



2018

Proficiency Testing Scheme GTFCh

SOCIETY OF TOXICOLOGICAL AND FORENSIC CHEMISTRY

Proficiency Testing Scheme 2018

Contacts	2
-----------------	---

Drugs of Abuse

BTMF - Drugs in Serum	4
UF - Drugs in Urine	5
SFD - Toxicological Analysis for Driver Fitness Determination	6
DHF - Drugs in Hair	7
DMS - Drug Screening in Hair	8
QSA - Qualitative Screening Analysis	9
GHB - GHB in Serum	10

Therapeutic Drugs

BZF - Benzodiazepine and Z-drugs in Serum	11
STM - Replacement Drugs in Serum and Urine	12
TCA - Tricyclic Antidepressants in Serum	13
TAB - Toxicological Analysis of Diagnostics of Brain Death	14
TDMA - Neuroleptics 1	15
TDMB - Anticonvulsants	16
TDMC - Neuroleptics 2	17
TDMD - Antidepressants	18

Alcohol

ETOH - Ethanol in Serum	19
AMF - Alcohol Consumption Markers in Serum	20
BCS - Congener Alcohols in Serum	21
ETG - Ethylglucuronide in Serum and Urine	22
EGH - Ethylglucuronide in Hair	23

Clinical Toxicology and Chemistry

ATU - Amanitine in Urine	24
HCY - Homocysteine in Serum	25

Pilot Proficiency Tests

DOAB - Drug Screening in Blood	27
ETB - Ethanol in Blood	28
IDS - Immunological Drug Screening in Urine	29

Miscellaneous

Annotations to the proficiency tests	31
Conditions of participation	33
Precision criteria	34

Proficiency Testing Organisation

ARVECON GmbH
Kiefernweg 4
69190 Walldorf
Germany

Tel. + 49 6227 6909 170
Fax + 49 6227 6909 179
E-mail info@arvecon.de
Web www.arvecon.com



Certified acc. to ISO 9001:2008

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

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

GTFCh Office

PD Dr. Frank T. Peters
Institut für Rechtsmedizin
Universitätsklinikum Jena
Fürstengraben 23
07743 Jena, Germany

Tel. + 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 der GTFCh

Prof. Dr. Stefan Tönnes
Institut für Rechtsmedizin
Kennedyallee 104
60596 Frankfurt am Main
Germany

Proficiency Testing Scheme

[Dates](#)

[Prices](#)

[Details](#)

Dates

BTMF 1/18	BTMF 2/18	BTMF 3/18
30-Jan – 12-Mar	05-Jun – 16-Jul	02-Oct – 12-Nov

Prices

	Order no.	Price	GTFCh*
Price per proficiency test	11N00	295,--	210,--
Additional sample set	11N50	90,--	80,--
N = test 1 to 3			
Annual subscription 2018 (participation BTMF 1 to 3/18)	11500	730,--	520,--
Add. sample set for subscription (1 x per test)	11550	270,--	240,--

all prices in EUR, incl. standard shipping costs**, plus 19% VAT

* price for members of GTFCh ** see annotations p.32

Material

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

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

In the proficiency test BTMF 2/18 whole blood is used as matrix for sample B.

Details

Analyte

Cannabinoids

Δ^9 -THC
11-nor- Δ^9 -Carboxy-THC
11-Hydroxy- Δ^9 -THC

Cocaine/-metabolite

Cocaine
Benzoylecgonine
Ecgonine methylester

Opiates

Morphine
MAM
Codeine
DHC

Amphetamines

Amphetamine
MDMA
MDE
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 - 750
Opiates	0 - 1000	Amphetamines	0 - 1000

All indications given as µg/L

Requests

Identification and quantitative determination of the analytes

Dates

UF 1/18	UF 2/18	UF 3/18
23-Jan – 26-Feb	15-May – 18-Jun	11-Sep – 15-Oct

Prices

	Order no.	Price
Price per proficiency test	12N00	110,--
Additional sample set	12N50	50,--
N = test 1 to 3		
Annual subscription 2018 (participation UF 1 to 3/18)	12500	280,--
Add. sample set for subscription (1 x per test)	12550	150,--

all prices in EUR, incl. standard shipping costs**, plus 19% VAT

** see annotations p.32

Material

2 samples, lyophilized urine, each 10 mL

Details

Analytes

5 to 8 DOA, drugs or their metabolites

Requests

Step 1: immunological tests incl. confirmation of positive results

Step 2: general unknown analysis

We recommend to perform the analyses with mass spectrometric methods.

