



German External Quality Assessment Scheme

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

Erlangen, 21.12.2011

Laboratory ID:

(please do not forget to quote)

Please send this form by

24th February 2012

at the latest to

Prof. Dr. H. Drexler
Institute and Out-Patient Clinic for Occupational, Social and Environmental Medicine
of the University Erlangen-Nuremberg
Schillerstr. 25
D - 91054 Erlangen
Germany

REQUEST FORM

G-EQUAS 49 - 2012

Please indicate in the following the substances with which you would like to participate in this round robin test.

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

Please note that you can only participate in G-EQUAS when you have given us the current contact data of your laboratory!

- name of the person in charge:
- postal address:

- e-mail:
- telephone number:

O R D E R

**I / we are going to participate in G-EQUAS 49 and
would like to order the following control materials:**

M E T A L S

ANALYSES PARAMETERS IN CONTROL BLOOD

To analyse one parameter **3 ml control blood** for each concentration level is available.

Occupational medical field

(control material 1 A/B)

- | | |
|---|----------------|
| 1 | Lead (Pb) |
| 2 | Cadmium (Cd) |
| 3 | Chromium (Cr) |
| 4 | Cobalt (Co) |
| 5 | Manganese (Mn) |
| 6 | Nickel (Ni) |
| 7 | Mercury (Hg) |

Environmental medical field

(control material 7 A/B)

- | | |
|----|--------------|
| 70 | Lead (Pb) |
| 71 | Cadmium (Cd) |
| 72 | Mercury (Hg) |

ANALYSES PARAMETERS IN CONTROL PLASMA

To analyse one parameter **3 ml control plasma** is available for each concentration level.
(control material 11 A/B)

- | | | | |
|-----|----------------|-----|---------------|
| 107 | Aluminum (Al) | 113 | Nickel (Ni) |
| 108 | Chromium (Cr) | 114 | Platinum (Pt) |
| 109 | Cobalt (Co) | 115 | Selenium (Se) |
| 110 | Copper (Cu) | 116 | Zinc (Zn) |
| 112 | Manganese (Mn) | | |

INORGANIC COMPONENTS

ANALYSES PARAMETERS IN CONTROL URINE

To analyse one parameter **5 ml control urine** is available for each concentration level.

Occupational medical field

(control material **2** A/B)

8	Aluminum (Al)
9	Antimony (Sb)
10	Arsenic (Inorganic As and metabolites)
11	Arsenic speciation (As ⁺³ , As ⁺⁵ , MMA*, DMA*)
126	Total-Arsenic (tot. As)
15	Beryllium (Be)
16	Lead (Pb)
17	Cadmium (Cd)
18	Chromium (Cr)
19	Cobalt (Co)
20	Fluoride (F)
21	Copper (Cu)
23	Nickel (Ni)
24	Mercury (Hg)
25	Thallium (Tl)
26	Vanadium (V)
27	Zinc (Zn)
28	δ-Aminolaevulinic acid (ALA)
141	Selenium (Se)
142	Tungsten (W)
145	Total iodine in urine (I)

Environmental medical field

(control material **8** A/B)

73	Arsenic (As)
74	Cadmium (Cd)
75	Chromium (Cr)
76	Nickel (Ni)
77	Mercury (Hg)
78	Platinum (Pt)

*MMA: Monomethylarsonic acid

*DMA: Dimethylarsinic acid

ORGANIC COMPONENTS

ANALYSES PARAMETERS IN CONTROL URINE

To analyse one parameter / group of parameters of the **occupational medical** field **5 ml** control urine, of the **environmental medical** field **2 x 5 ml** control urine is available.

Occupational medical field

(control material **3** A/B)

30	Hippuric acid (HA)
32	Mandelic acid (MA)
33	Methylhippuric acids (MHA)
34	t,t-Muconic acid (t,t-MA)
37	Phenylglyoxylic acid (PGA)
38	S-Phenylmercapturic acid (S-PMA)
39	Trichloroacetic acid (TCA)
41	2-Thio-thiazolidine-4-carboxylic acid (TTCA)
42	Ethoxyacetic acid (EAA)
43	Butoxyacetic acid (BAA)
44	N-Methylformamide (NMF)
45	2,5-Hexandione (2,5-HD)
117	5-Hydroxy-N-Methylpyrrolidine (5-HNMP), 2-Hydroxy-N-Methylsuccinimide (2-HMSI)
134	Methylenedianiline (MDA)
135	Methoxyacetic acid (MAA)

Environmental medical field

(control material **9** A/B)

80	Pyrethroide metabolites (Br ₂ -CA, cis-Cl ₂ -CA, trans-Cl ₂ -CA, 3-PBA)
87	Alkyl phosphates* (DMP, DMTP, DMDTP, DEP, DETP, DEDTP)
93	Cotinine, Nicotine
122	<i>Phthalate metabolites</i> "DEHP" (5-OH-MEHP, 5-oxo-MEHP, 5-carboxy-MEPP)
129	<i>Phthalate metabolites</i> "other" (MnBP, MiBP, MBzP)

Alkyl phosphates:

DMP: Dimethylphosphate
DMTP: Dimethylthiophosphate
DMDTP: Dimethyldithiophosphate
DEP: Diethylphosphate
DETP: Diethylthiophosphate
DEDTP: Diethyldithiophosphate

PHENOLIC COMPONENTS

[Control material is spiked with the native phenolic compounds as well as with their glucuronide conjugates]

(control material No. **14 / 15** A/B, 5 ml in brown-coloured glas vials)

To analyse parameter no. 36 or 40 (control material No. 14, occupational medical field) **5 ml control urine** are available. To analyse parameter No. 79, 86, 127 and 140 (control material No. 15, environmental medical field) **2 x 5 ml control urine** is available.

