



German External Quality Assessment Scheme

Prof. Dr. med. Hans Drexler

Institute and Out-Patient Clinic for Occupational, Social and
Environmental Medicine of the Friedrich-Alexander University

Institute for Occupational, Social and Environmental Medicine
Schillerstr. 25, 91054 Erlangen, Germany

Information - Intercomparison programme 59

Dear Colleague,

As you know, we have been carrying out a statistical quality control programme and certification for occupational medical and environmental medical toxicological analysis in biological materials since 1982. Within the framework of statistical quality control,

G-EQUAS 59 is going to take place from **February – end of July 2017**.

The round robin comprises the determination of a series of important occupational-medical and environmental-medical parameters in blood, plasma/serum, urine and hemoglobin samples.

By including the environmental-medical parameter and concentration range, we fulfill the wishes of the commission "Human Biological Monitoring" of the German Federal Environmental Agency (Umweltbundesamt) to also carry out quality control programmes for biological monitoring investigations in the environmental field. This also accords with the wishes of numerous laboratories for an external quality control programme.

You will find all relevant information, order forms and deadlines under www.g-equas.de. We would advise you to regularly check our website and to order online.

Deadlines and Shipping dates

If you wish to participate in **G-EQUAS 59/2017** please send the enclosed application form (**or better: order via internet**) until

2nd March 2017 at the latest!

to:

Professor Dr. med. H. Drexler

Institute and Out-Patient Clinic for Occupational, Social and Environmental Medicine of the Friedrich-Alexander University
Schillerstraße 25
91054 Erlangen
Germany

Telephone: ++49-9131/85 22374

Email: info@g-equas.de

Fax: ++49-9131/85 26132 (we would prefer email transmission or postal delivery of all documents)

The required control materials will be sent from Germany on

13th March (overseas participants) and 14th March 2017 (Europe)

Deadline for reporting your results is

11th May 2017.

The date of the postmark or fax is essential. We are going to accept the results until **11th May 2017, 12 p.m.** (German time). **Results that arrive after this date will not be considered in the evaluation process.**

The **blood, plasma/serum, urine** and **hemoglobin** samples are native pooled materials which are spiked with defined amounts of the occupational and environmental-medical toxicological parameters after appropriate preparation. For the urine control, plasma control-metals and hemoglobin control, human materials were used. Whole blood and serum controls are based on animal origin. This procedure has proven its merit in previous round robins, as well as in international quality control programmes.

All samples should be handled with the same precautionary measures as when analysing samples from patients.

List of control materials

In G-EQUAS **59** seventeen control materials in two different concentration settings are being offered. The following preparations are available:

- **Control blood - metals**

for

- the occupational-medical range: 7 metals (control material 1 A/B) and
- the environmental-medical range: 3 metals (control material 7 A/B)

have been added to the control blood.

- **Control blood - aromatic and halogenated hydrocarbons**

Based on the experience gained in recent years, two control materials are available in this round robin which contain:

- 4 highly volatile aromatic hydrocarbons (control material 4 A/B) or
 - 7 halogenated hydrocarbons (control material 5 A/B)
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- **Control urine – alcohols, ketones, ether and aromatic hydrocarbons**

In this control material

- 8 volatile alcohols, ketones and ether (control material 12 A/B)
- 4 aromatic hydrocarbons (benzene, toluene, xylenes, ethylbenzene) (control material 19 A/B)

can be analysed.

These samples are particularly suitable for gas chromatographic headspace analysis. The control blood or urine is contained in air-tight headspace vials which are offered in two volumes due to the different samplers used in headspace analysis (e.g. Dani, Carlo Erba, Perkin Elmer).

- **Control serum - organohalogen compounds**

This control material contains toxicologically important organohalogen compounds:

- 15 parameters for the *environmental-medical* range (control material 10 A/B)

List of control materials

- **Control plasma - metals**

These control samples take into consideration elements of clinical-chemical and toxicological relevance and those relevant to therapy control. The range of parameters includes

- 12 elements (control material 11 A/B).
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- **Control urine**

This control material is pooled human urine in which

for the *occupational-medical* range:

- 33 inorganic, (control material 2 A/B),
- 15 organic parameters, (control material 3 A/B) and

for the *environmental-medical* range

- 19 inorganic parameters (control material 8 A/B) and
- 11 organic parameters (control material 9 A/B)

can be analysed.

