

Proficiency Testing Scheme

GTFCh

Society of Toxicological and Forensic Chemistry

2024

Proficiency Testing Scheme 2024



Drugs of Abuse

BTMF - Drugs in Serum	6
DOAB - Drugs in Blood	7
UF - Drugs in Urine	8
SFD - Toxicological Analysis for Driver Fitness Determination	9
IDS - Immunological Drug Screening in Urine	10
DHF - Drugs in Hair	11
DMS - Drug Screening in Hair	12
QSA - Qualitative Screening Analysis	13
GHB - GHB in Serum and Urine	14
SAL - Drugs in Saliva	15

Therapeutic Drug Monitoring

BZF - Benzodiazepines and Z-drugs in Serum	16
STM - Replacement Drugs in Serum and Urine	18
TCA - Tricyclic Antidepressants in Serum	19
TAB - Toxicological Analysis of Diagnostics of Brain Death	20
TDMA - Neuroleptics 1	22
TDMB - Anticonvulsants	23
TDMC - Neuroleptics 2	24
TDMD - Antidepressants 1	25
TDME - Antidepressants 2	26
OMS - Opioids in Serum	27

Alcohol

ETOH - Ethanol in Serum	28
ETB - Ethanol in Blood	29
AMF - Alcohol consumption markers in Serum	30
PETH - Phosphatidylethanol in Blood	31
BGS - Congener Alcohols in Serum	33
ETG - Ethyl glucuronide in Serum and Urine	34
EGH - Ethyl glucuronide in Hair	35

Clinical Toxicology and Chemistry

ATU - Amanitin in Urine	36
MEP - Metanephrine in Plasma	37
NIC - Nicotine and Metabolites in Serum and Urine	38

Miscellaneous

Annotations	40
Conditions of participation	41
Precision criteria	42
Contacts	44

NEW PROFICIENCY TEST OMS

OMS - Opioids in Serum: Pilot proficiency test for the quantitative determination of opioids and their metabolites in serum (see p.27)

EXTENSION - BTMF

For the analytes amphetamine and methamphetamine the possibility of a chiral analysis is offered. D-(+)- and L-(-)-amphetamine and D-(+)- and L-(-)-methamphetamine are added in different ratios and evaluated and assessed separately.

EXTENSION - BGS

The proficiencytest is extended to include the analytes acetone and isopropanol.

EXTENSION - SFD AND IDS

In both proficiency tests, the quantitative determination of creatinine is additionally offered.

EXTENSION - PETH

The proficiency test will be offered three times a year starting in 2024.

NOTES ON THE PILOT PROFICIENCY TESTS

Pilot proficiency tests serve the preparation of new tests. In these tests, the suitability of the composition of the sample material and the sample quantity are tested and optimized. The quality and scope of the incoming results are reviewed and evaluated and included in the preparation of a suitable results report. In the course of the year, these findings may result in any necessary short-term adjustments to the design of the tests. In addition to the GTFCh, the development of the concepts partly takes place with other scientific and technical partners who have the corresponding expertise. These tests are marked with a **(P)**.

Proficiency Testing Scheme

Dates, Prices, Details

DATES

BTMF 1/24	BTMF 2/24	BTMF 3/24
23-Jan – 04-Mar	28-May – 08-Jul	17-Sep – 28-Oct

PRICES

PRODUCT	Order no.	TEST		ADD. SAMPLES		
		Price	GTFCh	Order no.	Price	GTFCh
Annual subscription 2024 (participation BTMF 1 to 3/24)	1.11.500	837,-	612,-	1.11.550	300,-	270,-
Single participation						
BTMF 1/24	1.11.100	335,-	245,-	1.11.150	100,-	90,-
BTMF 2/24	1.11.200	335,-	245,-	1.11.250	100,-	90,-
BTMF 3/24	1.11.300	335,-	245,-	1.11.350	100,-	90,-

MATERIAL

Sample A: Lyophilized serum, 5 mL (2 x 2,5 mL)

For the analytes amphetamine and methamphetamine, it is possible to perform a chiral analysis. In addition to the total concentration, the respective concentrations of the enantiomers are also evaluated and certified.

Sample B: different tasks, such as the determination of DOA in whole blood or other current requirements. The sample volume is adapted to the respective requests.

In the proficiency test BTMF 2/24 whole blood is used as matrix for the B-sample. The results of this sample are also certified.

ANALYTES

Cannabinoids	Cocaine/Metabolites	Opiates	Amphetamines
Δ^9 -THC	Cocaine	Morphine	Amphetamine
11-nor- Δ^9 -Carboxy-THC	Benzoylecgonine	MAM	MDMA
11-Hydroxy- Δ^9 -THC	Ecgonine methylester	Codeine	MDE
	Cocaehtylene	DHC	MDA
			Methamphetamine

The addition of further drugs from corresponding drug classes is possible. Their determination is optional.

CONCENTRATION RANGES

Cannabinoids 0–250 | Cocaine/metabolites 0–1500 | Opiates 0–1000 | Amphetamines 0-1000

All concentrations given as $\mu\text{g/L}$

REQUESTS

Identification and quantitative determination of the analytes

DATES

DOAB 1/24	DOAB 2/24	DOAB 3/24	DOAB 4/24
06-Feb – 04-Mar	07-May – 03-Jun	20-Aug – 16-Sep	05-Nov – 02-Dec

PRICES

PRODUCT	TEST		ADD. SAMPLES	
	Order no.	Price	Order no.	Price
Annual subscription 2024 (participation DOAB 1 to 4/24)	1.12.500	715,-	1.12.550	212,-
Single participation				
DOAB 1/24	1.12.100	205,-	1.12.150	53,-
DOAB 2/24	1.12.200	205,-	1.12.250	53,-
DOAB 3/24	1.12.300	205,-	1.12.350	53,-
DOAB 4/24	1.12.400	205,-	1.12.450	53,-

MATERIAL

2 samples (A, B); lyophilized whole blood, each 2 x 2,5 mL

ANALYTES

Δ^9 -THC	DHC	Amphetamine	Ketamine
11-nor- Δ^9 -Carboxy-THC	Cocaine	MDMA	Norketamine
11-Hydroxy- Δ^9 -THC	Benzoylcegonine	MDE	Buprenorphine
Morphine	Ecgonine methylester	MDA	Norbuprenorphine
MAM	Cocaethylene	Methamphetamine	Methadone
Codeine			EDDP

Aim of the proficiency test is the determination of blood samples for the listed drugs and the quantitative determination of the detected drugs. Each sample contains 0 to 10 analytes.

REQUESTS

Identification and quantitative determination of the detected drugs.

- (P) Pilot proficiency test: The proficiency test is carried out under the organizational and scientific management of Arvecon GmbH.