SFD – TOXICOLOGICAL ANALYSIS FOR DRIVER FITNESS DETERMINATION

Dates

SFD 1/18	SFD 2/18	SFD 3/18
23-Jan – 26-Feb	15-May – 18-Jun	11-Sep – 15-Oct

Prices

	Order no.	Price
Price per proficiency test	15N00	75,-
Additional sample set	15N50	25,-
N = test 1 to 3		
Annual subscription 2018 (participation SFD 1 to 3/18)	15500	190,-
Add. sample set for subscription (1 x per test)	15550	75,-

all prices in EUR, incl. standard shipping costs**, plus 19% VAT

** see annotations p.32

Material

1 sample, lyophilized urine, 10 mL

Details

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.

Requests

Toxicological analysis for driver fitness determination

Participation possible by:

- 1) immunological analysis incl. quantitative confirmation analysis
- 2) quantitative mass-spectrometric analysis.

Dates

DHF 1/18	DHF 2/18	DHF 3/18
27-Feb – 03-Apr	12-Jun – 16-Jul	09-Oct – 12-Nov

Prices

	Order no.	Price
Price per proficiency test	13N00	160,-
Additional sample set	13N50	90,-
N = test 1 to 3		
Annual subscription 2018 (participation DHF 1 to 3/18)	13500	395,-
Add. sample set for subscription (1 x per test)	13550	270,-

all prices in EUR, incl. standard shipping costs**, plus 19% VAT

** see annotations p.32

Material

2 samples (A, B), each 250 mg powdered, human hair spiked with drugs
The results of both samples are certified.

Details**Analytes**

<u>Sample A</u>	<u>Sample B</u>
THC	Oxycodone
THC-COOH	Tramadol
Morphine	Tilidine
MAM	Fentanyl
Codeine	Diazepam
Amphetamine	Nordiazepam
MDMA	Alprazolam
MDA	Bromazepam
MDEA	Flunitrazepam
Cocaine	Oxazepam
Benzoyllecgonine	Lorazepam
Cocaethylene	Ketamine
	Methadone
	EDDP
	Buprenorphine

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

Requests

Quantitative determination of the analytes

Dates

DMS 1/18	DMS 2/18
17-Apr – 14-May	04-Sep – 01-Oct

Prices

	Order no.	Price
Price per proficiency test	16N00	175,-
Additional sample*	16N50	40,-
* limited availability (1 sample)		N = test 1 or 2
 Annual subscription 2018 (participation DMS 1 and 2/18)	 16500	 300,-
Add. sample set for subscription (1 sample per test)	16550	80,-

all prices in EUR, incl. standard shipping costs**, plus 19% VAT

** see annotations p.32

Material

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

Details

Analytes

Different composition. The screening should include at least THC, morphine, MAM, amphetamine, MDMA, MDA, cocaine and benzoylecgonine. The presence of other analytes is possible.

Requests

Quantitative determination of the analytes

Dates

QSA 1/18	QSA 2/18	QSA 3/18
06-Feb – 05-Mar	29-May – 25-Jun	11-Sep – 08-Oct

Prices

	Order no.	Price	GTFCh*
Price per proficiency test	14N00	125,--	105,--
Additional sample*	14N50	55,--	50,--
* limited availability (1 sample)	N = test 1 to 3		
Annual subscription 2018 (participation DMS 1 and 2/18)	14500	315,--	265,--
Add. sample set for subscription (1 sample per test)	14550	165,--	150,--

all prices in EUR, incl. standard shipping costs**, plus 19% VAT

** see annotations p.32

Material

sample A: serum, liquid, 5 mL

sample B: urine, liquid, 10 mL

Details

Analytes

One or more drugs, with toxicological case history

Requests

Identification of the drugs and interpretation of the results

Dates

GHB 1/18	GHB 2/18	GHB 3/18
13-Feb – 05-Mar	12-Jun – 02-Jul	09-Oct – 29-Oct

Prices

	Order no.	Price
Price per proficiency test	17N00	60,-
Additional sample set	17N50	25,-
N = test 1 to 3		
Annual subscription 2018 (participation GHB 1 to 3/18)	17500	150,-
Add. sample set for subscription (1 x per test)	17550	60,-