*Additionally creatinine can be analysed from control material 2 A/B and 3 A/B. **This analysis also costs 25.00 €.***

- **Control urine – amines and phenolic components**

10 parameters of the *occupational-medical* range, (control material 14 A/B) and

7 parameters of the *environmental-medical* range (control material 15 A/B)

are sent in brown-coloured glass vials.

These parameters have already been offered in the past, but have been related to different control materials. We spiked pooled human urine with phenolic components and metabolites and partially with glucuronide conjugates of these phenolic substances.

List of control materials

- **Control urine – mercapturic acids**

10 parameters of the *occupational-medical* range (control material 17 A/B)

- **Control urine – a metabolite of tobacco-specific nitrosamines**

1 parameter of the *environmental medical* range (control material 18 A/B)

- **Globin adducts - N-terminal adducts in hemoglobin**

5 parameters, **new: 2-Hydroxypropylvaline (2-HPV)** (control material 13 A/B)

To analyse one or the group of N-terminal adducts, 300 mg human globin is available for each concentration level.

On request each participant receives samples in **two concentration settings** for each parameter to be analysed. Successful participation in the round robin is certified if both concentrations are correctly determined.

A certificate is awarded for the successful participation in this intercomparison programme for occupational-medical- and environmental-medical- toxicological analyses.

We wish you all the best for your tests.

Kind regards,

Prof. Dr. med. H. Drexler

General price information

The basic payment of 100.00 € covers the costs for the participation in the round robin, the evaluation and report/certification.

Additionally 25.00 € are charged for each parameter in blood, plasma/serum or urine.

For each of the following parameter pools* an amount of 50.00 € is charged.

parameter: 11	Arsenic speciation (As ³⁺ , As ⁵⁺ , MMA*, DMA*, AsB*)
parameter: 117	5-HNMP and 2-HMSI
parameter: 80	Pyrethroid metabolites (Br ₂ -CA, cis-Cl ₂ -CA, trans-Cl ₂ -CA, 3-PBA)
parameter: 87	Alkyl phosphates (DMP, DMTP, DMDTP, DEP, DETP, DEDTP)
parameter: 93	Cotinine, Nicotine
parameter: 122	Phthalate metabolites DEHP (5-carboxy-MEPP, 5-oxo-MEHP, 5-OH-MEHP, MEHP)
parameter: 129	Phthalate metabolites "other" (MnBP, MiBP, MBzP)
parameter: 127	1-Naphthol, 2-Naphthol
parameter: 47	Benzene, Toluene, Xylenes, Ethylbenzene in blood
parameter: 51	Dichloromethane, 1,2-Dichloroethane, Trichloroethene, Tetrachloroethene, 1,1,1-Trichloroethane, Tetrachloromethane, Trichloromethane
parameter: 54	Methanol, Methyl-tert-butylether, Tetrahydrofuran, n-Butanol
parameter: 55	Acetone, Methyl-ethylketone, Methylisobutylketone, Methyl-n-butylketone
parameter: 182	Benzene, Toluene, Xylenes, Ethylbenzene
parameter: 134	Diisocyanate metabolites, aromatic (MDA, 2,4-TDA, 2,6-TDA, 1,5-NDA)
parameter: 180	Diisocyanate metabolites, aliphatic (IPDA, HDA)
parameter: 130	Globin adducts (MeV, HEV, CEV, AAV, 2-HPV)
parameter: 95	p,p'-DDT and p,p'-DDE
parameter: 97	α-, β-, γ-HCH
parameter: 100	PCB 28, 52, 101, 138, 153, 180
parameter: 120	PFOA, PFOS
parameter: 147	Butadiene metabolites (DHBMA, MHBMA)
parameter: 149	Acrylamide/Acrylonitrile metabolites (AAMA, GAMA, CEMA)
parameter: 152	other mercapturic acids (HEMA, 2-HPMA, 3-HPMA)
parameter: 182	Benzene, Toluene, Xylenes, Ethylbenzene in urine
parameter: 195	Arsenic speciation (As ³⁺ , As ⁵⁺ , MMA*, DMA*, AsB*)

*: Parameter pools comprise the combined order of the parameter, the material supply, one price, but the entitlement to a certificate for each of the parameter in the pool.

Contact dates

Important information for our OVERSEAS participants:

To guarantee short shipping periods and to minimize trouble during the shipment, we are going to send the control samples to the **overseas participants** with a private carrier.

Therefore we have to charge an **additional amount of 50.00 €** for all the overseas participants, regardless of the amount you order.

We would like to ask all participants to update their contact data.

Please note that we can only send you the material when you have given us the name of the person in charge, your postal address, the e-mail address and telephone number.

Thank you!