

EUROPEAN DNA PROFILING (EDNAP) MEETING

BRUSSELS 22 MARCH 1997

Host: Dr. Anne Leriche, Institut National de Criminalistique.

Chairman: Dr. Niels Morling.

A list of participants is enclosed. Sweden was not represented.

REPORT OF THE MEETING

1. Update on EDNAP exercises

D21S11 and HUMFIBRA

Peter Gill reported that the paper on this exercise is in press in *Forensic Science International*.

The Oslo Triplex (SE33, APOAI1, and D11S554)

Peter Gill distributed the results of the triplex exercise. The variation between laboratories was 0.5 bp for SE33 and 2.5 bp for APOAI1 and D11S554. Peter Gill will send out a questionnaire on the analytical parameters to the members in order to try to identify factors responsible for the high inter-laboratory variability of APOAI1 and D11S554. It was agreed that Peter Gill makes a draft for a report of the results obtained until now. It was decided that Oslo should take the initiative if further exercises on the triplex are to be done, e.g. in a collaboration with a smaller group of laboratories which have a special interest in the triplex.

It was the general opinion that the high inter-laboratory variation of the measurements of APOAI1 and D11S554 does not mean that these loci cannot be used with confidence in the individual laboratories.

D12S391

Angel Carracedo reported that the variation between laboratories was approximately 1 bp. Three of 9 laboratories reported incorrect results of sample no. 5 which carries the 18.3 allele. The following variants have been found and sequenced: 17.3 (220 bp), 18.3 (224 bp), and 19.3 (228 bp).

It was agreed to present the results of D12S391 in a report together with the results of the Oslo triplex. Peter Gill will make a draft.



Mitochondrial DNA

Six laboratories have submitted results to Peter Gill. It would be of interest to know if the laboratories are experienced in the methodology. Therefore, the laboratories are kindly asked to state whether mitochondrial analysis is routinely used and reported.

Second generation multiplex (SGM) from FSS

The SGM is used in an exercise in the ENFSI DNA working group. EDNAP members who are not members of this group have been offered material for the exercise including ENFSI stain material. David Werrett informed that the organizers prefer that the ENFSI stains are analyzed instead of the stains which have been used in previous EDNAP exercises.

There was some debate on this subject. Steven Rand expressed concerns in taking part in the ENFSI exercise and preferred that the EDNAP stains were examined by the EDNAP members as part of an EDNAP exercise.

(After the discussion concerning the roles of ENFSI and EDNAP (confer below), the general opinion was that the SGM study naturally falls within the framework of ENFSI).

2. New EDNAP exercises

DIS1656

Angel Carracedo proposed to perform a collaborative exercise on the DIS1656 locus. The locus consists of 4 bp repeats with the sequence $(TAGA)_n/(GATA)_n$. Until now, only one intermediate allele (146 bp) has been observed. The size range is approximately 120 bp - 160 bp. The heterozygosity is 0.90%.

It was agreed that Angel Carracedo sends out allelic ladder and to use the seven EDNAP stains for the exercise.

DYS385

Peter Schneider proposed to perform a collaborative exercise on the Y-chromosome locus DYS385. The locus consists of two tandemly placed, duplicated loci, each with 4 bp repeats with the sequence $(GAAA)_n$. The size range is approximately 360 bp - 408 bp. For each Y-chromosome, two fragments are detected.

Peter Schneider reported that, in Mainz, 13 different fragments and 50 combinations of types had been observed in 142 Caucasians and 100 Chinese. The most common combination of types in Germans was 11-14 with a frequency of 33.8%. The frequencies of other combinations of DYS385-fragments were below 5%. The frequencies of combinations of DYS385-fragments differed between the two populations. No mutation had been observed in 60 father/son pairs.

Peter Schneider distributed a sequenced ladder consisting of the alleles nos. 11, 13, 15, 17, and 19 and basic information concerning amplification of DYS385. One μ l should be used for amplification of the ladder. It was agreed to type the seven EDNAP stains. (Peter Schneider has later suggested that the DYS385-1 primer is labelled when typing on ABI machines.)



3. Future EDNAP exercises

Degraded DNA

It was suggested to perform an exercise on degraded DNA. Peter Schneider offered to prepare light treated, degraded DNA for an exercise. At the first glance, the loci HUMTH01, HUMVWA, D21S11, and HUMFIBRA seem to be good candidates for the exercise. The suggestion will be taken up again at the next EDNAP meeting.

Mixed stains

It was suggested to perform an exercise on mixed stains. The suggestion will be taken up again at the next EDNAP meeting.

4. Update on ENFSI activities

David Werrett, who is the chairman of the ENFSI (European Network of Forensic Science Institutes) DNA working group, informed about the work of ENFSI and circulated the terms of reference (enclosed). The ENFSI group has performed an exercise including 32 laboratories on the second generation multiplex (SGM) of the FSS. The results are going to be discussed at the next ENFSI meeting 29 May 1997 in Parma.

The roles of EDNAP and ENFSI were discussed. Steven Rand expressed concerns about participation in the ENFSI collaboration because of the possible conflict of interests which might arise between university institutes and institutes with a different organization. Some members from organizations which participate in both ENFSI and EDNAP expressed concerns about their future participation in EDNAP because they felt that there was a lack of understanding of the usefulness of the EDNAP collaboration in their organizations.