all prices in EUR, incl. standard shipping costs**, plus 19% VAT

** see annotations p.32

Material

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

Details

Analytes

Gamma hydroxybutyric acid

Requests

Identification and quantification of the analyt

BZF – BENZODIAZEPINES AND Z-DRUGS IN SERUM

Dates

BZF 1/18	BZF 2/18	BZF 3/18
16-Jan – 12-Feb	24-Apr – 21-May	28-Aug – 24-Sep

Prices

	Order no.	Price	GTFCh*
Price per proficiency test	21N00	130,--	105,--
Additional sample set	21N50	70,--	55,--
N = test 1 to 3			
Annual subscription 2018 (participation BZF 1 to 3/18)	21500	330,--	265,--
Add. sample set for subscription (1 x per test)	21550	210,--	165,--

all prices in EUR, incl. standard shipping costs**, plus 19% VAT

*price for GTFCh members ** see annotations p.32

Material

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

Details

Analytes and concentration ranges

Sample A		Sample B	
Diazepam	200 - 2000	Flunitrazepam	10 - 25
Nordiazepam	200 - 1500	Norflunitrazepam	10 - 50
Bromazepam	50 - 250	7-Aminoflunitrazepam	10 - 70
Clonazepam	5 - 100	Oxazepam	250 - 1000
Temazepam	20 - 1000	Midazolam	50 - 250
Alprazolam	5 - 100	Lorazepam	20 - 300
Zolpidem	50 - 250	Lormetazepam	1 - 25
Nitrazepam	20 - 200	Zopiclone	10 - 100
		ACP	10 - 100

all concentrations given as µg/L

Requests

Quantitative determination of the analytes

STM – REPLACEMENT DRUGS IN SERUM AND URINE

Dates

STM 1/18	STM 2/18	STM 3/18
23-Jan – 19-Feb	08-May – 04-Jun	04-Sep – 01-Oct

Prices

	Order no.	Price	GTFCh*
Price per proficiency test	22N00	95,--	80,--
Additional sample set	22N50	60,--	45,--
N = test 1 to 3			
Annual subscription 2018 (participation STM 1 to 3/18)	22500	225,--	200,--
Add. sample set for subscription (1 x per test)	22550	120,--	135,--

all prices in EUR, incl. standard shipping costs**, plus 19% VAT

*price for GTFCh members ** see annotations p.32

Material

Sample A: lyophilized serum, 2,5 mL

Sample B: lyophilized urine, 2,5 mL

Details

Analytes

buprenorphine, methadone, norbuprenorphine, EDDP

Concentration ranges

Analyte	Serum	Urine
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

TCA – TRICYCLIC ANTIDEPRESSANTS IN SERUM

Dates	TCA 1/18	TCA 2/18	TCA 3/18	TCA 4/18
	23-Jan – 19-Feb	24-Apr – 21-May	10-Jul – 06-Aug	16-Oct – 12-Nov

Prices	Order no.	Price	GTFCh*
Price per proficiency test	23N00	110,--	95,--
Additional sample set	23N50	70,--	60,--
N = test 1 to 4			
Annual subscription 2018 (participation TCA 1 to 4/18)	23500	390,--	335,--
Add. sample set for subscription (1 x per test)	23550	245,--	210,--

all prices in EUR, incl. standard shipping costs**, plus 19% VAT
 *price for GTFCh members ** see annotations p.32

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

Details

Analytes and concentration ranges

samples A / B

doxepine
 nordoxepine
 amitriptyline
 nortriptyline
 trimipramine
 opipramol

samples C / D

imipramine
 desipramine
 clomipramine
 norclomipramine
 maprotiline
 desmethylmaprotiline

all analytes 10 - 1500 µg/L

Requests

Quantitative determination of the analytes

TAB – TOXICOLOGICAL ANALYSIS OF DIAGNOSTICS OF BRAIN DEATH

Dates

TAB 1/18	TAB 2/18
13-Feb – 05-Mar	28-Aug – 17-Sep

Prices

	Order no.	Price
Price per proficiency test	24N00	105,-
Additional sample set	24N50	35,-
N = test 1 to 2		
Annual subscription 2018 (participation TAB 1 and 2/18)	24500	200,-
Add. sample set for subscription (1 x per test)	24550	70,-

all prices in EUR, incl. standard shipping costs**, plus 19% VAT

** see annotations p.32

Material

2 samples, lyophilized serum, each 2,5 mL

Details

Analytes and concentration ranges

thiopental	0,5 - 3
pentobarbital	0,5 - 5
phenobarbital	2,0 - 50
methohexital	0,25 - 3
all concentrations given as mg/L	

midazolam	20 - 500
diazepam	100 - 500
nordiazepam	100 - 500
fentanyl	1 - 10
sufentanil	0,5 - 0,5
all concentrations given as µg/L	