DATES

UF 1/24	UF 2/24	UF 3/24
16-Jan – 19-Feb	07-May – 10-Jun	03-Sep – 07-Oct

PRICES

PRODUCT	TEST		ADD. SAMPLES	
	Order no.	Price	Order no.	Price
Annual subscription 2024 (participation UF 1 to 3/24)	1.13.500	325,-	1.13.550	165,-
Single participation				
UF 1/24	1.13.100	130,-	1.13.150	55,-
UF 2/24	1.13.200	130,-	1.13.250	55,-
UF 3/24	1.13.300	130,-	1.13.350	55,-

MATERIAL

Lyophilized urine, 2 x 10 mL

ANALYTES

5 to 8 DOA, drugs or their metabolites.

REQUESTS

Step 1: immunological tests incl. confirmation of positive results

Step 2: general unknown analysis

DATES

SFD 1/24	SFD 2/24	SFD 3/24
16-Jan – 19-Feb	07-May – 10-Jun	03-Sep – 07-Oct

PRICES

PRODUCT	TEST		ADD. SAMPLES	
	Order no.	Price	Order no.	Price
Annual subscription 2024 (participation SFD 1 to 3/24)	1.14.500	215,-	1.14.550	84,-
Single participation				
SFD 1/24	1.14.100	85,-	1.14.150	28,-
SFD 2/24	1.14.200	85,-	1.14.250	28,-
SFD 3/24	1.14.300	85,-	1.14.350	28,-

MATERIAL

Lyophilized urine, 10 mL

ANALYTES

The sample is prepared in accordance with the substance list of the assessment criteria for driver fitness determination including parent compounds, related substances (opioids, further active benzodiazepine substances, Z-drugs, amphetamines, and further amphetamine derivatives) including important products of metabolism.

TARGET ANALYTES	CONCENTRATION RANGES, µg/L
THC-COOH	10 - 150
Morphine, Codeine, Dihydrocodeine	25 - 500
Benzoylcegonine	30 - 500
Amphetamine, Methamphetamine, MDMA, MDE, MDA	50 - 500
Methadone, EDDP	20 - 500
Nordiazepam, Diazepam, Oxazepam, Hydroxy-Alprazolam, (Hydroxy-) Bromazepam, 7-Amino-flunitrazepam, Lorazepam, Zolpidem, Zopiclone	50 - 1000
Ethylglucuronide	100 - 1000
Buprenorphine, Norbuprenorphine, Nortilidine, Tilidine, Oxycodone, Tramadol, O-Desmethyltramadol, Fentanyl, Norfentanyl	3 - 200
Creatinine (quantitative determination)	

REQUESTS

Participation possible by:

1. Immunological analysis incl. quantitative confirmation analysis
2. Quantitative mass spectrometric analysis.

DATES

IDS 1/24	IDS 2/24	IDS 3/24	IDS 4/24
23-Jan – 19-Feb	30-Apr – 27-May	20-Aug – 16-Sep	05-Nov – 02-Dec

PRICES

PRODUCT	TEST		ADD. SAMPLES	
	Order no.	Price	Order no.	Price
Annual subscription 2024 (participation IDS 1 to 4/24)	1.15.500	310,-	1.15.550	108,-
Single participation				
IDS 1/24	1.15.100	88,-	1.15.150	27,-
IDS 2/24	1.15.200	88,-	1.15.250	27,-
IDS 3/24	1.15.300	88,-	1.15.350	27,-
IDS 4/24	1.15.400	88,-	1.15.450	27,-

MATERIAL

Lyophilized urine, 3 mL

ANALYTES

Aim of the proficiency test is the determination of urine samples with immunological methods for the listed drug classes and analytes. Qualitative and if possible qualitative results should be reported as well as the applied cut-off values.

DRUG CLASSES

- Amphetamines
- Methamphetamines
- Benzodiazepines
- Cannabinoids
- Cocaine/metabolites
- Opiates
- Methadone/metabolites
- Barbiturates
- Synthetic cannabinoids
- Tricyclic antidepressants
- Buprenorphine/metabolites
- Nicotine/metabolites
- LSD/metabolites
- Methyphenidate/metabolites

- Creatinine (quantitative determination)

ANALYTES

- Methadons
- EDDP
- MDMA (Ecstasy)
- 6-Monoacetyl/morphine
- Carisoprodol (Meprobamate)
- Ethylglucuronide
- Fentanyl
- Gabapentine
- Ketamine
- Oxycodone
- Phencyclidine
- Pregabalin
- Tramadol
- Zolpidem

REQUESTS

Level 1: Immunological tests including confirmatory analyses for the positive results

Level 2: Qualitative general unknown

- (P) Pilot proficiency test: The proficiency test is performed under the organizational and scientific management of Arvecon GmbH and with expert advice from Alere Toxicology Plc, UK.

DATES

DHF 1/24	DHF 2/24	DHF 3/24
20-Feb – 25-Mar	04-Jun – 08-Jul	01-Oct – 04-Nov

PRICES

PRODUCT	TEST		ADD. SAMPLES	
	Order no.	Price	Order no.	Price
Annual subscription 2024 (participation DHF 1 to 3/24)	1.16.500	435,-	1.16.550	270,-
Single participation				
DHF 1/24	1.16.100	175,-	1.16.150	90,-
DHF 2/24	1.16.200	175,-	1.16.250	90,-
DHF 3/24	1.16.300	175,-	1.16.350	90,-

MATERIAL

2 samples (A, B), each 250 mg powdered, human hair spiked with drugs

ANALYTES

SAMPLE A		SAMPLE B	
THC	Amphetamine	Oxycodone	Oxazepam
CBN	MDMA	Tramadol	Lorazepam
CBD	MDA	Tilidine	Ketamine
THC-COOH	MDE	Fentanyl	Norketamine
Morphine	Cocaine	Diazepam	Methadone
MAM	Benzoylcegonine	Nordiazepam	EDDP
Codeine	Cocaethylene	Alprazolam	Buprenorphine
		Bromazepam	Norbuprenorphine
		Flunitrazepam	

The addition of further analytes is possible, the determination is optional.

REQUESTS

Quantitative determination of the analytes. The results of both samples are certified.

DATES

DMS 1/24	DMS 2/24
09-Apr – 06-May	27-Aug – 23-Sep

PRICES

PRODUCT	TEST		ADD. SAMPLES	
	Order no.	Price	Order no.	Price
Annual subscription 2024 (participation DMS 1 and 2/24)	1.17.500	335,-	1.17.550	94,-
Single participation				
DMS 1/24	1.17.100	190,-	1.17.150	47,-
DMS 2/24	1.17.200	190,-	1.17.250	47,-

MATERIAL

1 or 2 samples, each 200 mg cut or powdered, made of drug user hair.

