



DNA ANALYSIS SPECIALIST GROUP

Notes of the twentieth meeting held at 12:30am on 11 March 2015 at 5 St Philip's Place, Colmore Row, Birmingham

Item 1: Opening and welcome

1.1 The Chair welcomed those present to the 20th meeting of the DNA Analysis Specialist Group. Nicola Clayson had joined the group as a representative of the Body Fluid Forum (BFF). The Chair stated that the work of the DNASG and the BFF had overlapping interest and Nicola Clayson's presence would aid sharing of those areas of common interest.

1.2 The Chair stressed the importance of circulating meeting papers in good time prior to meetings to allow members time to read the papers. DNASG members responsible for drafting papers should aim to get the papers to the Secretary at least two weeks prior to the meeting.

1.3 The Chair indicated that there were a number of issues arising from Y-STR analysis that were not included in the DNASG's work plan. The work plan would need to be amended and the DNASG required sight from the Met Police of the types of cases, samples and successes in relation to its use of Y-STR analysis.

Action 1: Work plan to be amended to include Y-STR

1.4 See Annex A for full list of attendees and apologies.

Item 2: Minutes from the last meeting

2.1 There were minor amendments to the meeting of 11 December 2014.

2.2 The minutes of the meeting on 11 December 2014 were agreed subject to the above amendments.

Item 3: Matters arising

3.1 Cellmark document for jurors – This action was carried forward.

Action 2: Huw Turk/Andrew McDonald to send June Guinness the Cellmark document for jurors¹

3.2 Key Forensics DNA appendix: The action here was still outstanding.

Action 3: John Lowe/Des Van Hinsbergh to send June Guinness the Key Forensics DNA appendix

3.3 The other actions were either cleared or were agenda items.

Item 4: Standards

Body Fluid Forum

4.1 Nicola Clayson informed the DNASG that the BFF had three meetings a year. The forum was made up of representatives of mainstream forensic science providers (FSPs) that provided interpretation and body fluid evidence. The BFF were collating a new list of topics that they could investigate through collaborative work. For example, they plan to look at how quickly drainage occurs after intercourse.

4.2 The BFF was a sub-group sponsored by the Association of Forensic Science Providers (AFSP). There was no representative from UKAS on the forum. It was made up of practitioners from the larger AFSP organisations and predominantly involved in prosecution.

4.3 The BFF shares information between members. This information is collated in various forms. Technical notes are also prepared and peer-reviewed by members and where possible the BFF would publish in scientific journals if the outputs of any collaboration or research met the requirements of these journal for publication. The information is circulated on discs to each member organisation and shared on their individual internal platform for their staff to access.

4.4 It was reported that the AFSP was interested in setting up a DNA working group. It would be necessary to look at the working group's terms of reference to ensure that there were no overlaps between the group and the DNASG.

QA/QC table

4.5 The DNASG were invited to consider if the approach at the workshop was suitable; if all the appropriate issues had been covered and how to take forward the work in terms of the table's suitability for the appendix. It was agreed that the table needed to be clear and unambiguous.

4.6 Des Van Hinsbergh agreed to seek feedback on the table and send it to June Guinness.

¹ Huw Turk has sent the Cellmark handout for jurors to June

Action 4: Des Van Hinsbergh to seek feedback on the table and send it to June Guinness.

Mixture PT/guidance

4.7 FSPs took part in a collaborative study of the analysis, interpretation and reporting of DNA mixtures by Principal Forensic Services. Recommendations have been made for the FSR to decide how to progress. The DNASG commented on the report's recommendations as follows:

Recommendation 1: *The FSR to provide guidance on the structure and interpretation sections in statements about DNA mixtures.* This needed to fit into work that Jeff Adams from the Regulators unit was leading on.

Recommendation 2: *FSPs must move towards an agreed nomenclature to describe the features of DNA profile results and provide an explanation regarding the interpretation of a mixture.* This should be added to the DNASG work plan and the DNASG should consider how to approach this recommendation.

