ERNDIM DPT Center Eastern Europe

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Proficiency Testing Centre Eastern Europe: Annual Report 2004

1. Introduction

Our Proficiency Testing Centre served for countries from predominantly Central and Eastern Europe in 2004.

2. Geographical distribution of participants

Twenty laboratories from 12 countries have participated in our DPT scheme in 2004.

Country	Number of participants
Austria	2
Croatia	1
Cyprus	1
Czech Republic	1
France	1
Germany	5
Greece	1
Malaysia	1
Poland	1
Slovakia	2
Switzerland	3
Turkey	1
TOTAL	**20**

3. Logistics of the scheme

- ✓ Two surveys: 2004/1 – samples A, B and C
  2004/2 – samples D, E and F
- ✓ Origin of samples: Five urines obtained from the patients with known diagnoses (samples were provided by the DPTC participants and by the organizers) and a common sample from DPT Centre Central Europe (distributed in all four DPT schemes); all samples have been reanalyzed in our lab after heat-treatment, diagnostically relevant metabolites were detected in all six samples after 3-day incubation at RT.
- ✓ Shipment of samples: Six heat-treated urines were shipped at once by express courier service together with results protocols. Samples were shipped at ambient temperature.
- ✓ Tests required: amino acids, organic acids, mucopolysaccharides, oligosaccharides and purines/pyrimidines

- ✓ Communication between the organizers and the participants occurred by e-mail, fax and regular mail.

4. Schedule of the scheme in 2004

Sample distribution	March 22
Survey 2004/1 – results submission	April 16
Survey 2004/1 – report	May 14
Survey 2004/2 – results submission	June 18
Survey 2004/2 – report	July 23
Annual meeting of the participants	August 31
Annual report 2004	October 31

5. The receipt of samples and results

Date of receipt of samples (samples sent on March 22, 2004)

Date of receipt (reported by participants)	Number of participants	Date of receipt (reported by courier service)	Number of participants
1 day	7	1 day	12
2 days	2	2 days	5
4 days	3	3 days	2
8 days	1	4 days	1
not indicated	7	-	-

Deadlines of the results submission

	2004/1	2004/2
in time	20	19
11 days delay	-	1

As in previous years we used courier service Pegasus Express for samples distribution, the service seems to be reliable.

6. Scoring of results

Three criteria are being evaluated: analytical, interpretative and recommendations for further investigations. Due to the large variability in reporting results in various countries recommendations to treatment are not evaluated in proficiency testing, however, they are still reported and summarized by the scheme organizers.

A	Analytical performance	Correct results of the appropriate tests	2
		Partially correct or non-standard methods	1
		Unsatisfactory or misleading	0
I	Interpretative proficiency	Good (diagnosis was established)	2
		Helpful but incomplete	1
		Misleading/wrong diagnosis	0
R	Recommendations	Helpful	1
		Unsatisfactory or misleading	0

The total score was calculated as a sum of these three criteria. The maximum that can be achieved is 5 points per sample, i.e. 15 points per survey and 30 points per year.

7. Score of participants for individual samples

Survey 2004/1

Lab no	Sample A Alkaptonuria				Sample B Adenylosuccinate lyase deficiency				Sample C Homocystinuria			
	A	**I**	**R**	**Total**	**A**	**I**	**R**	**Total**	**A**	**I**	**R**	**Total**
301	2	2	1	**5**	0	0	1	**1**	0	0	1	**1**
302	2	2	1	**5**	2	2	1	**5**	2	2	1	**5**
303	2	2	1	**5**	2	2	1	**5**	2	2	1	**5**
304	2	2	1	**5**	0	0	0	**0**	2	2	1	**5**
305	2	2	1	**5**	0	1	1	**2**	2	2	1	**5**
306	2	2	0	**4**	0	1	1	**2**	2	2	1	**5**
307	2	2	1	**5**	0	0	1	**1**	2	2	1	**5**
308	2	2	1	**5**	0	0	0	**0**	2	2	1	**5**
309	2	2	1	**5**	0	0	1	**1**	2	2	1	**5**
310	2	2	1	**5**	2	2	1	**5**	2	2	1	**5**
311	2	2	1	**5**	2	2	1	**5**	2	2	1	**5**
312	2	2	1	**5**	0	0	0	**0**	2	2	1	**5**
313	2	2	1	**5**	0	0	0	**0**	2	2	1	**5**
314	2	2	1	**5**	0	1	0	**1**	2	2	1	**5**
315	2	2	1	**5**	0	0	0	**0**	2	2	1	**5**
316	2	2	1	**5**	0	0	0	**0**	2	2	1	**5**
317	2	2	1	**5**	0	0	0	**0**	2	2	1	**5**
318	2	2	1	**5**	0	0	0	**0**	1	2	1	**4**
319	2	2	1	**5**	0	0	0	**0**	2	2	1	**5**
320	2	2	1	**5**	0	0	0	**0**	2	2	1	**5**

