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Diagnostic Proficiency Testing

Centre: Switzerland

Final Report 2019

prepared by
Brian Fowler

Note: This annual report is intended for participants of the ERNDIM DPT Switzerland scheme. The contents should not be used for any publication without permission of the Scientific Advisor.

The fact that your laboratory participates in ERNDIM schemes is not confidential, however, the raw data and performance scores are confidential and will only be shared within ERNDIM for the purpose of evaluating your laboratories performance, unless ERNDIM is required to disclose performance data by a relevant government agency. For details please see the terms and conditions on page18 and the ERNDIM Privacy Policy on www.erndim.org.
In 2019, 20 labs participated in the Proficiency Testing Scheme Switzerland.

1. Geographical distribution of participants

For both the first and second survey 20 laboratories submitted results.

Country	Number of participants
Australia	2
Austria	2
Canada	3
Estonia	1
Germany	3
Hong Kong	1
Netherlands	1
Norway	1
Sweden	2
Switzerland	1
United States of America	3

2. Design and logistics of the scheme including sample information

The scheme has been designed and planned by Brian Fowler as Scientific Advisor and coordinated by Xavier Albe as scheme organizer (sub-contractor on behalf of CSCQ), both appointed by and according to procedures laid down the ERNDIM Board.
CSCQ dispatches DPT EQA samples to the scheme participants and provides a website for on-line submission of results and access to scheme reports. Existing DPT and Urine MPS scheme participants can log on to the CSCQ results submission website at:
https://cscq.hcuge.ch/cscq/ERNDIM/Initial/Initial.php

2 surveys	Round 1: patients A, B and C
	Round 2: patients D, E and F

Origin of patients: Four of the urine samples were provided by the scheme organizers themselves, and one each by Katrin Ounap, Tarttu, Estonia and Sabine Scholl-Burgi, Innsbruck, Austria.

Patient A: APRTD
Patient B: MCCD
Patient C: No disorder
Patient D: MNGIE
Patient E: PCC deficiency
Patient F: MPS IIIA

The samples have been heat-treated. They were pre-analyzed in our institute after 3 days incubation at ambient temperature (to mimic possible changes that might arise during transport). In all six samples the typical metabolic profiles were preserved after this process.
Mailing: samples were sent by DHL; FedEx or the Swiss Post at room temperature.

3. Tests

Analyses of amino acids, organic acids, mucopolysaccharides, oligosaccharides and purines/pyrimidines were required in 2019.

4. Schedule of the scheme

- Feb 5, 2019: shipment of samples of survey 1 and survey 2.
- Mar 4, 2019: clinical details given and start of analysis of survey 1.
- Mar 25, 2019: deadline for result submission (survey 1)
- May 20, 2019: interim report of survey 1 by e-mail
- Jun 3, 2019: clinical details given and start of analysis of survey 2.
- Jun 24, 2019: deadline for result submission (survey 2)
- Aug 5, 2019: interim report of survey 2 by e-mail
- Sept 3: Annual meeting of participants in Rotterdam.
- Feb 2020: Annual report with final scoring by e-mail. The final report will be confirmed by the SAB.

5. Results

All labs returned results for both surveys by the deadline.

	Survey 1	**Survey 2**
Receipt of results	20	20
No answer	0	0

6. Web site reporting

The website reporting system is compulsory for all centres. Please read carefully the following advice:

- Selection of tests: **don't select a test if you will not perform it**, otherwise the evaluation program includes it in the report.
- Results
  - Give quantitative data as much as possible.
  - Enter the key metabolites with the evaluation **in the tables** even if you don't give quantitative data.

- If the profile is normal: enter “Normal profile” in “Key metabolites”.
- **Don’t enter results in the “comments” window**, **otherwise your results will not be included in the evaluation program.**

- Recommendations = **advice for further investigation**.
  - Scored together with the interpretative score.
  - Advice for treatment is not scored.
  - **Don’t give advice for further investigation in “Comments on diagnosis”**: it will not be included in the evaluation program.

7. Scoring and evaluation of results

Information regarding procedures for establishment of assigned values, statistical analysis, interpretation of statistical analysis etc. can be found in generic documents on the ERNDIM website. The scoring system has been established by the International Scientific Advisory Board of ERNDIM. Two criteria are evaluated: 1) analytical performance, 2) interpretative proficiency also considering recommendations for further investigations.

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

The total score is calculated as a sum of these two criteria. The maximum to be achieved is 4 points per sample. The scores were calculated only for laboratories submitting results.

Scoring and certificate of participation: scoring is carried out by a second assessor who changes every year as well as by the scientific advisor. The results of DPT Switzerland 2019 were also scored by Dr Joanne Croft from DPT-United Kingdom. At the SAB meeting on November 20-21, the definitive scores were finalized. The concept of critical error was introduced in 2014. A critical error is defined as an error resulting from seriously misleading analytical findings and /or interpretations with serious clinical consequences for the patient. Thus labs failing to make a correct diagnosis of a sample considered as eligible for this category will be deemed not to have reached a satisfactory performance even if their total points for the year exceed the limit set at the SAB.

Evaluation of critical errors for 2019, was as follows:

Sample A, not valid; sample B, missing metabolites (no Lab); sample C, not valid; sample D, not valid; sample E, missing key metabolites (no lab); sample F, missing diagnosis (no lab).

A certificate of participation will be issued for participation and it will be additionally notified whether the participant has received a performance support letter. This performance support letter is sent out if the performance is evaluated as unsatisfactory. One performance support letter will be sent by the Scheme Advisor for 2019. Any partial submitters will receive a letter from the ERNDIM Executive Administrator, Sara Gardner.