Requests

Quantitative determination of the analytes

Dates

TDMA 1/18	TDMA 2/18	TDMA 3/18
06-Feb – 05-Mar	22-May – 18-Jun	18-Sep – 15-Oct

Prices

	Order no.	Price	GTFCh*
Price per proficiency test	25N00	130,--	115,--
Additional sample set	25N50	75,--	65,--
N = test 1 to 3			
Annual subscription 2018 (participation TDMA 1 to 3/18)	25500	325,--	290,--
Add. sample set for subscription (1 x per test)	25550	225,--	195,--

all prices in EUR, incl. standard shipping costs**, plus 19% VAT

*price for GTFCh members ** see annotations p.32

Material

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

Details

Analytes and concentration ranges

samples A/B

clozapine	100 - 1500
N-desmethylozapine	100 - 1500
olanzapine	10 - 100
quetiapine	25 - 600
amisulpride	50 - 500
thioridazine	50 - 300
chlorprothixene	10 - 400

samples C/D

risperidone	1 - 15
paliperidone*	5 - 150
perazine	25 - 600
ziprasidone	10 - 150
levomepromazine	15 - 250
promethazine	50 - 500

all concentrations given as µg/L

* 9-hydroxyrisperidone

Requests

Quantitative determination of the analytes

Dates

TDMB 1/18	TDMB 2/18	TDMB 3/18
20-Feb – 19-Mar	05-Jun – 02-Jul	02-Oct – 29-Oct

Prices

	Order no.	Price	GTFCh*
Price per proficiency test	26N00	125,-	110,-
Additional sample set	26N50	65,-	55,-
N = test 1 to 3			
Annual subscription 2018 (participation TDMB 1 to 3/18)	26500	315,-	280,-
Add. sample set for subscription (1 x per test)	26550	195,-	165,-

all prices in EUR, incl. standard shipping costs**, plus 19% VAT

*price for GTFCh members ** see annotations p.32

Material

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

Details

Analytes and concentration ranges

carbamazepine	1 - 15
10-OH-carbamazepine	5 - 50
oxcarbazepine	5 - 50
felbamate	15 - 100
pregabalin	0,5 - 10
gabapentine	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

all concentrations given as mg/L

Requests

Quantitative determination of the analytes

Dates

TDMC 1/18	TDMC 2/18	TDMC 3/18
06-Mar – 03-Apr	19-Jun – 16-Jul	16-Oct – 12-Nov

Prices

	Order no.	Price	GTFCh*
Price per proficiency test	27N00	125,--	110,--
Additional sample set	27N50	65,--	55,--
N = test 1 to 3			
Annual subscription 2018 (participation TDMC 1 to 3/18)	27500	315,--	280,--
Add. sample set for subscription (1 x per test)	27550	195,--	165,--

all prices in EUR, incl. standard shipping costs**, plus 19% VAT
 *price for GTFCh members ** see annotations p.32

Material

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

Details

Analytes and concentration ranges

aripiprazol	50 - 500
dehydroaripiprazol	50 - 500
flupenthixol	1,0 - 25
fluphenazine	0,5 - 15
haloperidol	1,0 - 25
sertindol	25 - 150
sulpiride	100 - 1000
melperone	20 - 150
pipamperone	50 - 500

all concentrations given as µg/L

Requests

Quantitative determination of the analytes

Dates

TDMD 1/18	TDMD 2/18	TDMD 3/18
20-Mar – 16-Apr	03-Jul – 30-Jul	30-Oct – 26-Nov

Prices

	Order no.	Price	GTFCh*
Price per proficiency test	28N00	125,-	110,-
Additional sample set	28N50	65,-	55,-
N = test 1 to 3			
Annual subscription 2018 (participation TDMD 1 to 3/18)	28500	315,-	280,-
Add. sample set for subscription (1 x per test)	28550	195,-	165,-

all prices in EUR, incl. standard shipping costs**, plus 19% VAT
 *price for GTFCh members ** see annotations p.32