Survey 2004/2

Lab no	Sample D Glutaric aciduria type I				Sample E MPS III				Sample F Mevalonic aciduria			
	A	**I**	**R**	**Total**	**A**	**I**	**R**	**Total**	**A**	**I**	**R**	**Total**
301	2	2	1	**5**	2	2	1	**5**	2	2	1	**5**
302	2	2	1	**5**	1	1	1	**3**	2	2	1	**5**
303	2	2	1	**5**	1	1	1	**3**	2	2	1	**5**
304	2	2	1	**5**	2	2	1	**5**	2	2	0	**4**
305	2	2	1	**5**	0	0	0	**0**	0	0	0	**0**
306	2	2	1	**5**	1	1	1	**3**	2	2	1	**5**
307	2	2	1	**5**	1	1	1	**3**	2	2	1	**5**
308	1	2	1	**4**	1	1	1	**3**	2	2	1	**5**
309	2	2	1	**5**	0	0	0	**0**	2	2	1	**5**
310	2	2	1	**5**	1	0	0	**1**	2	2	1	**5**
311	2	2	1	**5**	0	0	0	**0**	2	2	1	**5**
312	2	2	1	**5**	0	0	0	**0**	2	2	0	**4**
313	2	2	1	**5**	0	0	1	**1**	2	2	1	**5**
314	1	2	1	**4**	0	0	0	**0**	0	0	0	**0**
315	2	2	1	**5**	1	0	1	**2**	2	2	1	**5**
316	2	2	1	**5**	0	0	0	**0**	2	2	1	**5**
317	2	2	1	**5**	2	0	0	**2**	2	2	1	**5**
318	2	2	1	**5**	0	0	0	**0**	0	0	0	**0**
319	2	2	1	**5**	1	1	1	**3**	0	0	0	**0**
320	2	2	1	**5**	1	1	1	**3**	2	2	1	**5**

8. Total score of participants for individual surveys and their performance in 2004

Lab no	2004/1 [points]	2004/2 [points]	Total point 2004
301	7	15	22
302	15	13	28
303	15	13	28
304	10	14	24
305	12	5	17
306	11	13	24
307	11	13	24
308	10	12	22
309	11	10	21
310	15	11	26
311	15	10	25
312	10	9	19
313	10	11	21
314	11	4	15
315	10	12	22
316	10	10	20
317	10	12	22
318	9	5	14
319	10	8	18
320	10	13	23

9. Poor performers

The DPT system should enable identification of poor performers, who should be offered special assistance from the organizers with an aim of detecting problems and improving the diagnostic proficiency. Every year proficiency of each lab should be evaluated. A consensus on the borderline between good and poor performance within ERNDIM has been reached. The Scientific Advisory Board of ERNDIM suggested that 50% performance should be still considered satisfactory. Participants who obtained 14 points or less within the calendar year will receive a warning letter from the organizers.

10. Annual meeting of the participants

The annual meeting of participants of the Proficiency Test Centre Eastern Europe took place during the 41st Annual Symposium of SSIEM in Amsterdam (31st August 2004, 9:30-10:30). The meeting was followed by ERNDIM joint DPTC meeting. The following items were discussed during the annual meeting:

- ✓ **Scoring**

There were no comments on scoring of individual samples; the scores given in sections 7 and 8 of this report are final scores for 2004.

- ✓ **Test required**

We discussed the issue of analysing metabolites, for which the methods are not obligatory requested in Proficiency Testing Schemes (e.g. OLS, saccharides, polyols). Although the participants were in favour of including samples from patients with diagnoses such a galactosemia, it is unclear to the organizers how to score such samples. In our opinion this issue requires further discussion.

- ✓ **Bacterial contamination of samples**

Distribution of the bacterial contaminated and possibly decomposed urines in DPT Scheme is a continuous problem. Contamination should be prevented although it may be hard to achieve. The quality of the samples distributed in 2004 improved, nitrites were detected only in the urinary sample D.