ANALYTES

Due to the origin of the material, the samples have different compositions. The screening should include the following analytes:

- THC
- Amphetamine
- Cocaine
- Morphine
- MDMA
- Benzoylcegonine
- MAM
- MDA

REQUESTS

Quantitative determination of the analytes

DATES

QSA 1/24	QSA 2/24	QSA 3/24
30-Jan – 26-Feb	21-May – 17-Jun	03-Sep – 30-Sep

PRICES

PRODUCT	Order no.	TEST		ADD. SAMPLES		
		Price	GTFCh	Order no.	Price	GTFCh
Annual subscription 2024 (participation QSA 1 to 3/24)	1.18.500	360,-	308,-	1.18.550	186,-	171,-
Single participation						
QSA 1/24	1.18.100	144,-	123,-	1.18.150	62,-	57,-
QSA 2/24	1.18.200	144,-	123,-	1.18.250	62,-	57,-
QSA 3/24	1.18.300	144,-	123,-	1.18.350	62,-	57,-

MATERIAL

sample A: serum, liquid, 5 mL

sample B: urine, liquid, 10 mL

ANALYTES

One or more drugs, with toxicological case history

REQUESTS

1. Identification of the drugs
2. interpretation of the results

DATES

GHB 1/24	GHB 2/24	GHB 3/24
06-Feb – 26-Feb	04-Jun – 24-Jun	01-Oct – 21-Oct

PRICES

<u>SERUM AND URINE</u> PRODUCT	<u>TEST</u>		<u>ADD. SAMPLES</u>	
	Order no.	Price	Order no.	Price
Annual subscription 2024 (participation GHB 1 to 3/24)	1.19.500	287,-	1.19.550	186,-
Single participation				
GHB 1/24	1.19.100	115,-	1.19.150	62,-
GHB 2/24	1.19.200	115,-	1.19.250	62,-
GHB 3/24	1.19.300	115,-	1.19.350	62,-

<u>ONLY SERUM</u> PRODUCT	<u>TEST</u>		<u>ADD. SAMPLES</u>	
	Order no.	Price	Order no.	Price
Annual subscription 2024 (participation GHB 1 to 3/24)	1.20.500	187,-	1.20.550	105,-
Single participation				
GHB 1/24	1.20.100	75,-	1.20.150	35,-
GHB 2/24	1.20.200	75,-	1.20.250	35,-
GHB 3/24	1.20.300	75,-	1.20.350	35,-

MATERIAL

2 samples (A, B), each 2 mL lyophilized serum; 2 samples (C, D), each 2 mL lyophilized urine

ANALYTES

Gamma hydroxybutyric acid (GHB)

REQUESTS

Quantification of the analyt

DATES

SAL 1/24	SAL 2/24
09-Apr – 06-May	10-Sep – 07-Oct

PRICES

PRODUCT	TEST		ADD. SAMPLES	
	Order no.	Price	Order no.	Price
Annual subscription 2024 (participation SAL 1 and 2/24)	1.21.500	260,-	1.21.550	96,-
Single participation				
SAL 1/24	1.21.100	140,-	1.21.150	48,-
SAL 2/24	1.21.200	140,-	1.21.250	48,-

MATERIAL

2 samples (A + B), lyophilized saliva, each 1,0 mL

ANALYTES

Cannabinoids:	THC
Amphetamines:	Amphetamine, MDMA, Methamphetamine
Cocaine and metabolites:	Cocaine, Benzoylecgonine
Opiates/Opioids:	6-Acetylmorphine, Codeine, Morphine, Buprenorphine, Norbuprenorphine, Methadone, EDDP
Benzodiazepines:	Diazepam, Nordiazepam, Flunitrazepam, Oxazepam

REQUESTS

Identification and quantitative determination of the analytes

DATES

BZF 1/24	BZF 2/24	BZF 3/24
09-Jan – 05-Feb	16-Apr – 13-May	20-Aug – 16-Sep

PRICES

PRODUCT	Order no.	TEST		ADD. SAMPLES		
		Price	GTFCh	Order no.	Price	GTFCh
Annual subscription 2024 (participation BZF 1 and 3/24)	2.30.500	378,-	313,-	2.30.550	220,-	174,-
Single participation						
BZF 1/24	2.30.100	151,-	125,-	2.30.150	73,-	58,-
BZF 2/24	2.30.200	151,-	125,-	2.30.250	73,-	58,-
BZF 3/24	2.30.300	151,-	125,-	2.30.350	73,-	58,-

MATERIAL

2 samples (A+B), lyophilized serum, each 3 mL

ANALYTES

Sample A

Diazepam	200 - 2000
Nordiazepam	200 - 1500
Bromazepam	50 - 250
Clonazepam	5 - 100
Temazepam	20 - 1000
Alprazolam	5 - 100
Zolpidem	50 - 250
Nitrazepam	20 - 200

Sample B

Flunitrazepam	10 - 25
Norfunitrazepam	10 - 50
7-Aminoflunitrazepam	10 - 70
Oxazepam	250 - 1000
Midazolam	50 - 250
α-OH-Midazolam	50 - 250
Lorazepam	20 - 300
Lormetazepam	1 - 25
Zopiclone	10 - 100

All concentrations given as µg/L

REQUESTS

Quantitative determination of the analytes

SAMPLE C

Sample C can be ordered additionally and completes the list of analytes of the A and B sample.

PRICES

PRODUCT	Order no.	TEST		ADD. SAMPLES		
		Price	GTFCh	Order no.	Price	GTFCh
Annual subscription 2024 (Participation BZF 1 to 3/24)	2.31.500	178,-	163,-	2.31.550	96,-	81,-
Single participation						
BZF 1/24	2.31.100	71,-	65,-	2.31.150	32,-	27,-
BZF 2/24	2.31.200	71,-	65,-	2.31.250	32,-	27,-
BZF 3/24	2.31.300	71,-	65,-	2.31.350	32,-	27,-

MATERIAL

One sample C, lyophilized serum, 3 mL

ANALYTES

Sample C

Clobazam	30 - 300	3-OH-Bromazepam	25 - 200
Norclonazepam	300 - 2500	7-Aminoclonazepam	10 - 75
Flurazepam	10 - 150	7-Aminonitrazepam	50 - 200
Desalkylflurazepam	25 - 100	a-OH-Alprazolam	10 - 75
Triazolam	2 - 30	Estazolam	50 - 250
a-OH-Triazolam	5 - 50	Medazepam	150 - 1000
Chlordiazepoxide	300 - 3500	Prazepam	200 - 800
Demoxepam	400 - 1000		

All concentrations given as µg/L

REQUESTS

Quantitative determination of the analytes

DATES

STM 1/24	STM 2/24	STM 3/24
09-Jan – 05-Feb	16-Apr – 13-May	20-Aug – 16-Sep

PRICES

PRODUCT	Order no.	<u>TEST</u>		<u>ADD. SAMPLES</u>		
		Price	GTFCh	Order no.	Price	GTFCh
Annual subscription 2024 (participation STM 1 to 3/24)	2.32.500	275,-	238,-	2.32.550	192,-	147,-
Single participation						
STM 1/24	2.32.100	110,-	95,-	2.32.150	64,-	49,-
STM 2/24	2.32.200	110,-	95,-	2.32.250	64,-	49,-
STM 3/24	2.32.300	110,-	95,-	2.32.350	64,-	49,-

