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
Henkestr. 9-11, 91054 Erlangen, Germany

Information - Intercomparison programme 69

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 69 is going to take place from **February 2022 – July 2022.**

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 69/2022** please order online via our homepage www.g-equas.de until

March 2nd, 2022

Professor Dr. med. H. Drexler
Institute and Out-Patient Clinic for Occupational, Social and Environmental Medicine of the
Friedrich-Alexander University
Henkestr. 9-11
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*

Starting March 16th (to overseas participants) and
Starting March 21 st 2022 (to European participants)

Deadline for reporting your results is

May 12th, 2022

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 controls, plasma controls for metals, and hemoglobin controls, human materials were used. Whole blood and serum controls are of bovine origin. Headspace samples are prepared with bovine blood. 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.

In G-EQUAS **69** eighteen 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)

- **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)

- **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).

- **Control urine**

This control material is pooled human urine in which

for the *occupational-medical* range:

- 34 inorganic, (control material 2 A/B),
- 16 organic parameters, (control material 3 A/B) and

for the *environmental-medical* range

- 19 inorganic parameters (control material 8 A/B) and
- 21 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. ***These parameters also cost 25.00 € each.***

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

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

2 parameters of the occupational-medical range (Phenole/o-Cresol) (control material 16 A/B)

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

are sent in brown-coloured glas vials.

- **Control urine – mercapturic acids**

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

- **Control urine – tobacco-smoke related parameters**

  3 parameter of the *environmental medic*al range (control material 18 A/B)

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

  5 parameters (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 200.00 € for Overseas participants covers the costs for the participation in the round robin, the evaluation, the report/certification and the shipping costs.
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**	Pyrethroide metabolites (Acid part) (Br_2-CA, cis-Cl_2-CA, trans-Cl_2-CA, CTFCA)
parameter: **83**	Pyrethroide metabolites (Alcohol part) (3-PBA, FPBA)
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, Methylethylketone, 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: **208**	Benzophenones (Benzophenone-1, Benzophenone-3)

******: *Parameter pools comprise the combined order of the parameters (the control material supply is one price) but the entitlement to a certificate is for each of the parameters in the pool.*

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!