Laboratory code: **16**

Lausanne, 24 February 2010

Inter-laboratory proficiency test: ethyl glucuronide in hair
Examination period: 04 November 2009 – 31 December 2009

Dear participant,

Please find attached the report including the results from your laboratory obtained in the context of the proficiency test conducted during the 2-month examination period mentioned above.

Best regards,

Frank Sporkert

Participants:

Participating laboratories: 17
Laboratories having reported their results: 16
Number of samples to be analyzed: 2 (powdered hair samples A & B)

Control of homogeneity:

Homogeneity was tested before being used for the proficiency test. The control of homogeneity was assessed under repeatability conditions (variability within a day). The inter-sample variation of EtG was calculated using analysis of variance for samples A & B, respectively. The samples revealed to be homogenous, with the inter-sample variation coefficients less than 2%.

Statistical analysis:

Statistical analysis was based on robust estimators (median instead of the mean and interquartile range instead of standard deviation), which display the advantage to be less sensitive to extreme values. It was therefore not necessary to identify and remove the outlier values. All laboratory results were thus considered for calculations.
Results that were lower than the defined limit of quantification (LOQ) were not included in the statistical analysis.

Z-score:

The performance of each participating laboratory was assessed by Z-score.
Z-score values were calculated as follows:
$$Z = (x - \chi) / IQ_R$$

Where:

x   corresponds to the individual laboratory's value.
χ corresponds to the median value obtained from participating laboratories.
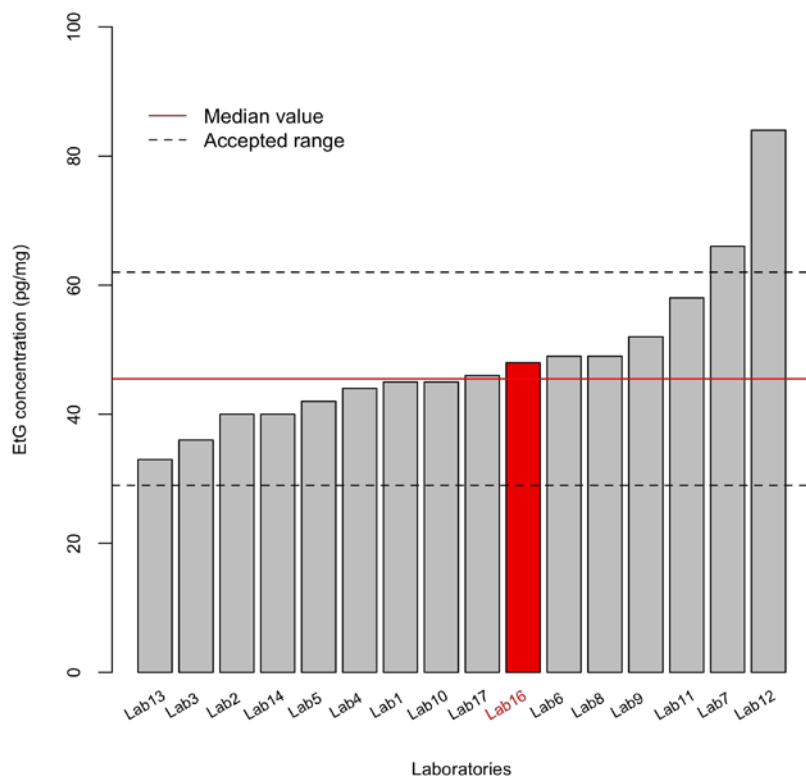IQ_R corresponds to the interquartile range calculated as (Q1, 0.25) - (Q3, 0.75)
             (the lower quartile minus the upper quartile).

Decision criteria:

A median value of **+/- 2*IQ_R** ($|Z| \leq 2$) was defined as decision criteria for considering the test result positive.

Certificate of participation:

EtG-Sample A

Your method	GC-MS/MS

Your result	
Reported value	48

Decision criteria	
Median value	45.5
IQ_R	8.25
Accepted range	29 - 62

Criteria fulfilled	
Yes	

All concentration expressed as pg/mg hair

EtG-Sample A
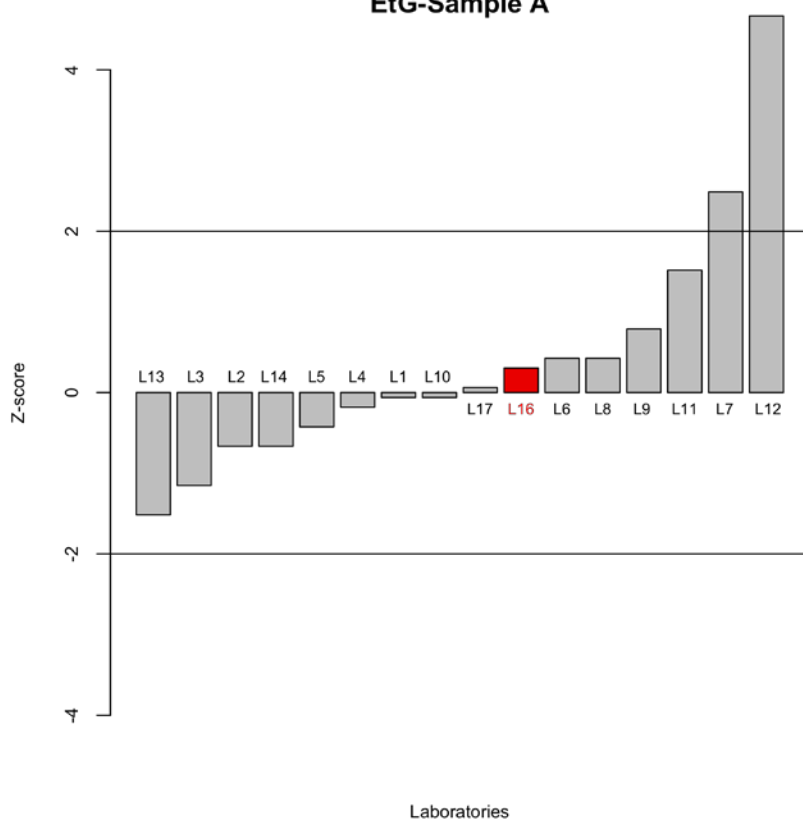
Lab code	Z-score
Lab 13	-1.52
Lab 3	-1.15
Lab 2	-0.67
Lab 14	-0.67
Lab 5	-0.42
Lab 4	-0.18
Lab 1	-0.06
Lab 10	-0.06
Lab 17	0.06
Lab 16	0.30
Lab 6	0.42
Lab 8	0.42
Lab 9	0.79
Lab 11	1.52
Lab 7	2.48
Lab 12	4.67