MATERIAL

Sample A: lyophilized serum, 2,5 mL

Sample B: lyophilized urine, 2,5 mL

ANALYTES

	<u>SERUM</u>	<u>URINE</u>
Buprenorphine	1 - 20	0,5 - 100
Norbuprenorphine ...	2 - 40	0,5 - 150
Methadone	10 - 800	10 - 1000
EDDP	10 - 800	10 - 1000

All concentrations given as µg/L

REQUESTS

Quantitative determination of the analytes

DATES

TCA 1/24	TCA 2/24	TCA 3/24	TCA 4/24
16-Jan – 12-Feb	16-Apr – 13-May	02-Jul – 29-Jul	08-Oct – 04-Nov

PRICES

PRODUCT	Order no.	TEST		ADD. SAMPLES		
		Price	GTFCh	Order no.	Price	GTFCh
Annual subscription 2024 (participation TCA 1 to 4/24)	2.33.500	480,-	420,-	2.33.550	312,-	268,-
Single participation						
TCA 1/24	2.33.100	137,-	120,-	2.33.150	78,-	67,-
TCA 2/24	2.33.200	137,-	120,-	2.33.250	78,-	67,-
TCA 3/24	2.33.300	137,-	120,-	2.33.350	78,-	67,-
TCA 4/24	2.33.400	137,-	120,-	2.33.450	78,-	67,-

MATERIAL

4 samples (A, B, C, D), lyophilized serum, each 2,5 mL

ANALYTES

Sample A B	Sample C D
Doxepine	Imipramine
Nordoxepine	Desipramine
Amitriptyline	Clomipramine
Nortriptyline	Norclomipramine
Trimipramine	Maprotiline
Opipramol	DesmethyImaprotiline
	Protriptyline

All analytes 10 - 1500 µg/L

REQUESTS

Quantitative determination of the analytes

DATES

TAB 1/24	TAB 2/24
06-Feb – 26-Feb	27-Aug – 16-Sep

PRICES

PRODUCT	TEST		ADD. SAMPLES	
	Order no.	Price	Order no.	Price
Annual subscription 2024 (participation TAB 1 and 2/24)	2.34.500	219,-	2.34.550	80,-
Single participation				
TAB 1/24	2.34.100	125,-	2.34.150	40,-
TAB 2/24	2.34.200	125,-	2.34.250	40,-

MATERIAL

2 samples, lyophilized serum, each 2,5 mL

ANALYTES

Thiopental	0,5 - 3,0
Pentobarbital	0,5 - 5,0
Phenobarbital	2,0 - 50,0
Methohexital	0,25 - 3,0
Etomidate	0,1 - 0,5
Propofol	2,0 - 8,0

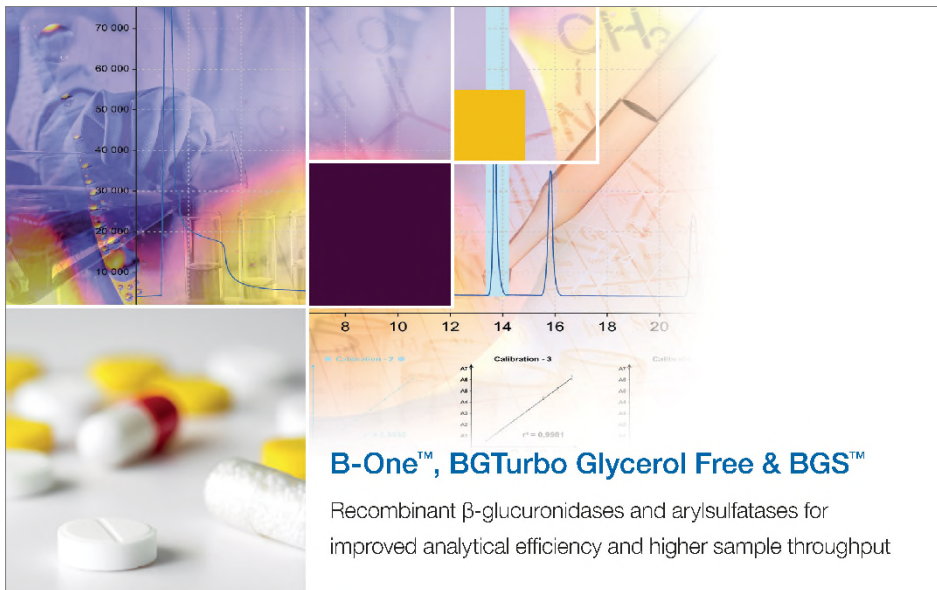
All concentrations given as mg/L

Midazolam	20,0 - 500,0
Diazepam	100,0 - 500,0
Nordiazepam	100,0 - 500,0
Fentanyl	1,0 - 10,0
Sufentanil	0,5 - 5,0
Piritramide	3,5 - 14,0

All concentrations given as µg/L

REQUESTS

Quantitative determination of the analytes

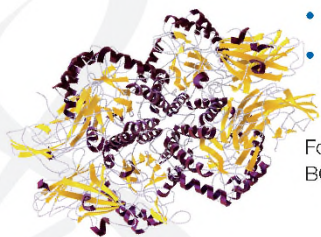


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Specialty  Diagnostix

Specialty Diagnostix GmbH

Sailerwöhr 16, 94032 Passau, Germany

Phone +49 (0)851 988 4930 0, Fax +49 (0)851 988 4930 8

info@specialtydiagnostix.de, www.specialtydiagnostix.de

DATES

TDMA 1/24	TDMA 2/24	TDMA 3/24
30-Jan – 26-Feb	14-May – 10-Jun	10-Sep – 07-Oct

PRICES

PRODUCT	Order no.	TEST		ADD. SAMPLES		
		Price	GTFCh*	Order no.	Price	GTFCh*
Annual subscription 2024 (participation TDMA 1 to 3/24)	2.35.500	388,-	350,-	2.35.550	234,-	201,-
Single participation						
TDMA 1/24	2.35.100	155,-	140,-	2.35.150	78,-	67,-
TDMA 2/24	2.35.200	155,-	140,-	2.35.250	78,-	67,-
TDMA 3/24	2.35.300	155,-	140,-	2.35.350	78,-	67,-

MATERIAL

4 samples (A, B, C, D), lyophilized serum, each 4,0 mL

ANALYTES

SAMPLE A/B		SAMPLE C/D	
Clozapine	100 - 1500	Risperidone	1 - 15
N-Desmethylclozapine	100 - 1500	Paliperidone	5 - 150
Olanzapine	10 - 100	Perazine	25 - 600
Norolanzapine	10 - 100	Ziprasidone	10 - 150
Quetiapine	25 - 600	Levomepromazine	15 - 250
Norquetiapine	50 - 300	Promethazine	50 - 500
Amisulprid	50 - 500	Chlorprothixene	10 - 400
Thioridazin	50 - 300		

