	<1
CP-49,497-C8-homologues ((+-CP)47,497-C8-homologue)	<1
((+-)-CP 55,940)	<1
(-)-CP 55,940	<1
(+)-CP 55,940	<1
HU-210	<1
HU-211 (Dexanabinol)	<1
HU-308	<1
RCS-4	<1
RCS-4-C4 homologue (BTM-4,SR-19,OBT-199,E-4)	<1
RCS-4 N-(4-hydroxypentyl) metabolite	<1
RCS-4 N-(5-hydroxypentyl) metabolite	<1
RCS-4 N-(5-carboxypentyl) metabolite	<1
RCS-8 (SR-18)	<1
RCS-8 3-methoxy isomer	<1
RCS-8 4-methoxy isomer	<1
WIN-48,098 (other name Pravadoline)	<1

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