

September 15, 2017

## GEDNAP 54 & 55

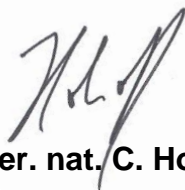
Dear colleague,

Please find enclosed the samples for the GEDNAP Proficiency Tests 54 and 55, and some important explanations, instructions and conditions. Please read them carefully. This information will also be provided on the GEDNAP website (<http://www.gednap.org>) in due course.

Furthermore, a letter is enclosed which is from the Stain Commission concerning the 'Rules for publicising the participation in the GEDNAP Proficiency Tests' and the associated declaration to be signed by the authorised participant. Please return this document stamped and signed by an authorized person until December 22, 2017. For further details see para V and VIII.

If you have any queries or problems, please do not hesitate to contact us.

Sincerely



**Dr. rer. nat. C. Hohoff**

Executive Director of the  
GEDNAP Proficiency Tests



**Prof. Dr. med. B. Brinkmann**

Chairman of the GEDNAP  
Proficiency Testing Program

## **I. Notes on the Samples:**

The proficiency tests are composed of three reference samples and four stains:

GEDNAP 54: Person A – C; Stain 1 – 4

GEDNAP 55: Person A – C; Stain 1 – 4

GEDNAP participants that have registered for the module *extraction efficiency* will receive in addition stain 5 (see VI.).

Please bear in mind that any of the stains could consist of the DNA of a single person (“single source stain”) or of the DNA from up to 3 different persons (“mixed stain”), and that the stain material might consist of saliva, blood or sperm (as well as mixtures of these materials). In principle, the stains in these Proficiency Tests could simulate any stains encountered in routine casework.

N.B.: Each participating laboratory must retain some material from every stain to allow a reanalysis if necessary.

## **II. DNA loci that may be included in the certificate(s) for GEDNAP 54 and 55:**

### 1. autosomal core STRs and Amelogenin \*

locus	TH01	VWA	FGA	D21S11	ACTBP2	D3S1358	D8S1179	D18S51	D16S539
allele range*	2-14.3	9-25	12-34.2, 41.2-52.2	23-39	3.2-43, 48-50	8-21	4-20	6-28	3-17

locus	D2S1338	D19S433	D12S391	D2S441	D10S1248	D22S1045	D1S1656	Amelogenin
allele range *	9-29	4.2-20.2	13-28	7-18	7-20	6-21	8-21.3	X/X; X/Y

## 2. supplementary autosomal STRs \*

locus	TPOX	CSF1PO	D5S818	D13S317	D7S820	Penta D	Penta E	D6S1043
allele range *	3-17	4-17	5-19	4-18	4-17	1.2-18	4-25	6-26

## 3. Y-STRs \*

locus	DYS19	DYS385	DYS389I	DYS389II	DYS390	DYS391	DYS392	DYS393
allele range *	8-20	6-29	8-18	23-36	16-30	4-17	3-21	6-19

locus	DYS437	DYS438	DYS439	DYS448	DYS456	DYS458	DYS635	GATAH4
allele range *	9-19	5-17	4-18	13-25	10-24	9-25	14-29	7-19

locus	DYS576	DYS481	DYS549	DYS533	DYS570	DYS643
allele range *	10-24	16-33	6-18	6-18	9-25	5-18

## 4. additional autosomal STRs #\*

locus	D2S1360	D3S1744	D4S2366	D5S2500	D6S474	F13B	F13A01
allele range *	18-33	12-22	8-16	8-19	12-20	5-13	2-17

locus	D7S1517	D8S1132	D10S2325	D21S2055	LPL	FESFPS	Penta C
allele range *	15-29	11.1-28	5-20	15.1-40	6-15	6-15	3-18

## 5. X-STRs # \*

locus	DXS8378	HPRTB	DXS7423	DXS7132	DXS10134	DXS10074	DXS10101
allele range *	7-16	7-18	11-19	9-18	27-45.3	3-22	20-36

locus	DXS10135	DXS10079	DXS10103	DXS10148	DXS10146
allele range *	12-40.2	13-26	14-23	12.3-34.1, 37.1-39.1	20-48.2

### Notes on the tables 1 - 5

\*: the numbers indicate the range in which the classification of alleles must be made.

For further explanations see para V.

#: the certification of these markers is not carried out in conjunction with the Stain Commission

### **III. Biostatistical calculation**

In the course of both Proficiency Tests GEDNAP 54 and 55 a paper challenge will be conducted for the biostatistics module. The necessary findings will be sent by eMail. In case of a mixed stain please use **both** calculation methods that are recommended by the German Stain Commission (P. Schneider et al. (2009) Int J Legal Med 123:1–5). Please use only the allele frequencies that were observed in the course of an ENFSI population study (STRidER\_frequencies\_2015-02-09.xml, <http://www.strider.online>, download date 17.09.2015). They can be downloaded from the GEDNAP website (<http://www.gednap.org>). The calculation steps must be documented. The employed software version must be named. Please note that the calculations have to be executed without the correction factor 'theta' (i.e. with a theta value of zero).

### **IV. Instructions for submitting the results**

- To submit your results (stain characterization, extraction details, genotyping, mixed-person stain calculation), please exclusively use the web forms on the GEDNAP homepage (<http://www.gednap.org>). The submission option will be deactivated on the deadline of **22<sup>nd</sup> December 2017 at 23:59 CET**. Detailed

information and your login and password will be, or have already been, provided in separate emails.