During the discussion, it became clear that the primary purpose of ENFSI is education, implementation, and establishment of key operational processes in case work, while EDNAP is primarily focusing on emerging technologies, guidelines, nomenclatures, interpretations, standards, etc. It was the general opinion that both ENFSI and EDNAP are very useful organizations. It was also clear that it might be helpful to the representatives of some laboratories if the different roles of ENFSI and EDNAP were clarified to the board of directors of ENFSI. David Werrett agreed to draft a clarifying letter to the board of directors of ENFSI.

5. Update on the status in the member laboratories (STR, VNTR, mtDNA) and on database situation

Some members have wished to be updated on the present situation and on the future directions in the laboratories concerning the genetic systems used in



forensic investigations. Enclosed please find a draft of the information based on the information submitted.

Peter Gill presented an update on the database situation in the UK. At the moment the database contains DNA profiles on approximately 150,000 persons. A total of 3,000 matches with person profiles and 1,500 matches with other stain profiles have been found.

A new combination of STR systems, TGM (third generation multiplex), is going to be introduced. The TGM will be used for further investigations when a match has been found in the intelligence database. The power of discrimination (PD) of the SGM is 10^{-7} and the combined PD of the SGM and TGM is 10^{-15} .

Herman Schmitter informed that, in Germany, it seems as if there is a growing interest in intelligence DNA databases.

6. Support for further collaborative exercises

Peter Schneider informed that ABI had offered to supply test kits for new systems. Steve Rand expressed concerns about the offer because it might make the members dependant on a single supplier. It was the general opinion that testing of kits was not in agreement with the ambition of EDNAP. The EU application expresses an intend to collaborate with commercial companies. Therefore, areas of interest for collaboration should be identified. Such areas could be e.g. information concerning future directions, exchange of technical information, testing of equipment, etc.

7. Status on the STADNAP application for EU funding

Peter Schneider informed that the EDNAP application has been positively received. Peter Schneider and Angel Carracedo have been invited for further negotiations with the EU in April 1997.

Peter Schneider has sent the following information which I have copied from the e-mail:

These negotiations have taken place in the meantime, and were quite helpful in understanding the intentions of the EC as well as the funding procedures. Further steps are as follows:

1. Submission of the final budget as well as a technical annex giving details on the objectives and the work programme (we are preparing a draft which will include four areas: (WP 1) State-of-the-Art-Review, (WP 2) Intercomparison Exercises; (WP 3) Technology Transfer (this will provide short-term fellowships for lab visits); (WP 4) DNA Database Compilation (including Internet access). We will have to elect working groups among ourselves for each topic at the next meeting



2. Angel Carracedo will act as contractor and sign the main contract with the EC based on the budget proposal and the work programme.

3. Then all participants will have to sign a contract of association with Angel as the legal basis for receiving money and fulfilling the contract.

4. Accounts have to be set up by each participant. Angel will receive the money from the EC and will distribute the money assigned to each lab (travel expenses + 20% overhead). Other expenses for exercise supplies and fellowships will be administrated centrally by Angel.

5. After the contracts have been concluded, the network is installed officially. We can have our constitutive meeting already in Oslo, and may have received already the first installment of the budget.

8. Nomenclature of DNA (STRs, mtDNA, etc.)

Patrick Lincoln informed that new recommendations of the DNA Commission of ISFH are in progress. Peter Gill and Patrick Lincoln informed that the EDNAP STR nomenclature paper, which contains more detailed suggestions, is now ready for publication with a few minor changes. It was the general opinion that the DNA Commission of ISFH should give the general guidelines, while EDNAP, in the future, should address specific problems which cannot be dealt with in the general guidelines.

9. Discussion of the NRC II report

Ate Kloosterman briefly presented the NRC II report and commented on the recommendations on frequency calculations and quality assurance. He found that the report contained many useful recommendations and examples of special statistical calculations but had difficulties in following all the details in the recommendations on database issues.

David Werrett informed that, in the US, a DNA Advisory Board has been established. The purpose of the board is to help with the implementation of the guidelines of the NRC II report.

The needs for European or international guidelines were discussed and the possibility of establishing such guidelines through an advisory board of the IFSH or EDNAP was mentioned.

Peter Gill offered to investigate if an internal FSS document giving guidelines concerning database and population issues could be circulated to the EDNAP members.



10. EDNAP on the internet

Peter Schneider has established an EDNAP Home Page at the Internet. It was agreed to try to include the following information:

- list of member laboratories
- contact persons
- STR database information (only published data)

It was also considered to include links to other internet sites and abstracts from EDNAP publications if this is accepted by the publisher of the papers.

Peter Schneider has sent the following information which I have copied from the e-mail:

The list of member laboratories has already been added (please check!). Peter Schneider would like to know who should be named as contact person for each lab. Please send him an e-mail! As the database collection will be part of the STADNAP programme, this will be done in more detail at a late stage. Also, a link to the ISFH homepage has been added.

11. Next EDNAP meeting

The next EDNAP meeting will take place during the ISFH meeting 2-6 September 1997 in Oslo.



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