DAH

Drugs of Abuse in Hair Proficiency Testing Scheme

Scheme Description

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Record of issue status and modifications

ISSUE	ISSUE DATE	DETAILS	AUTHORISED BY
1	Jan 2013	Version 1 issued.	K. Morgan
2	Feb 2014	Clarification of traceability of Assigned Values and screens. Updated to include sub-contracting information and expansion of sample details. Threshold updates. Addition of 'Methods' section.	K Morgan
3	Dec 2014	Update of methylamphetamine to methamphetamine	K Morgan
4	Jan 2016	Update of reporting thresholds with reference to the EWDTS updated guidelines Removed Hard copy report information	K Morgan A McCarthy
5	Jan 2018	Change of Sample 1 to being Qualitative and further information supplied regarding assessment.	K Morgan
6	Dec 2018	Website information added to page 3 Reference added for EWDTS guidelines and minor edits Expansion to Benzodiazepine and Z-Drug reporting threshold. Addition made to clarify frequency of sample distributions	A McCarthy B Whetton
7	Nov 2019	Removed 'Standards' from page 1 Update regarding the assessment participant results	A McCarthy K Morgan
8	Sept 2021	Number of decimal places amended to 3	K Morgan
9	July 2021	Update to how the quantitative results are assessment: Appendix B Updated email address Update to reporting thresholds	R Forsyth A Collins K Morgan

Notes:
Where this document has been translated, the English version shall remain the definitive version

Scheme Aims and Organisation

The primary aim of the Drugs of Abuse in Hair proficiency testing scheme (DAH) is to enable laboratories providing analytical services in accordance with industry best practice, and to the international standards ISO/IEC 17025 to monitor their performance and compare it with that of their peers. DAH also aims to provide information to participants on technical issues and methodologies relating to the examination of items and the interpretation of evidence.

The DAH scheme year operates from January to December. Further information about DAH, including test material availability, round despatch dates and reporting deadlines, are available on the current DAH application form and on the website www.lgcstandards.com.

Test Materials

Details of test materials available in DAH are given in Appendix B. The test parameters are continually reviewed to ensure they meet the needs of current laboratory testing and regulatory requirements.

Test materials are distributed quarterly (2 samples per round).

Test material batches are tested for homogeneity for at least one test parameter where deemed appropriate. Details of homogeneity tests performed and results are given in the DAH Scheme Reports.

Some aspects of the scheme, such as test material production, homogeneity testing and stability assessment, can from time to time be subcontracted. When subcontracting occurs, it is placed with a competent subcontractor and LGC is responsible for this work. The planning of the scheme, the evaluation of performance and the authorisation of the final report will never be subcontracted.

Statistical Analysis

Information on the statistics used in DAH can be found in the General Protocol and in the Scheme Report. Methods for determining assigned values and the values for SDPA used for individual samples are given in Appendix A

Methods

Methods are listed in PORTAL. Please select the most appropriate method from the list. If none of the methods are appropriate, then please report your method as ‘Other’ and record a brief description in the Comments Section in PORTAL.

Results and Reports

DAH results are returned through our electronic reporting software, PORTAL, full instructions for which are provided by email..

DAH reports should be available on the website, or may be distributed by e-mail, within 10 working days of round closure.
For interpretation purposes the guidelines proposed by the EWDTS* (European Workplace Drug Testing Society) are utilised, and the following thresholds are used:

Screening Tests	SOHT threshold	Individual analytes	SOHT threshold
Amfetamines screen	0.2 ng/mg	Amfetamine Methamphetamine MDMA/MDA/MDEA	0.2 ng/mg 0.2 ng/mg 0.2 ng/mg
Benzodiazepines screen	0.05 ng/mg	Benzodiazepine drugs, Z-Drugs and metabolites alprazolam, bromazepam, clonazepam, diazepam, flunitrazepam, flurazepam, lorazepam, lormetazepam, midazolam, nitrazepam, nordiazepam, oxazepam, phenazepam, temazepam, zolpidem, zopiclone.	0.05 ng/mg
Cannabinoid screen (THC)	0.1 ng/mg	THC THC-COOH	0.05 ng/mg 0.2 pg/mg
Cocaine and metabolite screen	0.5 ng/mg	Cocaine Benzoylecgonine Cocaethylene Nococaine	0.5 ng/mg 0.05 ng/mg 0.05 ng/mg 0.05 ng/mg
Opiate screen (total) 6-Monoacetylmorphine	0.2 ng/mg 0.2 ng/mg	Morphine 6-Mono-acetylmorphine Codeine	0.2 ng/mg 0.2 ng/mg 0.2 ng/mg
Methadone EDDP	0.2 ng/mg	Methadone EDDP	0.2 ng/mg 0.05 ng/mg
Buprenorphine	0.01 ng/mg	Buprenorphine Norbuprenorphine	0.01 ng/mg 0.01 ng/mg
Ketamine	0.5 ng/mg	Ketamine Norketamine	0.5 ng/mg 0.1 ng/mg