All concentrations given as µg/L

REQUESTS

Quantitative determination of the analytes

DATES

TDMB1/24	TDMB 2/24	TDMB 3/24
13-Feb – 11-Mar	28-May – 24-Jun	17-Sep – 14-Oct

PRICES

PRODUCT	Order no.	TEST		ADD. SAMPLES		
		Price	GTFCh	Order no.	Price	GTFCh
Annual subscription 2024 (participation TDMB 1 to 3/24)	2.36.500	370,-	330,-	2.36.550	219,-	186,-
Single participation						
TDMB 1/24	2.36.100	148,-	132,-	2.36.150	73,-	62,-
TDMB 2/24	2.36.200	148,-	132,-	2.36.250	73,-	62,-
TDMB 3/24	2.36.300	148,-	132,-	2.36.350	73,-	62,-

MATERIAL

2 samples (A, B), lyophilized serum, 4,0 mL

ANALYTES

Carbamazepine	1 - 15
10-OH-Carbamazepine	5 - 50
Oxcarbazepine	5 - 50
Felbamate	15 - 100
Pregabalin	0,5 - 10
Gabapentin	1 - 30
Tiagabine	0,01 - 0,25
Levetiracetam	5 - 50
Topiramate	1 - 15
Vigabatrin	1 - 20
Lamotrigine	2 - 20
Lacosamide	1 - 20
Rufinamide	2 - 40
Zonisamide	5 - 60
Sultiam	2 - 8

All concentrations given as mg/L

REQUESTS

Quantitative determination of the analytes

DATES

TDMC 1/24	TDMC 2/24	TDMC 3/24
27-Feb – 25-Mar	11-Jun – 08-Jul	08-Oct – 04-Nov

PRICES

PRODUCT	Order no.	TEST		ADD. SAMPLES		
		Price	GTFCh	Order no.	Price	GTFCh
Annual subscription 2024 (participation TDMC 1 to 3/24)	2.37.500	380,-	340,-	2.37.550	219,-	186,-
Single participation						
TDMC 1/24	2.37.100	152,-	136,-	2.37.150	73,-	62,-
TDMC 2/24	2.37.200	152,-	136,-	2.37.250	73,-	62,-
TDMC 3/24	2.37.300	152,-	136,-	2.37.350	73,-	62,-

MATERIAL

2 samples (A, B), lyophilized serum, each 4,0 mL

ANALYTES

SAMPLE A/B

Aripiprazol	50 - 500
Dehydroaripiprazol	50 - 500
Flupenthixol	1,0 - 25
Fluphenazine	0,5 - 15
Haloperidol	1,0 - 25
Sertindol	25 - 150
Sulpiride	100 - 1000
Zotepine	10 - 250
Melperone	20 - 150
Pipamperone	50 - 500
Chlorpromazine	30 - 400
Prothipentyl	5 - 20
Zuclopenthixol	50 - 500

All concentrations given as µg/L

REQUESTS

Quantitative determination of the analytes

DATES

TDMD1/24	TDMD 2/24	TDMD 3/24
12-Mar – 08-Apr	25-Jun – 22-Jul	22-Oct – 18-Nov

PRICES

PRODUCT	Order no.	TEST		ADD. SAMPLES		
		Price	GTFCh	Order no.	Price	GTFCh
Annual subscription 2024 (participation TDMD 1 to 3/24)	2.38.500	370,-	330,-	2.38.550	219,-	186,-
Single participation						
TDMD 1/24	2.38.100	148,-	132,-	2.38.150	73,-	62,-
TDMD 2/24	2.38.200	148,-	132,-	2.38.250	73,-	62,-
TDMD 3/24	2.38.300	148,-	132,-	2.38.350	73,-	62,-

MATERIAL

2 samples (A, B), lyophilized serum, each 4,0 mL

ANALYTES

Duloxetine	10 - 150
Fluoxetine	25 - 500
Norfluoxetine	25 - 500
Fluvoxamine	25 - 250
Mianserine	10 - 150
Mirtazapine	25 - 150
Paroxetine	10 - 150
Reboxetine	25 - 300
Sertraline	10 - 250
Venlafaxine	25 - 400
Desmethylvenlafaxine ...	25 - 400
Citalopram	25 - 150
Trazodone	600 - 1200

All concentrations given as µg/L

REQUESTS

Quantitative determination of the analytes

DATES

TDME 1/24	TDME 2/24	TDME 3/24
26-Mar – 22-Apr	09-Jul – 05-Aug	05-Nov – 02-Dec

PRICES

PRODUCT	Order no.	TEST		ADD. SAMPLES		
		Price	GTFCh	Order no.	Price	GTFCh
Annual subscription 2024 (participation TDME 1 to 3/24)	2.39.500	370,-	330,-	2.39.550	219,-	186,-
Single participation						
TDME 1/24	2.39.100	148,-	132,-	2.39.150	73,-	62,-
TDME 2/24	2.39.200	148,-	132,-	2.39.250	73,-	62,-
TDME 3/24	2.39.300	148,-	132,-	2.39.350	73,-	62,-

MATERIAL

2 samples (A, B), lyophilized serum, each 4,0 mL

ANALYTES

SAMPLE A/B

Bupropione	10 - 100
Hydroxybupropione	850 - 1500
Milnacipran	50 - 125
Moclobemide	300 - 1000
Clomethiazol	100 - 5000
Dosulepine	45 - 100
Methylphenidate	10 - 25
Ritalinic acid	100 - 250
Atomoxetine	200 - 1000
Tianeptine	30 - 100
Tranlycypromine	10 - 50
Vilazodone	30 - 70
Vortioxetine	10 - 50

All concentrations given as µg/L

REQUESTS

Quantitative determination of the analytes

DATES

OMS 1/24	OMS 2/24
26-Mar – 22-Apr	08-Oct – 04-Nov

PRICES

PRODUCT	TEST		ADD. SAMPLES	
	Order no.	Price	Order no.	Price
Annual subscription 2024 (participation OMS 1 and 2/24)	2.40.500	175,-	2.40.550	100,-
Single participation				
OMS 1/24	2.40.100	100,-	2.40.150	50,-
OMS 2/24	2.40.200	100,-	2.40.250	50,-

MATERIAL

2 samples (A, B), lyophilized serum, each 2,5 mL

ANALYTES

SAMPLE A/B

Oxycodone	5 - 100
Hydrocodone	5 - 50
Hydromorphone	1 - 10
Tilidine	25 - 150
Nortilidine	50 - 250
Tramadol	50 - 1000
O-Desmethyltramadol	200 - 500
Fentanyl	0,2 - 10
Norfentanyl	0,2 - 10

All concentrations given as µg/L

REQUESTS

Quantitative determination of the analytes

(P) Pilot proficiency test: The proficiency test is carried out under the organizational and scientific management of Arvecon GmbH.

