



# German External Quality Assessment Scheme

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## Information - Intercomparison programme 61

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 61** is going to take place from **February 2018 – July 2018**.

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](http://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 61/2018** please order online via our homepage [www.g-equas.de](http://www.g-equas.de) until

**March 2<sup>nd</sup>, 2018 at the latest!**

to:

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The required control materials will be sent from Germany on

**beginning of March (overseas participants) and  
middle of March 2018 (Europe)**

Deadline for reporting your results is

**11<sup>th</sup> of May 2018.**

The date of the postmark or fax is essential. We are going to accept the results until 11<sup>th</sup> of May 2018, 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 and plasma control for metals human materials were used, whole blood, serum controls and hemoglobin control are of bovine 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 **61** seventeen control materials in two different concentration settings are being offered.

Please note that we offer 2 new parameters:

Control material 9A/B:

Parameter 204: 6-Chloronicotinic acid (6-CINA)

Control material 14/15A/B:

Parameter 205: 4,4'-Methylenebis(2-chloroaniline)(MOCA)

Also new:

The name of Control material 18A/B changed to Tobacco-smoke related parameters. It now comprises

Parameter 172: NNAL and

Parameter 93: Cotinine, Nicotine (formerly in control material 9A/B)

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.

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- **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).*

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• **Control serum - organohalogen compounds**

This control material contains toxicologically important organohalogen compounds:

- 15 parameters for the *environmental-medical* range (control material 10 A/B)
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• **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
- 19 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 €.***

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

10 parameters of the *occupational-medical* range, (control material 14 A/B) and  
9 parameters of the *environmental-medical* range (control material 15 A/B)

are sent in brown-coloured glas 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.*

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- **Control urine – mercapturic acids**

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

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

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

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- **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.*

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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 laboratories from overseas) covers the costs for the participation in the round robin, the shipping and the evaluation and report/certification. The participation fee for laboratories in Europe is 150.00 €.

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

\*: Parameter pools provide more than one parameters for participation, the material supply is one price, but the entitlement to a certificate is for each of the parameters in the pool.

## Contact dates

**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!**