STANDARDIZATION OF DNA PROFILING TECHNIQUES IN THE EUROPEAN UNION (STADNAP) MEETING

Innsbruck 13 June 1998

Host: Professor Richard Scheithauer

Chairman: Dr Niels Morling

A list of participants is attached at Annex 1

REPORT OF THE MEETING

1. Welcome

Richard Scheithauer welcomed members to Innsbruck.

Niels Morling introduced representatives from Amersham-Pharmacia-Biotech, Perkin Elmer and Promega (see Annex 1)

2. Presentations from the commercial companies

2.1. EMD mutation scanning technology (see Annex 2)

Raquel de la Guerra and Carina Schmidt - Amersham-Pharmacia-Biotech

An enzyme based system was described for determining single base mutations. The results of screening tests and blind trials were presented and a list of advantages over current methodology were put forward.

It was suggested that this technology could be used for mtDNA analysis.

2.2 Multiplex kits and upgrades for ABD 377 (see Annex 3)

Nicola Fildes - Perkin Elmer

A recently released product is the AmpFlSTR Cofiler kit consisting of 13 loci for the new CODIS DNA database. Kits include allelic ladders and all alleles have been sequenced. Quality control criteria were described.

The AmpFlSTR SGM Plus kit which has 10 loci + Amelogenin contains all loci present in the FSS multiplex. The kit, which is being tested by 23 ENFSI labs, should be available by November 1998.

There is an upgrade for the ABD 377 to allow for 96 lane gels. A multi-channel loader is being developed by Hamilton.

2.3. New Multiplex systems (see Annex 4)

James Schumm - Promega

As well as describing some of the Powerplex kits the talk concentrated on the development of new pentanucleotide loci which are to be included in future products. These pentanucleotides are less prone to producing stutter bands than some of the tetranucleotide alleles. The company are well advanced with the development of primer sets and new dye additions will be available.

Powerplex 16 is being developed which has 16 loci + Amelogenin. It will incorporate 2 of the pentanucleotide loci.

Members were invited to take part in the validation of the new pentanucleotide loci.

3. Update on STADNAP exercises

3.1 mtDNA exercise Angel Carracedo

The objective of this inter-laboratory exercise was to determine whether uniformity of results could be achieved by participating laboratories. This objective has been fulfilled as all laboratories produced identical results. A manuscript has been submitted for publication and a response from the journal is awaited.

The problem of multi-authorship was raised as some journals set a limit on the acceptable number. This question will be raised at the next meeting.

3.2 Y chromosome project Peter Schneider

A draft of the manuscript for publication has now been prepared. There were some minor problems. One laboratory had transposed results; a situation which could have arisen due to receipt of mislabelled samples. Another laboratory had problems with electrophoretic resolution of large fragments. There is a new primer listed which produces shorter fragments and this should alleviate the problem. A comment will be made in the publication. Members are still required to submit technical details, e.g. type of sequencer, before the manuscript can be completed.

The population data is still somewhat sketchy and it might be necessary to add to the existing numbers. There are three options:

(a) leave as it is and submit for publication

(b) get more information - each population sample should have a minimum of 100 individuals
(c) omit the population data from the publication

Feedback should be sent to Peter Schneider by the end of July.

3.3 Planned mtDNA exercise Peter Gill

Nine laboratories have classified themselves as proficient in the technique and will be participants in the exercise. A further 10 laboratories consider themselves as training laboratories and will take part but their results will not be included.

Ten hairs have been collected and each laboratory will receive a portion of each hair (the training labs will only receive 5 samples). The FSS will retain the hair root in case of discrepant results or some detailed analysis is required in the future.

Mitch Holland and Bruce Budowle have expressed an interest in joining the exercise. The meeting agreed that they could be included.

Participants should retain the extracts from the hair samples for future exercises. If there is insufficient extract for complete analysis, the HV1 region should be typed as a priority. Results from the exercise will be sent to the training labs for them to assess their analyses.

Members should complete the exercise and submit the results by the end of September.

4. Update of ENFSI activities Ate Kloosterman

The population database exercise is continuing and Evett and Foreman, at the FSS, are currently analysing the data. The results will be presented to the 22 July 1998 meeting in London.

There is a current exercise on reporting the result from a DNA analysis which is being evaluated at Lausanne. The results will also be presented to the 22 July 1998 meeting.

An exercise to evaluate the Perkin Elmer Profiler Plus kit, which includes the SGM, is underway. Promega are supplying a kit for the next multiplex exercise.

ABD and Promega made presentations at the meeting in Bruxelles and discussed the sharing of information with police etc.

5. Reports from the Working Parties

5.1 WP1 Ate Kloosterman

It was agreed that WP1 will meet with WP2 to prepare a list of recommendations for the future work. These will be prioritised and will include equipment needed as well as the science involved.

5.2 WP2 Peter Gill

The list of objectives was restated with regard to the meeting with WP1. After some discussion it was proposed that there should not be a duplication of work already being carried out by ENFSI.

5.3 WP3 Steve Rand

The applications received so far fall within the allocated budget

5.4 WP4 Ernesto d'Aloja

It is planned to have a stepwise programme to collect population studies for the relevant loci. This will start with THO1 and all laboratories are invited to send databases to WP4. A clear statement of goals will be prepared and the results will be collected via the Internet from all major laboratories. Details concerning ethnic groups, typing procedures etc. will also be collected.

After the presentations, the members continued the discussion in the working parties.

6. Post-discussion Working Party presentations

6.1 WP1 and WP2 presentation Ate Kloosterman

Four areas involving inter-laboratory exercises were identified and, as it was considered possible to progress all four, there was no need to prioritise the initiatives.