DATES

ETOH 1/24	ETOH 2/24	ETOH 3/24	ETOH 4/24
16-Jan – 05-Feb	09-Apr – 29-Apr	02-Jul – 22-Jul	01-Oct – 21-Oct

PRICES

PRODUCT	Order no.	TEST		ADD. SAMPLES		
		Price	GTFCh*	Order no.	Price	GTFCh*
Annual subscription 2024 (participation ETOH 1 to 4/24)	3.50.500	305,-	270,-	3.50.550	180,-	160,-
Single participation						
ETOH 1/24	3.50.100	87,-	77,-	3.50.150	45,-	40,-
ETOH 2/24	3.50.200	87,-	77,-	3.50.250	45,-	40,-
ETOH 3/24	3.50.300	87,-	77,-	3.50.350	45,-	40,-
ETOH 4/24	3.50.400	87,-	77,-	3.50.450	45,-	40,-

MATERIAL

2 samples (A, B), liquid serum, each 2,5 mL

ANALYTES

Ethanol

REQUESTS

Quantitative determination with the GC and the ADH method according to the guidelines of the Federal Health Authority BGA or its current adaptation made by the German Forensic Society (DGRM), the German Society for Traffic Medicine (DGVM) and the Society for Toxicological and Forensic Chemistry (GTFCh).

As a permissible variation from a target concentration <1,000 g/kg of whole blood or 1,236 g/l of serum a maximum of $\pm 0,05$ g/kg (0,062 g/l) is valid, of a target concentration >1,000 g/kg of whole blood or 1,236 g/l of serum a maximum of $\pm 5\%$.

DATES

ETB 1/24	ETB 2/24	ETB 3/24	ETB 4/24
23-Jan – 12-Feb	23-Apr – 13-May	09-Jul – 29-Jul	08-Oct – 28-Oct

PRICES

PRODUCT	TEST		ADD. SAMPLES	
	Order no.	Price	Order no.	Price
Annual subscription 2024 (participation ETB 1 to 4/24)	3.51.500	305,-	3.51.550	208,-
Single participation				
ETB 1/24	3.51.100	87,-	3.51.150	52,-
ETB 2/24	3.51.200	87,-	3.51.250	52,-
ETB 3/24	3.51.300	87,-	3.51.350	52,-
ETB 4/24	3.51.400	87,-	3.51.450	52,-

MATERIAL

2 samples (A+B), liquid whole blood, each 2,5 mL

ANALYTES

Ethanol

REQUESTS

Quantitative determination with GC- and/or ADH method

Accepted deviation from the target value:

- 1.) $\leq 1,0 \text{ g/kg} \pm 0,05 \text{ g/kg}$
- 2.) $> 1,0 \text{ g/kg} \pm 5\%$

(P) Pilot proficiency test: The proficiency test is carried out under the organizational and scientific management of Arvecon GmbH.

DATES

AMF 1/24	AMF 2/24	AMF 3/24	AMF 4/24
23-Jan – 19-Feb	30-Apr – 27-May	20-Aug – 16-Sep	05-Nov – 02-Dec

PRICES

PRODUCT	TEST		ADD. SAMPLES	
	Order no.	Price	Order no.	Price
Annual subscription 2024 (participation AMF 1 to 4/24)	3.52.500	294,-	3.52.550	180,-
Single participation				
AMF 1/24	3.52.100	84,-	3.52.150	45,-
AMF 2/24	3.52.200	84,-	3.52.250	45,-
AMF 3/24	3.52.300	84,-	3.52.350	45,-
AMF 4/24	3.52.400	84,-	3.52.450	45,-

MATERIAL

2 samples (A, B), lyophilized serum, each 1,0 mL

ANALYTES

CDT

REQUESTS

Quantitative determination of the analyte

DATES

PETH 1/24	PETH 2/24	PETH 3/24
13-Feb – 11-Mar	11-Jun – 08-Jul	08-Oct – 05-Nov

PRICES

PRODUCT	TEST		ADD. SAMPLES	
	Order no.	Price	Order no.	Price
Annual subscription 2024 (participation PETH 1 to 3/24)	3.53.500	275,-	3.53.550	180,-
Single participation				
PETH 1/24	3.53.100	110,-	3.53.150	60,-
PETH 2/24	3.53.200	110,-	3.53.250	60,-
PETH 3/24	3.53.300	110,-	3.53.350	60,-

MATERIAL

2 samples (A, B), lyophilized blood, each 500 µL (authentic or spiked samples)

ANALYTES

Phosphatidylethanol (PEth – 16:0/18:1)

REQUESTS

Quantitative determination of the analyte

(P) Pilot proficiency test: The proficiency test is carried out under the organizational and scientific management of Arvecon GmbH.



Accuracy controls



Simplifying Phosphatidylethanol (PEth) Analysis

ACQ Science is the 1st company to provide quality controls for the determination of the direct alcohol marker PEth:

- QC material for a broad range of analytical methods to meet the increasing demand for PEth analysis
- Whole blood controls spiked with PEth 16:0/18:1 isoform (target values at 40 and 300 ng/mL) currently on stock
- Controls and standards tailored to customer-specific concentration requirements
- Stable, lyophilized material, shelf life up to 5 years
- Together with HemaXis™, ACQ Science offers integrated solutions for quality control and sample collection to streamline PEth analysis



For more information please contact us at info@acq-science.de
HemaXis™ is a trademark of DBS System SA - for more information, visit www.hemaxis.com

Certified according to
EN ISO 9001
EN ISO 13485

ACQ Science GmbH
Etzwiesenstraße 37
72108 Rattenburg
Germany

Phone: +49 (0)7457 94693-0
Fax: +49 (0)7457 94693-69
Email: info@acq-science.de
Web: www.acq-science.de



DATES

BGS 1/24	BGS 2/24
12-Mar – 08-Apr	03-Sep – 30-Sep

PRICES

PRODUCT	TEST		ADD. SAMPLES	
	Order no.	Price	Order no.	Price
Annual subscription 2024 (participation BGS 1 and 2/24)	3.54.500	272,-	3.54.550	134,-
Single participation				
BGS 1/24	3.54.100	155,-	3.54.150	67,-
BGS 2/24	3.54.200	155,-	3.54.250	67,-

MATERIAL

eine Probe, flüssiges Serum, 1 x 2,5 mL

ANALYTES

- | | | |
|-----------------------|---------------|----------------------------|
| - Methanol | - Butan-2-ol | - 2- u. 3-Methylbutan-1-ol |
| - Propan-1-ol | - Butan-2-one | - Acetone |
| - Propan-2-ol | - Butan-1-ol | - Isopropanol |
| - 2-Methylpropan-1-ol | | |