Material

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

Details

Analytes and concentration ranges

duloxetine	10 - 150	paroxetine	10 - 150
fluoxetine	25 - 500	reboxetine	25 - 350
norfluoxetine	25 - 500	sertralien	10 - 250
fluvoxamine	25 - 250	venlafaxine	25 - 400
mianserine	10 - 150	desmethylvenlafaxine	25 - 400
mirtazapine	25 - 150	citalopram	25 - 150

all concentrations given as µg/L

Requests

Quantitative determination of the analytes

Dates

ETOH 1/18	ETOH 2/18	ETOH 3/18	ETOH 4/18
23-Jan – 12-Feb	17-Apr – 07-May	10-Jul – 30-Jul	09-Oct – 29-Oct

Prices

	Order no.	Price	GTFCh*
Price per proficiency test	31N00	75,--	65,--
Additional sample set	31N50	50,--	35,--
N = test 1 to 4			
Annual subscription 2018 (participation ETOH 1 to 4/18)	31500	270,--	230,--
Add. sample set for subscription (1 x per test)	31550	200,--	140,--

all prices in EUR, incl. standard shipping costs**, plus 19% VAT

*price for GTFCh members ** see annotations p.32

Material

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

Details

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 $\pm 5\%$.

AMF – ALCOHOL CONSUMPTION MARKERS IN SERUM

Dates

AMF 1/18	AMF 2/18	AMF 3/18	AMF 4/18
30-Jan – 26-Feb	08-May – 04-Jun	21-Aug – 17-Sep	13-Nov – 10-Dec

Prices

	Order no.	Price
Price per proficiency test	32N00	75,-
Additional sample set	32N50	40,-
N = test 1 to 4		
Annual subscription 2018 (participation AMF 1 to 4/18)	32500	275,-
Add. sample set for subscription (1 x per test)	32550	160,-

all prices in EUR, incl. standard shipping costs**, plus 19% VAT

** see annotations p.32

Material

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

Details

Analytes

CDT

Requests

Quantitative determination of CDT and interpretation of the results

Dates

BGS 1/18	BGS 2/18
20-Mar – 16-Apr	11-Sep – 08-Oct

Prices

	Order no.	Price
Price per proficiency test	33N00	140,--
Additional sample	33N50	65,--
N = test 1 to 2		
Annual subscription 2018 (participation BGS 1 and 2/18)	33500	235,--
Add. sample for subscription (1 x per test)	33550	130,--

all prices in EUR, incl. standard shipping costs**, plus 19% VAT

** see annotations p.32

Material

1 sample, liquid serum, 2,5 mL

Details

Analytes

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

Requests

Quantitative determination of the analytes

ETG – ETHYLGLUCURONIDE IN SERUM AND URINE

Dates

ETG 1/18	ETG 2/18	ETG 3/18
06-Mar – 03-Apr	26-Jun – 23-Jul	23-Oct – 19-Nov

Prices

	Order no.	Price
Price per proficiency test	34N00	110,--
Additional sample set	34N50	45,--
N = test 1 to 3		
Annual subscription 2018 (participation ETG 1 to 3/18)	34500	280,--
Add. sample set for subscription (1 x per test)	34550	135,--

all prices in EUR, incl. standard shipping costs**, plus 19% VAT

** see annotations p.32

Material

Sample A: lyophilized serum, 2,5 mL

Sample B: lyophilized urine, 2,5 mL

Details

Analyte

Ethylglucuronide, Ethylsulfate

Concentration ranges, mg/L

sample A: serum: 0.5 - 5

sample B: urine: 1.0 - 10

Requests

Quantitative determination of the analytes

Dates

EGH 1/18	EGH 2/18	EGH 3/18
27-Feb – 26-Mar	12-Jun – 09-Jul	09-Oct – 05-Nov

Prices

	Order no.	Price
Price per proficiency test	35N00	110,--
Additional sample set*	35N50	50,--
* limited availability (1 sample set)		N = test 1 to 3
Annual subscription 2018 (participation EGH 1 to 3/18)	35500	275,--
Add. sample set for subscription (1 x per test)	35550	150,--

all prices in EUR, incl. standard shipping costs**, plus 19% VAT

** see annotations p.32

Material

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

Details

Analytes

Ethylglucuronide

Requests

Quantitative determination of the analyte

Dates

ATU 1/18	ATU 2/18
21-Aug – 10-Sep	23-Oct – 12-Nov

Prices

	Order no.	Price
Price per proficiency test	41N00	95,--
Additional sample set	41N50	35,--
N = test 1 to 2		
Annual subscription 2018 (participation ATU 1 and 2/18)	41500	150,--
Add. sample set for subscription (1 x per test)	41550	70,--