The four inter-laboratory exercises are:

(a) A study of the pentanucleotide repeat units described by Jim Schumm. Promega have agreed to work with the group and supply the necessary reagents. The details of the exercise will be elucidated after the meeting.

The project leaders will be Ate Kloosterman and Steve Rand.

(b) This project was designed to produce degraded material which could be retained and used as a standard for testing purposes. It was suggested that samples could be degraded using mechanical (e.g. sonication) or chemical (e.g. enzymatic) methods, but nothing definite was decided.

The project leader will be Peter Schneider and he will design the experiments.

(c) The pentaplex of Y chromosome loci, as suggested by Angel Carracedo will form the basis of this inter-laboratory exercise.

The project leaders will be Angel Carracedo and Peter Schneider.

(d) The EMD technology described by Amersham Pharmacia-Biotech will be evaluated using the known base mutations in mtDNA.

The project leaders will be Angel Carracedo and Peter Gill and they will design the experimental details.

There was some discussion on the development of chip technology and it was agreed that there was little benefit in looking at inter-laboratory exercises at present. Instead we will keep a watching brief on future developments.

Those members who wish to take part in the above exercises should (1)complete the form at Annex 5 and return it to Niels Morling and (2) contact the project leaders.

6.2 Report form WP3 Steve Rand

Phase 1: In response to the call for applications from STADNAP members, seven were received for secondments under mt-DNA training as follows:

1.Linköping,	Ann Jangblad
2.Athens,	Ioulia Skitsa
3.Brussels,	Bernadette Hoste
4.Copenhagen,	Niels Morling
5.London,	Denise Syndercombe Court
6.Oslo,	Bente Mevåg
7.Wiesbaden,	Hermann Schmitter

Some of the applications were made in retrospect but as we had not exceeded our budget it was decided that all applications would be accepted. Each applicant should make the arrangements with the host laboratory directly. A brief description was supplied by each applicant which will be filed in Münster.

Applicants must submit a request in writing for 500 ECUs to Angel Carracedo who is responsible for allocation of funds, under this code:

STADNAP Phase1 allocation mt-DNA

Phase 2: Secondments from laboratories outside STADNAP:

A statement will be formulated by Münster to be agreed on by all WP3 members and will be published in the newsletters and the homepage STADNAP and, if possible, in other relevant places. Priority will be given to European labs who consider that they have a lower level of expertise than that currently accepted as the standard. The urgency of training and the promotion of younger scientists will also be given priority.

In view of the decision to look at new technologies and the forthcoming meeting of STADNAP it was decided that for future secondments priority will be given to promoting contact and information exchange with commercial companies involved. Contacts have already been established by Angel Carracedo and Peter Gill which will be intensified prior to the next meeting. Other suggestions are also welcome.

Applications from STADNAP members for secondments in respect to other topics can still be submitted. The amount of funding is still to be decided and will obviously depend on the number and fair distribution of funding , but will probably be on a similar basis to the phase 1 applications.

6.3 Report from WP4 Ernesto d'Aloja

It is hoped that database information will be available from ENFSI. Ernesto d'Aloja will ask all national forensic science laboratories and paternity testing laboratories to supply data.

7. Practical notes on the STADNAP project

7.1 Transfer of money Angel Carracedo

The finances are now in a healthy condition; all labs should have received the 40% advance. In September 1998 we will receive another 25% and in September 1999 a further 25% will be paid. The final 10% will be received at the termination of the STADNAP project.

The EU representative, Christos Profilis, has indicated that the situation with the French police laboratories is not a serious problem but their share of the grant cannot be used by other laboratories.

7.2 Newsletter Peter Schneider

Angel Carracedo has written a Technical Project Update and a Management Report, both of which have been sent to Bruxelles (see Annex 6)

The Newsletter should contain an outline of the project together with the objectives and a list of personnel involved. We should build up a mailing list and target companies and others who we wish to receive information. It is intended to use the newsletter as a platform for advertising our presence and activities.

The first Newsletter will be produced by 15 July.

7.3 Socio-legal research group Peter Martin

At present there is nothing to report as the group have yet to start their project.

7.4 25th BCR Anniversary Conference Angel Carracedo

The conference is scheduled for 9-13 November 1998 and STADNAP has been invited to attend. As this is a very political meeting and could have some importance Peter Schneider was asked to attend on behalf of the group.

Angel Carracedo has received a letter from the EU representative Christos Profilis with apologies for being unable to attend the Innsbruck meeting.

8 Communication of Activities Peter Schneider

At present, there is no change to the EDNAP homepage and it is still necessary to hire somebody to make the necessary additions to the STADNAP homepage.

A logo for STADNAP was circulated for comment.

9 DNA database activities in Europe Peter Schneider

Peter Schneider will prepare a synopsis of his presentation to the Promega meeting (see Annex 7)

10 Collaboration with commercial companies Angel Carracedo

It is planned that there should be a meeting for presentations to the various companies. This could be held on the day preceding an EDNAP meeting. Research topics etc could be included.

11 Next meeting

The next meeting will be held sometime after November 1998. The Swedish laboratory had kindly offered to host this meeting but it was thought that this might not be a good time for travel to Sweden, which probably will be better suited for a summer meeting. Angel Carracedo suggested Malaga, Canaria or the Algarve as possible venues. Angel Carracedo and Maria Conceicao will explore the possibilities and inform the members.

12 Any other business

There was no other business and the meeting was closed.

Enclosures:

Annex 1: List of Participants
Annex 2: Presentation of Amersham-Parmacia-Biotech

Annex 3: Presentation of Perkin Elmer
Annex 4: Presentation of Promega
Annex 5: Form for expressing interest in participation in the planned projects
Annex 6: Technical Project Update and a Management Report
Annex 7: Synopsis of Peter Schneider's presentation to the Promega meeting

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