All concentrations given as mg/L

REQUESTS

Quantitative determination of the analytes

DATES

ETG 1/24	ETG 2/24	ETG 3/24
27-Feb – 25-Mar	18-Jun – 15-Jul	15-Oct – 11-Nov

PRICES

PRODUCT	TEST		ADD. SAMPLES	
	Order no.	Price	Order no.	Price
Annual subscription 2024 (participation ETG 1 to 3/24)	3.55.500	310,-	3.55.550	156,-
Single participation				
ETG 1/24	3.55.100	124,-	3.55.150	52,-
ETG 2/24	3.55.200	124,-	3.55.250	52,-
ETG 3/24	3.55.300	124,-	3.55.350	52,-

MATERIAL

Sample A: lyophilized serum, 2,5 mL

Sample B: lyophilized urine, 2,5 mL

ANALYTES

Ethyl glucuronide, Ethyl sulfate

Concentration ranges:

Serum 0,1 - 5

Urine 0,1 – 10

All concentrations given as mg/L

REQUESTS

Quantitative determination of the analytes

DATES

EGH 1/24	EGH 2/24	EGH 3/24
20-Feb – 18-Mar	04-Jun – 01-Jul	01-Oct – 28-Oct

PRICES

PRODUCT	TEST		ADD. SAMPLES	
	Order no.	Price	Order no.	Price
Annual subscription 2024 (participation EGH 1 to 3/24)	3.56.500	300,-	3.56.550	165,-
Single participation				
EGH 1/24	3.56.100	120,-	3.56.150	55,-
EGH 2/24	3.56.200	120,-	3.56.250	55,-
EGH 3/24	3.56.300	120,-	3.56.350	55,-

MATERIAL

2 samples (A, B): each 100 mg powdered or cut, authentic human hair

ANALYTES

Ethyl glucuronide

REQUESTS

Quantitative determination of the analyte

DATES

ATU 1/24	ATU 2/24
20-Aug – 09-Sep	15-Oct –04-Nov

PRICES

PRODUCT	TEST		ADD. SAMPLES	
	Order no.	Price	Order no.	Price
Annual subscription 2024 (Participation ATU 1 and 2/24)	4.70.500	184,-	4.70.550	80,-
Single participation				
ATU 1/24	4.70.100	105,-	4.70.150	40,-
ATU 2/24	4.70.200	105,-	4.70.250	40,-

MATERIAL

2 samples (A, B), lyophilized urine, 1,2 mL

ANALYTES

Amanitin

REQUESTS

1. Quantitative determination of the analytes
2. Interpretation of the results

DATES

MEP 1/24	MEP 2/24	MEP 3/24
13-Feb – 11-Mar	04-Jun – 01-Jul	17-Sep – 14-Oct

PRICES

PRODUCT	TEST		ADD. SAMPLES	
	Order no.	Price	Order no.	Price
Annual subscription 2024 (participation MEP 1 to 3/24)	4.71.500	195,-	4.71.550	126,-
Single participation				
MEP 1/24	4.71.100	78,-	4.71.150	42,-
MEP 2/24	4.71.200	78,-	4.71.250	42,-
MEP 3/24	4.71.300	78,-	4.71.350	42,-

MATERIAL

2 samples (A+B), lyophilized plasma, each 2,5 mL

ANALYTES

Metanephrine 50 – 500 ng/L
 Normetanephrine 50 – 750 ng/L

REQUESTS

Quantitative determination of the analytes

DATES

NIC 1/24	NIC 2/24
09-Apr – 06-May	10-Sep – 07-Oct

PRICES

PRODUCT	TEST		ADD. SAMPLES	
	Order no.	Price	Order no.	Price
Annual subscription 2024 (participation NIC 1 and 2/24)	4.72.500	126,-	4.72.550	84,-
Single participation				
NIC 1/24	4.72.100	72,-	4.72.150	42,-
NIC 2/24	4.72.200	72,-	4.72.250	42,-

MATERIAL

Sample A, lyophilized serum, each 2.5 mL

Sample B, lyophilized urine, each 2.5 mL

ANALYTES

Nicotine	5 - 5000
Cotinine	5 - 8000
3-OH-Cotinine	25 - 25.000
Anabasine	2 - 500

All concentrations given as µg/L

REQUESTS

Quantitative determination of the analytes

1. PARTICIPATION

All laboratories working in the field of forensic or clinical toxicology or related fields may participate.

2. ANALYTICAL METHODS

If not stated otherwise in the requests regarding the proficiency test no special methods for analysis are prescribed.

3. REGISTRATION

Registration for participation is possible up to the start of the EQA scheme, but for organizational reasons this should be done at least one week before the start. Later registrations within the period of the respective EQA scheme are only possible on request.

4. SUBSCRIPTION AND SINGLE TEST

Enrolment may be by subscription or for an single test.

5. SUBMISSION OF RESULTS

The results of the proficiency tests may be submitted by post, fax, e-mail or via our website.

6. DEADLINE FOR RESULTS AND LATE ENTRIES

The results must have been reported by the scheduled deadline. Extensions are possible in justified cases after agreement with the test organizer. If the results are received late, the participant will receive a results report without including their own results.

7. EVALUATION

The evaluation corresponds to acknowledged scientific criteria which are supervised by accompanying working groups and/or expert groups.

8. SUBSEQUENT CORRECTIONS OF RESULTS REPORTS

Incorrect entries in the result forms can only be corrected until the reporting deadline of the respective EQA scheme. Subsequent corrections are only possible in justified cases with the approval of the GTFCh coordinators.

9. CORRECTION OF REPORTS

The participants receive their reports of results by post. In case of an incorrect analysis the participants in question are entitled to receive a corrected report. Further claims do not exist.

10. FAILURE OF TESTS

If a proficiency test cannot take place, already paid participation fees will be refunded.

1. PERIODS FOR REGISTRATION

To guarantee a punctual process of the proficiency tests, it is necessary that the results are submitted to ARVECON up to the indicated deadline. This also applies to results sent by post.. Therefore, we kindly ask you to submit your post in time or to report us your results in advance by fax or internet about your results. We recommend to transmit the results by entering them in the formula on our homepage, because only then you will receive an additional confirmation of receipt by automatic reply.

2. RESULT FORMS

All result forms and reports are available in German and English. The participants coming from a non-German speaking country automatically receive the English version of all forms. Change requests have to be indicated on the registration form or communicated separately to ARVECON

3. REPORTING OF THE RESULTS

All handwritten entries have to be made carefully and legible. Errors which are caused by a bad legibility of the entries cannot be corrected subsequently. All handwritten entries have to be made carefully and legible. Errors which are caused by a bad legibility of the entries cannot be corrected subsequently.

4. RECLAMATIONS

If you should detect errors in the analysis or the certificate after having received the results of the proficiency tests, we kindly ask you to immediately inform ARVECON. If the error has been caused by yourself by a wrong transmission of the data, according to the decision of the board of the GTFCh, no subsequent error correction is possible, even when submitting the analysis documents.