Action 5: An agreed nomenclature for features of DNA profile results and explanation of the interpretation of mixtures should be added to the DNASG work plan and the DNASG should consider how to approach the issue.

Recommendation 3: *The propositions for mixed results should be clearly specified in the statement.* See recommendation 1, this needed to fit in with Jeff Adams' work.

Recommendation 4: *The FSR should provide guidance for the police, lawyers and the judiciary on the principles by which mixtures are interpreted and the structure and wording in the interpretation and conclusion sections of statements.* It was agreed that the FSR should discuss this recommendation with the Lord Chief Justice and the last draft of the DNA primer should be re-circulated to the DNASG for awareness.

Action 6: Secretariat to re-circulate the last draft of the DNA primer to the DNASG

Recommendation 5: *The FSR should provide guidance on suitable checks for transfer of results between FSPs.* This should be dealt with by the DNASG. The work strands cover checking, transcription, transferring, and the presence of peaks.

Recommendation 6: *The FSR should provide guidance on acceptable boundaries of interpretation in the context of DNA mixtures.* The FSR may contract out this work for the DNASG to review and agree.

Recommendation 7: *The FSR should provide guidance for DNA expert witnesses, lawyers and judges on the use and limitations of a qualitative opinion where no quantitative likelihood ratio(LR) has been calculated, and if necessary, commission a national programme for assessing the interpretation of specially constructed DNA mixtures.* This was seen as much wider than the DNASG, covering a whole raft of areas, including interpretation, primers, etc. The DNASG should provide advice on implementing this recommendation.

Recommendation 8: *The FSR should provide guidance on the basis on which syntenic loci should be used.* This was on the agenda, with a paper from Roberto Puch-Solis.

Recommendation 9: *The FSR should provide guidance on the performance and validation standards for software to calculate likelihood ratios.* The FSR can write standards but not review the software. The FSR may commission the work and bring it back to DNASG. UKAS could review the software against standards.

Recommendation 10: *Organisations are encouraged to act on the lessons learned from this study and the FSR should commission a similar exercise in 12-18 months.* DNASG members agreed with the timing and the need to allow time for the recommendations to be implemented.

Recommendation 11: *Future studies should be run in a similar format to this exercise.* This was accepted by the DNASG.

Recommendation 12: *The review of this exercise and future exercises should be submitted for publication in a suitable peer-reviewed journal.* Publication was accepted in principle but a high level summary may be more appropriate for publication.

4.8 The report had been agreed in principle by the FSR. The DNASG was content to implement some of the advice in the report. The next steps include having some of the recommendations on the agenda of the next DNASG meeting and on the work plan.

Syntenic loci

4.9 Roberto Puch-Solis introduced his paper and informed the committee that it was drafted in conjunction with Tim Clayton. The paper looked at the various literature that is available on physical linkage between vWA and D12 that would cause linkage disequilibrium at the population level. The committee were supportive of a pragmatic approach. The paper was linked to Recommendation 8 on the mixture study by Principal Forensic Services and should support the guidance that the DNASG should give to the FSR. It was agreed that a supporting document should be developed as guidance based on Roberto Puch-Solis' paper. Roberto Puch-Solis agreed to draft a summary guidance for the types of relationship testing methods that can be used. The scope needed to be qualified to cover STR based systems.

Action 7: Roberto Puch-Solis to draft a summary guidance for the types of relationship testing methods that can be used.

Minimum Load Criteria Review

4.10 Adam Shariff reported that the review looked at revisions made to the Minimum Load Criteria (MLC) for the acceptance of DNA profiles on the NDNAD, to support the move to DNA17 chemistry systems. The review recommended that the MLC should revert back to A+4 SGM. The DNASG agreed that recommendation.

Agreed definition of “clear major profile” and “complete major profile”

4.11 The FSR had requested that the DNASG agree the criteria for defining a “clear major” and “complete major” profiles. The two terms “clear major” and “complete major” effectively have the same meaning but are used by different suppliers to describe the same type of result and therefore the Criminal justice System believes them to have distinct meanings. A suitable definition for both phrases is: “an unambiguous result derived from a mixture and suitable for figures to be applied”. The definition: “an ambiguous result derived from a mixture and unsuitable for figures to be applied” would apply when there was not a clear/complete major.