*The thresholds recommended by the EWDTS (2015-11-01 Version 2.0) are those recommended by the SOHT (Society of Hair Testing) for Amphetamines, Cocaine and metabolites, Cannabinoids and Opiates. They differ from the SOHT guidelines for Benzodiazepines (no SOHT guideline).

APPENDIX A - Description of abbreviations used

Assigned Value (AV)

The assigned value may be derived in the following ways:

- From the robust mean (RMean). This is the median of participant results after the removal of test results that are inappropriate for statistical evaluation, e.g. miscalculations, transpositions and other gross errors. Generally, the assigned value will be set using results from all methods, unless the measurement is considered method-dependant, in which case the assigned value will be set by method as illustrated in the report tables.
  For some analytes, where there is a recognised reference method for that type of measurement, this may be used as the assigned value for a particular analyte i.e. it would be applied to results obtained by any method.

  Traceability: Assigned values which are derived from the participant results, or a sub-set of the results are not traceable to an international measurement standard. The uncertainty of assigned values derived in this way is estimated from the participant results, according to ISO 13528.

- From a formulation value (Formulation). This denotes the use of an assigned value derived from sample preparation details, where known and exact quantities of analyte have been used to prepare the sample.

  Traceability: Assigned values calculated from the formulation of the test sample are traceable, via an unbroken metrological traceability chain, to an international measurement standard. The measurement uncertainty of the assigned value is calculated using the contributions from each calibration in the traceability chain.

- From a qualitative formulation (Qual Form). This applies to qualitative tests where the assigned value is simply based on the presence/absence of the analyte in the test material.

  Traceability: Assigned values calculated from the qualitative formulation of the test sample are traceable to a certified reference standard or a microbiological reference strain.

- From expert labs (Expert). The assigned value for the analyte is provided by an 'expert' laboratory.

  Traceability: Assigned values provided by an 'expert' laboratory may be traceable to an international measurement standard, according to the laboratory and the method used. The uncertainty of measurement for an assigned value produced in this way will be provided by the laboratory undertaking the analysis. Details of traceability and the associated uncertainty will be provided in the report for the scheme/round.

Range

This indicates the concentration range at which the analyte may be present in the test material.

SDPA
SDPA represents the ‘standard deviation for proficiency assessment’ which is used to assess participant performance for the measurement of each analyte. This may be a fixed value (as stated), a percentage (%) of the assigned value or based on the robust standard deviation of the participant measurement results, either across all methods or by method depending on whether the measurement made is method dependent (see assigned value).

Units
This indicates the units used for the assessment of data. These are the units in which participants should report their results. For some analytes in some schemes participants may have a choice of which units to report their results, however, the units stipulated in this scheme description are the default units to which any results reported using allowable alternative results will be converted to.

DP
This indicates the number of decimal places to which participants should report their measurement results.

APPENDIX B – Test Materials

The assessments will be undertaken in two ways:

1. Qualitative (Detected/Nor detected) - For those participants who report screening results only and require to be assessed on whether they have detected the presence of a substance or not.
2. Quantitatively. For participants who require to be assessed upon their ability to detect a substance in relation to the reporting threshold.

   Please note that there will be the ability for double assessment based on the above criteria. Therefore, participants will be able to enter the results for both assessments detailed above.

Samples PT-DH-01 and PT-DH-02

Participants will receive:
Two sample vials containing 250 milligrams of 2-3 mm sections of cut human hair (DH01 and DH02) for the identification and quantification of up to 4 analytes.

The samples have been prepared from blank cut human hair which was screened and declared free from common drugs of abuse. The analytes were then incorporated by a method that includes soaking into the segments of hair.

Analyte	Method	Range	AV	SDPA	Units	DP
Drugs of Abuse.	All	All	Qual Form	N/A	N/A	N/A

Analyte	Method	Range	AV	SDPA	Units	DP
Drug (s) of Abuse for quantification purposes	All	N/A	Formulation or RMean*	difference between the AV and the reporting threshold divided by 3 or RSD*	Normally ng/mg, THC-COOH pg/mg	3

**Please note it will be mentioned within the report how the assessment of the Quantitative results will be conducted.*