36	Phenol
40	o-Cresol
79	1-Hydroxypyrene (1-HP)
86	Pentachlorophenol (PCP)
127	1-Naphthol, 2-Naphthol
140	Bisphenol A

HEADSPACE ANALYSIS

Control blood

AROMATIC AND HALOGENATED HYDROCARBONS

To analyse the aromatic and/or the chlorinated hydrocarbons for each concentration level and each group of hydrocarbons **2 x 2 ml or 2 x 1 ml control blood** in gas-tight ampoules is available. On account of the different headspace analysers available, the ampoules are offered in two different sizes.

(The analysis of the four/six substances counts as one parameter).

47 Benzene, Toluene, Xylenes, Ethylbenzene (control mat. **4** A/B)

51 Dichloromethane, 1,2-Dichloroethane, Trichloroethene, Tetrachloroethene,
1,1,1-Trichloroethane, Tetrachloromethane (control mat. **5** A/B)

To carry out the determination, I require vials with a volume of

20 ml (Perkin Elmer HS) (2 ml blood)

10 ml (1 ml blood)

Control urine

ALCOHOLS / KETONES

To analyse alcohols/ketones for each concentration level **2 x 2 ml or 2 x 1 ml control urine** in gas-tight ampoules is available. On account of the different headspace analysers available, the ampoules are offered in two different sizes.

(The analysis of the five substances counts as one parameter).

54 Methanol, Acetone, Methyl ethyl ketone (MEK), Methyl isobutyl ketone (MIBK),
Tetrahydrofuran (control mat. **12** A/B)

To carry out the determination, I require vials with a volume of

20 ml (Perkin Elmer HS) (2 ml urine)

10 ml (1 ml urine)

ORGANO-CHLORINE COMPOUNDS

ANALYSES PARAMETERS IN CONTROL SERUM

To analyse a parameter or a group of parameters **5 ml control serum** per concentration level is available.

Environmental medical field

(control material **10** A/B)

95	p,p`-DDT	p,p`-Dichlorodiphenyltrichloroethane
	p,p`-DDE	p,p`-Dichlorodiphenyldichloroethene
96	HCB	Hexachlorobenzene
97	α -, β -, γ - HCH	Hexachlorocyclohexane
100	PCB	Polychlorinated biphenyls (Ballschmitter numbers: 28, 52, 101, 138, 153, 180)
106	PCP	Pentachlorophenol
120	PFOA	Perfluorooctanoic acid
	PFOS	Perfluorooctanoic sulfonic acid (n-Isomer)

N-TERMINAL ADDUCTS in HEMOGLOBIN

Human globin - N-terminal adducts in hemoglobin

To analyse one or the group of N-terminal adducts 300 mg human globin is available for each concentration level (the analysis of the 4 substances counts as one parameter).

130	Globin adducts:	(control material 13 A/B)
	Methylvaline (MeV)	
	2-Hydroxyethylvaline (HEV)	
	2-Cyanoethylvaline (CEV)	
	2-Carbamoylethylvaline (AAV)	

Date:.....

Signature (with stamp):.....

Laboratory Number:.....

(please quote)

ORDERING ADDITIONAL CONTROL MATERIAL

In order to carry out the analyses we require more sample material than that was sent to us. We order the following additional number of control materials. For each control material a fee of 12,- € is charged.

For reasons of capacity we are not able to provide more than **2 additional** control samples per group of parameters.

Metals - Blood (3 ml)

occupational range

(control material 1 A/B)

ZA1 A..... x 12,- €

ZB1 B..... x 12,- €

environmental range

(control material 7 A/B)

ZA7 A x 12,- €

ZB7 B x 12,- €

Metals - Plasma (3 ml)

(control material 11 A/B)

ZA11 A..... x 12,- €

ZB11 B..... x 12,- €

Headspace analyses - Blood

Aromatic hydrocarbons (control material 4 A/B)

Vial 20 ml

Vial 10 ml

ZA41 A x 12,- €

ZA42 A x 12,- €

ZB41 B x 12,- €

ZB42 B x 12,- €

Chlorinated hydrocarbons (control material 5 A/B)

Vial 20 ml

Vial 10 ml

ZA51 A x 12,- €

ZA52 A x 12,- €

ZB51 B x 12,- €

ZB52 B x 12,- €

Headspace analyses - Urine

Alcohols/Ketones (control material 12 A/B)

Vial 20 ml

Vial 10 ml

ZA01 A x 12,- €

ZA02 A x 12,- €

ZB01B x 12,- €

ZB02 B x 12,- €

Organo-chlorine compounds - Serum (5 ml)

environmental range

(control material 10 A/B)

ZA10 A x 12,- €

ZB10 B x 12,- €

Inorganic Components - Urine (5 ml)

occupational range

(control material 2 A/B)

ZA2 A x 12,- €

ZB2 B x 12,- €

environmental range

(control material 8 A/B)

ZA8 A x 12,- €

ZB8 B x 12,- €

Organic Components - Urine (5 ml)

occupational range

(control material 3 A/B)

ZA3 A x 12,- €

ZB3 B x 12,- €

environmental range

(control material 9 A/B)

ZA9 A x 12,- €

ZB9 B x 12,- €

Phenolic Components - Urine (5 ml)

(control material 14 / 15 A/B)

ZA14 A x 12,- €

ZB14 B x 12,- €

Date:.....

Signature (with stamp):.....

Laboratory Number:.....