EtG-Sample B
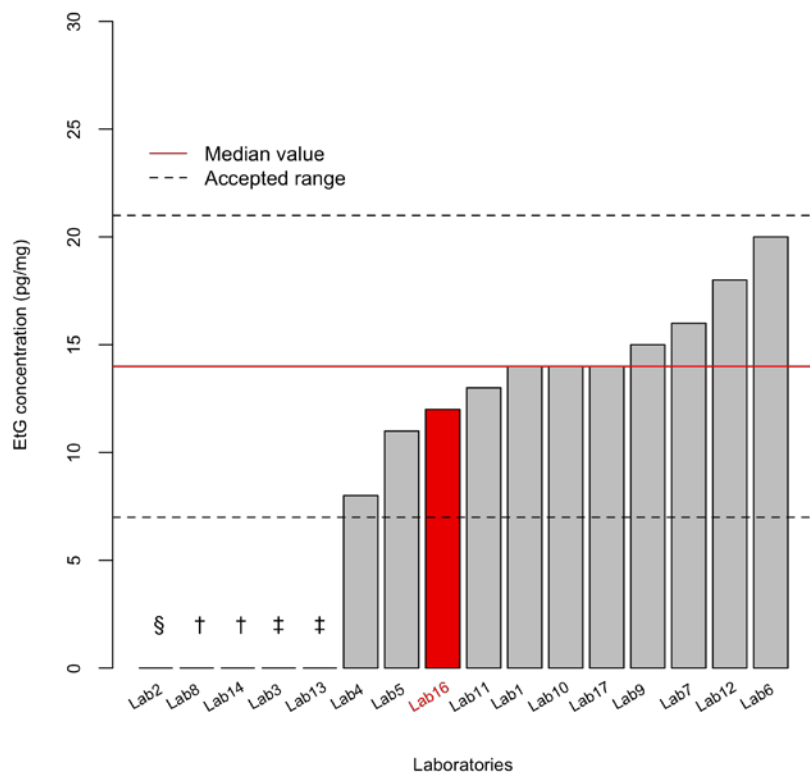
Your result	
Reported value	12

Decision criteria	
Median value	14
IQ_R	3.5
Accepted range	7 - 21

Criteria fulfilled
Yes

§: no detected

†: < 10 pg/mg hair

‡: < 20 pg/mg hair

EtG-Sample B
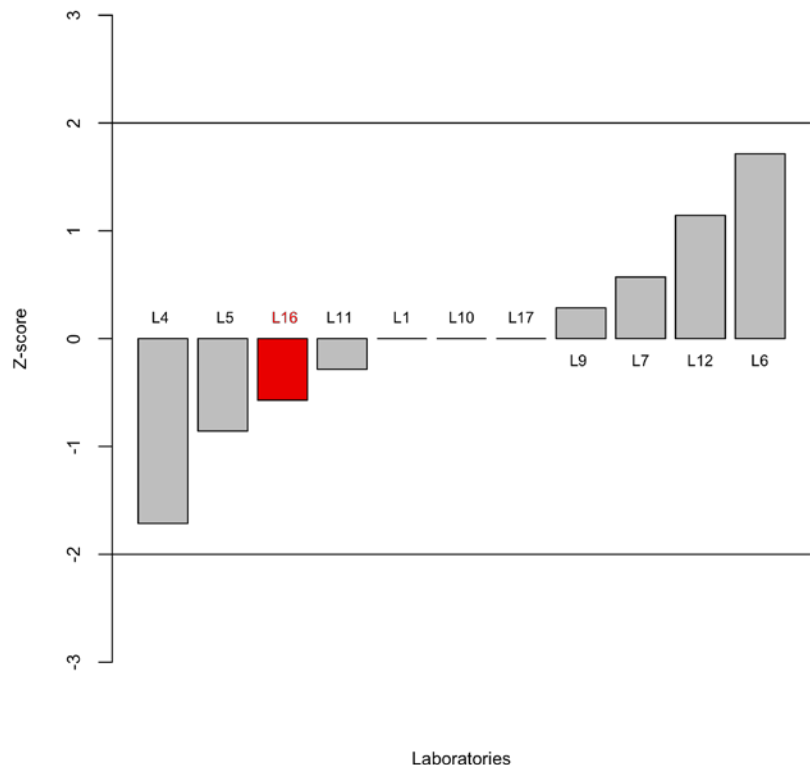
Lab code	Z-score
Lab 4	-1.71
Lab 5	-0.86
Lab 16	-0.57
Lab 11	-0.29
Lab 1	-0.00
Lab 10	-0.00
Lab 17	-0.00
Lab 9	0.29
Lab 7	0.57
Lab 12	1.14
Lab 6	1.71