4.12 The DNASG agreed with these definitions. Jim Thomson agreed to check the definitions with the scientists at LGC.

Action 8: Jim Thomson to check the definitions of “clear major profile” and “complete major profile” with LGC scientists

Item 5: Cleaning and Environmental Monitoring

Anti-contamination - update

5.1 The protocol for elimination databases had been published and the protocol sets out the basic requirements and information for investigating and reporting contamination events. The guidance on anti-contamination for laboratories and scene of crime were published and this was the last week for responses to the consultation.

Cleaning validation

5.2 Denise Syndercombe-Court thanked all DNASG members that sent details of how their organisations performed cleaning validation. One of the tests was being repeated but in general the study by the Met Police and Kings College showed that there was no difference between cleaning agents. The differences were made with the frequency of cleaning and use of alcohol wipes and not paper. Denise agreed to circulate the paper on cleaning validation.

Action 9: Denise Syndercombe-Court to circulate the cleaning validation paper

Item 6: Professional and Scientific updates

ENFSI

6.1 It was proposed that there should be an update on anti-contamination guidance at the next ENFSI meeting in April. Jim Thomson volunteered to give a presentation on mixture/PT, while Denise volunteered to present on lab cleaning.

EuroforGen

6.2 EuroforGen held a meeting in Brussels on the topic of seeking funding for research in forensics. They were developing software that could look at mixtures, predictors and DNA markers for body fluid identification. They will be looking at electro-chemical bio-sensors and specific phenotypic investigation.

IFSG

6.3 The International Society for Forensic Genetics will run an ethics and legal workshop in the near future. They are developing a virtual area for the public and scientists – a one-stop shop for forensic genetics. They will also be considering a review on nomenclature as a result of next generation sequencing technology.

6.4 June Guinness agreed to check with the FSR whether there should be a presentation on mixtures to the IFSG.

Action 10: June to check with the FSR whether there should be a presentation on mixtures to the IFSG

Item 7: AOB

7.1 The DNASG needed to consider Y-STRs at its next meeting as FSP were receiving increasing numbers of requests for cases involving sexual offences. Representatives of FSPs agreed to send details of the services where they were providing Y-STR analysis to the secretariat.

Action 11: FSP representatives to send details of their Y-STR services to the secretariat

7.2 An issue was raised about the anti-contamination guidance in terms of exhibits in labs and the cleaning of exhibits and the use of paper bags. This issue should be fed back as a consultation response.

7.3 Illumina were running a webinar on NGS on Monday. June Guinness agreed to circulate the link.

Action 12: June Guinness to circulate the Illumina webinar link²

7.4 June Guinness had collated the feedback on ISO18385 and will provide an update at the next DNASG meeting.

Action 13: June Guinness to provide an update on ISO18385 at the next DNASG meeting

Item 8: Date of the next meeting

8.1 TBA June/July 2015

² Link circulated

Annex A

Present:

Sue Pope	DNA Principal Forensics (Chair)
Nic Clayson	Body Fluid Forum
Andrew Gibb	Scottish Police Authority (for Ben Mallinder)
June Guinness	Forensic Science Regulation Unit
Brian Irwin	FSNI
Roberto Puch-Solis	Royal Statistical Society
Dorothy Ramsbottom	Forensic Science Laboratory, Ireland
Adam Shariff	Home Office NDNA Delivery Unit
Denise Syndercombe-Court	International Society for Forensic Genetics
Jim Thomson	LGC Forensics
Huw Turk	Orchid Cellmark
Des Van Hinsberg	Key Forensic Services
Kenny Chigbo	(Secretary)

Apologies

Kathryn Dagnall	Met Police
Ian Elkins	CPS
Shazia Khan	Met Police
Ben Mallinder	Scottish Police Authority
Shirley Marshall	Chartered Society of Forensic Sciences
Andy Ward	UKAS