all prices in EUR, incl. standard shipping costs**, plus 19% VAT

** see annotations p.32

Material

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

Details

Analyte

Amanitine

Requests

Quantitative determination of the analytes, interpretation of the results

Dates

HCY 1/18	HCY 2/18
13-Mar – 03-Apr	21-Aug – 10-Sep

Prices

	Order no.	Price
Price per test	42N00	65,-
Additional sample set	42N50	30,-
N = test 1 to 2		
Annual subscription 2018 (participation HCY 1 and 2/18)	42500	225,-
Add. sample set for subscription (1 x per test)	42550	120,-

all prices in EUR, incl. standard shipping costs**, plus 19% VAT

** see annotations p.32

Material

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

Details

Analytes

homocysteine

Concentration range

homocysteine 1 - 50 $\mu\text{mol/L}$ \cong 0,1 – 7 mg/L

Request

Quantitative determination of homocysteine

Pilot proficiency tests

Pilot proficiency tests are performed to prepare new official proficiency tests. In these tests, the suitability of the composition of the sample material as well as the quantity of the sample are tested and optimized. The quality and amount of the incoming results are assessed and included in the preparation of an appropriate results report. Based on these findings, it may also be necessary to adapt the design of the tests during the course of the year.

Dates

DOAB 1/18	DOAB 2/18	DOAB 3/18	DOAB 4/18
13-Feb – 12-Mar	15-May – 11-Jun	21-Aug – 17-Sep	13-Nov – 10-Dec

Prices

	Order no.	Price
Price per proficiency test	52N00	175,-
Additional sample set	52N50	45,-
N = test 1 to 4		
Annual subscription 2018 (participation DOAB 1 to 4/18)	52500	615,-
Add. sample set for subscription (1 x per test)	52550	160,-

all prices in EUR, incl. standard shipping costs**, plus 19% VAT

** see annotations p.32

Material

2 samples A and B, lyophilized whole blood, each 2,5 mL
Each sample contains 0 to 10 analytes.

Details

Analytes

Aim of the proficiency test is the determination of blood samples for the listed drugs and the quantitative determination of the detected drugs.

Table of analytes

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

Requests

Identification and quantitative determination of the detected drugs.

Dates

ETB 1/18	ETB 2/18	ETB 3/18	ETB 4/18
23-Jan – 12-Feb	24-Apr – 14-May	17-Jul – 06-Aug	16-Oct – 05-Nov

Prices

	Order no.	Price
Price per proficiency test	53N00	75,--
Additional sample set	53N50	50,--
N = test 1 to 4		
Annual subscription 2018 (participation ETB 1 to 4/18)	53500	270,--
Add. sample set for subscription (1 x per test)	53550	200,--

all prices in EUR, incl. standard shipping costs**, plus 19% VAT

** see annotations p.32

Material

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

Details

Analyte

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

IDS – IMMUNOLOGICAL DRUG SCREENING IN URINE

Dates

IDS 1/18	IDS 2/18	IDS 3/18	IDS 4/18
30-Jan – 26-Feb	08-May – 04-Jun	21-Aug – 17-Sep	06-Nov – 03-Dec

Prices

	Order no.	Price
Price per proficiency test	51N00	75,-
Additional sample set	51N50	25,-
N = test 1 to 3		
Annual subscription 2018 (participation IDS 1 to 4/18)	51500	260,-
Add. sample set for subscription (1 x per test)	51550	90,-

all prices in EUR, incl. standard shipping costs**, plus 19% VAT

** see annotations p.32

Material

Lyophilized urine, 3 mL

Details

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 value.