- After submitting your results electronically we request you send us a signed and stamped printed copy (the website allows you to create a PDF file), which you send us by post together with your original laboratory data. The deadline is the **22<sup>nd</sup> December 2017** (date of postmark).
- Also for the submission of your mtDNA results please use the form on the GEDNAP homepage (<http://www.gednap.org>). As in previous years, you are requested to score the differences of the sequences of Persons A-C and single source stains to the revised Cambridge Reference Sequence (rCRS) using the nomenclature recommendations of the DNA commission of the ISFG (W. Parson et al. 2014, PMID: 25117402). In the case of a point heteroplasmy the np shall be reported according to the IUPAC code, provided the minor component represents at least 20 %. In the case of a length heteroplasmy, „LHP“ shall be reported in the field ‘remarks’; the shorter variant shall be named if there are two dominant types. The second dominant variant shall be reported in the field ‘remarks’ as well.

## **V. General Information**

- Please enter only numerical allele values in the web-based results’ forms; we would consider any other character (e.g., OL, F, ?) as an error, except for < and > (see below).
- ‘Off-category’ alleles, i.e. those alleles that are smaller than the smallest allele or longer than the longest allele in the STR systems listed in table 1 - 5, can be reported using the “smaller than” (<) or “greater than” (>) signs relative to the shortest or longest allele. Example: allele 18 at TPOX can be given as '>17' or as '**18**' – both would be considered correct. Please note that allele numbers must be given with a 1bp precision (this does not however mean that the example allele above should be scored as 18.0). Allele designations not adhering to these instructions will be considered erroneous.
- For evaluation and certification it is obligatory to include original laboratory data, i.e., copies of the electropherograms of the samples **and** the corresponding allelic ladders. The allele scoring must be readily visible and unambiguous, and amplicon lengths and peak heights must be readable. The printed copies must be

clearly marked with the Proficiency Test series (GEDNAP 54 or GEDNAP 55, respectively), with the sample name and with its laboratory code (e.g. G54\_987). Printed sequence electropherograms must be labelled likewise, and the evaluated range must clearly be indicated by the nucleotide positions (np). The relevant np must be indicated. Furthermore, the steps from the electropherogram to the scoring as deviation(s) from the rCRS must be documented (among other things by mentioning the software for generating the consensus sequence from sequencing both strands). Examples of a GeneMapper analysis as well as an exemplary print-out of a sequencing electropherogram with proper labels are available upon request.

- If the original laboratory data are not included in the submission, the results will not be evaluated and subsequently a certificate will not be issued.
- If you wish to send your original data in digital form (e.g. CD-ROM, e-mail attachment) please ensure that the files are clearly labelled and comprehensible. Please send the electropherograms as PDF files.
- Certificates of participation will be issued for those modules for which you have registered (stain characterisation, common and supplementary STR loci, Y-STRs, sequence analysis of the mtDNA control region, biostatistics of mixed-person stains, additional autosomal STRs and X-STRs, the last two modules being evaluated and certified without involvement by the Stains Commission).
- Certificates of participation can be issued only in the name of the institute which has actually undertaken the analysis. An analysis by a third party is not permissible. In accordance to the Stain Commission ruling, all participants have to sign a self-declaration stating that their GEDNAP certification may not be used by third parties, for example for advertising purposes. If this self-declaration has been submitted in the previous year it can be omitted this year. If the self-declaration has not been received by us until 22<sup>nd</sup> December 2017, we will neither evaluate the results nor subsequently issue the certificates.
- The categories of participants are defined as in the previous years. Details are given on the GEDNAP website (<http://www.gednap.org>).

## **VI. Module Extraction Efficiency**

In the course of both Proficiency Tests GEDNAP 54 and 55 a fifth stain will be sent out in triplicate for the module “extraction efficiency”. The participant shall extract the **three sub-samples separately by the same methodology** without prior presumptive testing **and return the three DNA extracts** at his own expense and on his own responsibility to the IFG Münster (no later than December 11, 2017). The postal address is as follows:

Institut für Forensische Genetik  
GEDNAP XF  
Im Derdel 8  
48161 Münster  
Germany

The choice of transport is left to the participant (on ice, frozen, lyophilized with or without a stabilizer [e.g., Biomatrix's DNASTable]). The IFG asks for details of the extraction techniques (i.e., analytical platform/hardware & chemistry [if applicable], elution buffer and elution volume) and performs the DNA quantitation by real-time PCR. The individual reporting will be provided in conjunction with the other report forms in February 2018.

## **VII. Stain Workshop in Basle, Switzerland**

The results of the Proficiency Tests GEDNAP 54 and 55 will be presented during the 38<sup>th</sup> Stain Workshop in Basle (Switzerland; February 22 - 24, 2018), organized by Prof. Dr. Eva Scheurer, Institute of Legal Medicine (<http://www.irm.bs.ch>), in conjunction with the German Society of Legal Medicine and the Stain Commission. Oral contributions (also in English) are encouraged.

## **VIII. Fulfilment of Conditions**

The executive of the proficiency tests, who is appointed by the Stain Commission, agrees to provide test samples, evaluate submitted results and to issue certificates if the participating laboratory meets the above conditions and furthermore pays the current participation fee, signs the enclosed self-declaration by an authorized member of the participating laboratory and sends it back to the executive such that it arrives at his address. If any of these requirements is not fulfilled, then the submitted results will not be evaluated and a certificate will not be issued.