5. CORRESPONDENCE

All written requests (e-mail, post) to ARVECON can be made in German, English or French. Unfortunately, requests made in other languages can not be dealt with.

6. EVALUATION TIME

At the moment, the period of analysis of the proficiency tests comes to approx. 4 weeks.

7. SAMPLES MATERIAL

The management and the organizers of the proficiency tests may change the ingredients and the volume of the samples used for proficiency tests if this proves to be favourable and/or necessary.

8. SHIPPING OF THE SAMPLES

The shipment of the proficiency test samples usually takes place 2 - 5 working days before the official start of the proficiency test. Especially when shipping abroad, delays in delivery may occur. We have therefore included an additional week in the testing periods. If you have not received the samples one week after the official start, please notify us by phone or e-mail to the test organizer to arrange further measures.

Shipping outside Europe will be done by express service. The costs for this will be charged separately. Costs per shipment: North America EUR 35, - | Asia, Africa EUR 45, - | Oceania EUR 60, -

9. PRICES

All prices stated for the proficiency tests are net prices plus the legally prescribed value added tax. Packaging and standard shipping are included in the prices. All prices stated for the proficiency tests are net prices plus the legally prescribed value added tax. Packaging and standard shipping are included in the prices.

10. PAYMENT

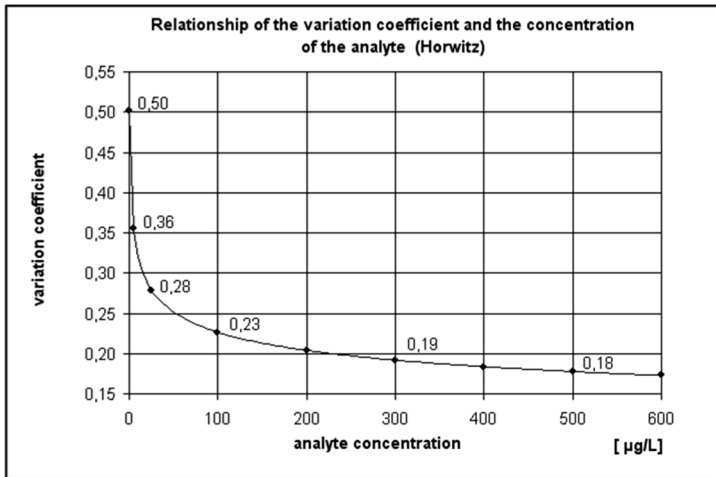
After invoicing, payment can be made by bank transfer or credit card (Mastercard, Visa). The transmission of the credit card data can be done in writing, by E-Mail or via our homepage. For the cashing of foreign checks fees of EUR 40, - will be charged.

By means of the GTFCh proficiency tests for the quantitative determination of single analytes it is possible to analyse and represent the accuracy of measurement actually to be reached according to the respective state of analysis technology in an interlaboratory comparison. Besides, the proficiency tests offer the laboratories both support and clues regarding the improvement and control as well as a forum to represent the own analytical performance.

In 1982, Horwitz [1] found out by means of 150 proficiency tests carried out independently of each other that the coefficient of variation is to be represented on average as a function of concentration:

$$VC = 2 \cdot (1 - 0.5 \log C)$$

VC = variation coefficient (%), C = concentration of the analytes as kg/L!



The standard deviation between the preferred concentration range.

Analogous to the formula, the coefficient of variation is doubling if the concentration of the analyte drops by the factor 100 (see also figure above). These now more than 30 years old data have been determined in different ranges of concentration with various analytes and five different analysis techniques, namely chromatography, AAS, spectrometry, polarography, and bioassays. As regards the 'Horwitz function' it is indicated that it is independent of samples, analytes, and methods. However, because of improvements made in the analysis technique and considering the current results of proficiency tests, there are justifiable doubts regarding its general validity. Both the detection limit and the limit of determination of a measuring method are not considered in the Horwitz function. Today, in the course of the indispensable validation of analysis techniques and with the help of user-friendly EDP programmes, these limits may also be determined at every new calibration during the laboratory routines. It is not rare that measured values being between the limit of determination and the detection limit are communicated, though in this range the quantitative determination should not be indicated any more because of the increasing measurement uncertainty to be determined statistically. Nevertheless, the coefficients of variation deduced from the equation proved to be a suitable standard to assess the efficiency at single analysis techniques or in the interlaboratory comparison. Another possibility to evaluate the results of proficiency tests is to analyse the submitted data according to DIN ISO 5725 [2]. The standard deviation of reproducibility to be calculated according to DIN ISO 5725 is only

reproducibility to be calculated according to DIN ISO 5725 is only depending on the efficiency of the participants in the proficiency test. In case of stronger diverging data pools this leads to an extension of the evaluation limits compared with the Horwitz method [3]. To calculate the evaluation limits, the method according to DIN ISO 5725 requires, however, a multiple determination (at least two independent measured values) of the analyte.

Literature:

- [1] HORWITZ W (1982)
Evaluation of analytical methods used for regulation of foods and drugs. Anal Chem 54 (1): 67A -76A
- [2] DIN ISO 5725 (1994)
International Organization for Standardization. Genauigkeit (Richtigkeit und Präzision) von Messverfahren und Messergebnissen. ISO Central Secretariat, Chemin de Blandonnet 8, CP 401, 1214 Vernier, Genf, Schweiz
- [3] Herbold M, Schmitt G, Aderjan R (2003)
Auswertung forensischer Ringversuche nach DIN ISO 5725, Beispiel: Haare - Ringversuche 2002. In: Symposium der GTFCh, Mosbach/Baden, Hrsg.: F. Pragst, R. Aderjan, Dr. Dieter Helm Verlag, Heppenheim

Proficiency Testing Organisation

ARVECON GmbH
Kiefernweg 4
69190 Walldorf
Germany

Tel. + 49 6227 6909 170

Fax + 49 6227 6909 178

E-mail info@arvecon.de

Web www.arvecon.com

ARVECON is certified according ISO 9001:2015.

Coordinators

Dr. Georg Schmitt
Institute of Legal Medicine and Traffic Medicine
University Hospital Heidelberg, Germany

E-Mail georg.schmitt@med.uni-heidelberg.de

Prof. Dr. Gisela Skopp
Forensic Toxicological Center (FTC), Munich, Germany

E-Mail g.skopp@ftc-muenchen.de

Office, GTFCh

PD Dr. Frank T. Peters
Institute of Legal Medicine
University Hospital Jena
Fürstengraben 23
07743 Jena
Germany

Telefon +49 3641 9-35584

Fax: +49 3641 9-37902

E-Mail office@gtfch.org

Please send your application for membership of GTFCh to this address.

President GTFCh

Prof. Dr. Volker Auwärter
Institute of Legal Medicine
University Hospital Freiburg
Albertstr. 9
79104 Freiburg