Preliminary table

Drug classes

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

Analytes

- Methadone
- EDDP
- MDMA (Ecstasy)
- 6-Monoacetylmorphine
- Carisoprodol (Mebroamate)
- Ethylglucuronide
- Fentanyl
- Gabapentine
- Ketamine
- Meperidine
- Oxycodone
- Phencyclidine (PCP)
- Pregabalin
- Tapentadol
- Tramadol
- Zolpidem

Requests

Qualitative determination of the analytes

ACQ SCIENCE

YOUR PARTNER FOR QUALITY

TOXICOLOGY



TAILOR-MADE



FORENSIC



CLINICAL



ACQ SCIENCE

YOUR PARTNER FOR QUALITY

ACQ Science GmbH
Etzwiesenstraße 37
D-72108 Rottenburg-Hailfingen

Telefon: + 49(0)7457-94693 0
Telefax: + 49(0)7457-94693 69

e-Mail: info@acq-science.de
i-Net: www.acq-science.de

ANNOTATIONS TO THE PROFICIENCY TESTS

1. PERIODS FOR REGISTRATION

To guarantee an ayed run of the proficiency tests and of the compilation of the reports of results it is necessary that the results are submitted to ARVECON up to the indicated deadline. This is also valid for the results submitted by post. Therefore, we kindly ask you to submit your post in time or to inform us before 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 via e-mail.

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. COMMUNICATION OF 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.

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 cannot be dealt with.

6. PERIODS OF ANALYSIS

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

7. SAMPLES OF PROFICIENCY TESTS

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. PRICES

All prices indicated for the proficiency tests are net prices plus VAT. The prices include packaging and standard dispatch.

9. DISPATCH OF THE SAMPLES (EUROPE)

Normally, the samples are dispatched five days before starting the proficiency test. For the dispatch of the samples, delivery periods of up to eight days are included into the processing time of the respective proficiency test. If the samples arrive later, the organizer of the proficiency test has to be contacted to agree upon an extension of the period for registration.

10. DISPATCH OF THE SAMPLES (OUTSIDE EUROPE)

Shipment outside Europe is performed by express service. The costs will be charged separately.

Fee per shipment:	North America	EUR 30,-
	Asia, Africa	EUR 40,-

11. TYPES OF PAYMENT

After billing, payment by transfer or credit card (Mastercard, Visa) is possible. The credit card data may be transmitted in writing, by e-mail or via our homepage.

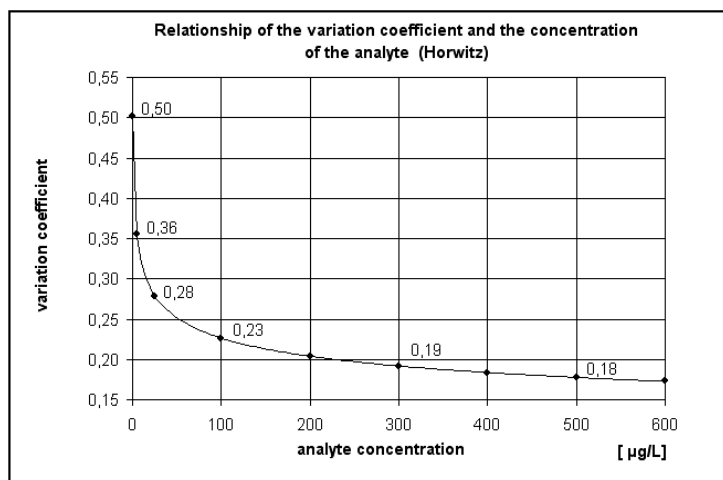
1. All laboratories working in the field of forensic or clinical toxicology or related fields may participate.
2. If not stated otherwise in the requests regarding the proficiency test no special methods for analysis are prescribed.
3. Enrolment for participation is possible up to the beginning of the proficiency test. Later enrolments are only possible on request.
4. Enrolment may be by subscription or for an individual test.
5. The results of the proficiency tests may be submitted by post, fax, e-mail or per internet.
6. The results have to be submitted up to the scheduled delivery date. If the results arrive late, the participant receives a report of results without his own results.
7. The analyses correspond to acknowledged scientific criteria which are supervised by accompanying working groups and/or expert groups.
8. 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.
9. Incorrect entries in the result forms may be corrected only up to the deadline of the respective proficiency test. Subsequent corrections are not possible.
10. If a proficiency test cannot take place, already paid participation fees will be refunded.

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 ISO 5725 [2]. The standard deviation of reproducibility to be calculated according to 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 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, 1, rue de Varamba, CH 1211 Genf 20, Schweiz
- [3] Herbold M, Schmitt G, Aderjan R (2003)
Auswertung forensischer Ringversuche nach ISO 5725, Beispiel: Haare - Ringversuche 2002. In: Symposium der GTFCh, Mosbach/Baden, Hrsg.: F. Pragst, R. Aderjan, Dr. Dieter Helm Verlag, Heppenheim