- ✓ **Larger volumes of urines with low creatinine**

Urinary volume distributed so far (about 10 ml) can be insufficient in cases when urine is diluted. Some participants were not able to do all planned investigations (e.g. control sample 2004/E from a patient with MPS III). Organizers suggest distribution of larger volumes in such cases – about 20 ml of low concentrated urine (creatinine below 1.5 mmol/l).

- ✓ **Contribution of samples**

Please, note that DPT schemes cannot run without cooperation with participants and that each participant of the Scheme is obliged to contribute one urinary sample every year. To avoid a possible multiplicity of some common diagnoses, please, send the samples only after prior arrangement with the scheme organizers. At least 250-300 ml of urine is needed for distribution in the DPT Centre Eastern Europe, for samples with low creatinine 500-600 ml should be collected (see above). Once every 4 years our DPT Centre is obliged to contribute at least 1200 ml of urine (2400 ml for diluted samples), which is than distributed as a common sample in all 4 DPT Centres. Send the heat-treated urine at ambient temperature together with short clinical information (as given by the clinician when the sample was first referred for metabolic investigation) and with present treatment and age when the sample was collected and with description of the confirmatory diagnostic tests.

- ✓ **Individual samples in 2004**

Two samples in 2004 were found difficult. Urine B from a patient with adenylosuccinate lyase deficiency was a difficult sample due to restricted availability of P/P analysis and failure to detect the key metabolites. In some cases the participants did not achieve the correct results due to problems in the cluster lab. The alternative TLC method for detection of SAICAR was discussed as an alternative to HPLC technique. Unfortunately, the standards of SAICAR and succinyladenosine are not commercially available, but they are synthesized in some lab. As a substitution for the standard the organizers will send 10 ml of urine obtained from the patient with ADSL deficiency in the next distribution of samples. P/P analysis remains problematic as seen for samples 2004/B and 2003/A (Lesch-Nyhan).

Also sample E from patient with MPS III was a very difficult sample due to misleading clinical information (exactly taken from real life) and limited urinary volume with low creatinine concentration of about 1 mmol/l. Nevertheless, poor analytical and interpretative performance for this sample suggests that possible difficulties in laboratory diagnosis of MPS (and generally speaking in lysosomal storage disorders) exist in participating laboratories. TLC method for MPS determination has been offered by Ms. Miljenka Maradin as an alternative method for labs not performing electrophoresis of MPS. http://www.vfn.cz/udmp/laborator/proficiency.htm

- ✓ **"Difficult" and "easy" samples ratio**

Score summary in 2004

Sample	Diagnosis	Analytical [%]	Interpretative [%]	Recommen-dations [%]	Total [%]
A	***Alkaptonuria***	100	100	95	99
B	***ADSL deficiency***	20	28	45	28
C	***Homocystinuria***	93	95	100	95

D	***Glutaric aciduria I***	95	100	100	98
E	***MPS III***	38	28	55	37
F	***Mevalonic aciduria***	80	80	70	78

"Easy" and "difficult" control samples are included in the surveys. The analytical and interpretative performance was very good for some diagnoses (e.g. alkaptonuria, homocystinuria and glutaric aciduria) while other diagnoses were more difficult (ADSL deficiency and MPS III). The participants considered the difficult and easy samples ratio = 2/6 appropriate and this ratio will be kept in next surveys.

- ✓ **Others**

Wide dispersion of quantitative results was observed, however the evaluation of precision and accuracy is not target of DPT scheme.
Participants complained about the quality of clinical reports. The organizers are redistributing reports which were provided by participants, the consensus seemed to use original clinical reports accompanying the samples at the time of diagnosis establishment.

11. Tentative schedule of DPT scheme and fee in 2005

Sample distribution	March 14, Monday
Start of analysis of Survey 2005/1	March 21, Monday
Survey 2005/1 – results submission	April 8, Friday
Survey 2005/1 – report	May 6, Friday
Start of analysis of Survey 2005/2	May 30, Monday
Survey 2005/2 – results submission	June 20, Monday
Survey 2005/2 – report	August 5, Friday
Annual meeting of the participants	September 6-9
Annual report 2005	October 31, Monday

The next annual meeting will be held in Paris during the 42nd Annual symposium of SSIEM in September 2005; the date will be specified in due course.

The Executive Board of ERNDIM determined the fee for 2005 in the amount of 268 €.

12. Certificate of participation in Proficiency Testing for 2004

The certificate of participation will be provided by the ERNDIM to all participants, who returned the results of both surveys. The issuing of a warning letter will be declared on the certificate.

Prague, November 25, 2004

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