7.1. Score for satisfactory performance

At least 15 points were needed from the maximum of 24 (62%).

8. Results of samples and evaluation of reporting

8.1. Patient A

Adenine phosphoribosyltransferase deficiency (APRTD); OMIM #614723

Patient details provided to participants
The female was admitted to hospital due to a history of pain on passing urine. Had been treated but urine collected off treatment.

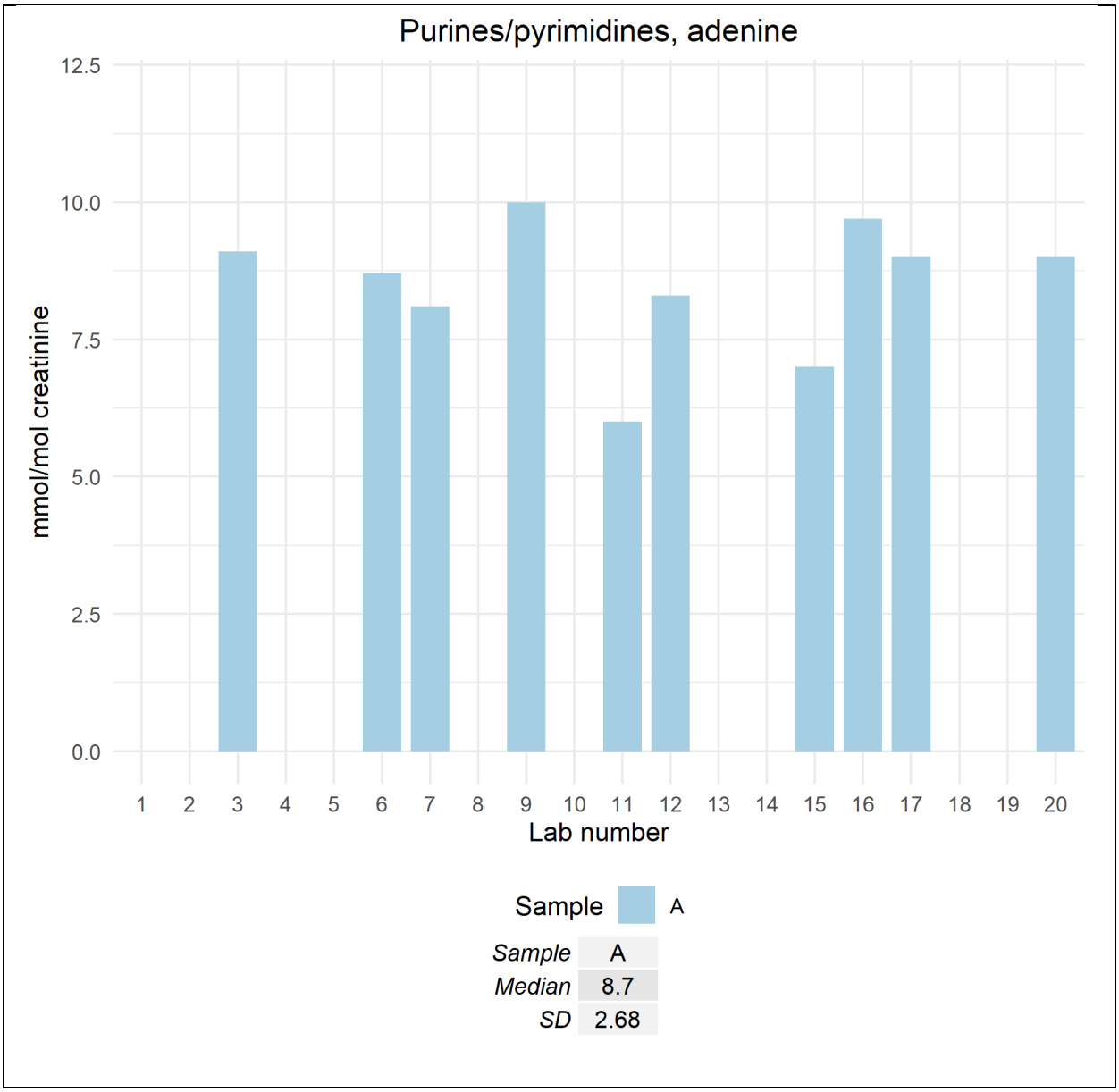
Patient details
A 30 year old female who was admitted to hospital due to kidney and urinary stones. High levels of dihydroxy-adenine were found repeatedly which fell dramatically (almost 10 fold) after starting allopurinol treatment. Over the previous year she had had to stop the treatment due to pregnancy when dihydroxy adenine was again very high. Urine was collected at 33 years off treatment. Included in the DPT-CH scheme in 2017 and is the common sample this year. Full details of this patient and sample can be found on the ERNDIM website. (https://erndim.org/store/docs/CommonDPTsample-Awomanwi-UBUCCAFE991344-24-10-2019.pdf)

Analytical performance
The diagnosis relies on performing purine/pyrimidine analysis which was done by 15 labs. The key abnormality is the finding of increased 2,8, dihydroxy adenine, scored with 2 points (9/20 labs) and increased adenine. Finding only increased adenine was scored with one point (5 labs). Overall analytical proficiency was 58%.

Creatinine (mmol/L):	n 20	median 3.5	range 2.83 – 3.76
pH:	n 11	median 6.5	range 6.0 – 7.0

Purine/Pyrimidines (mmol/mol Creat.)

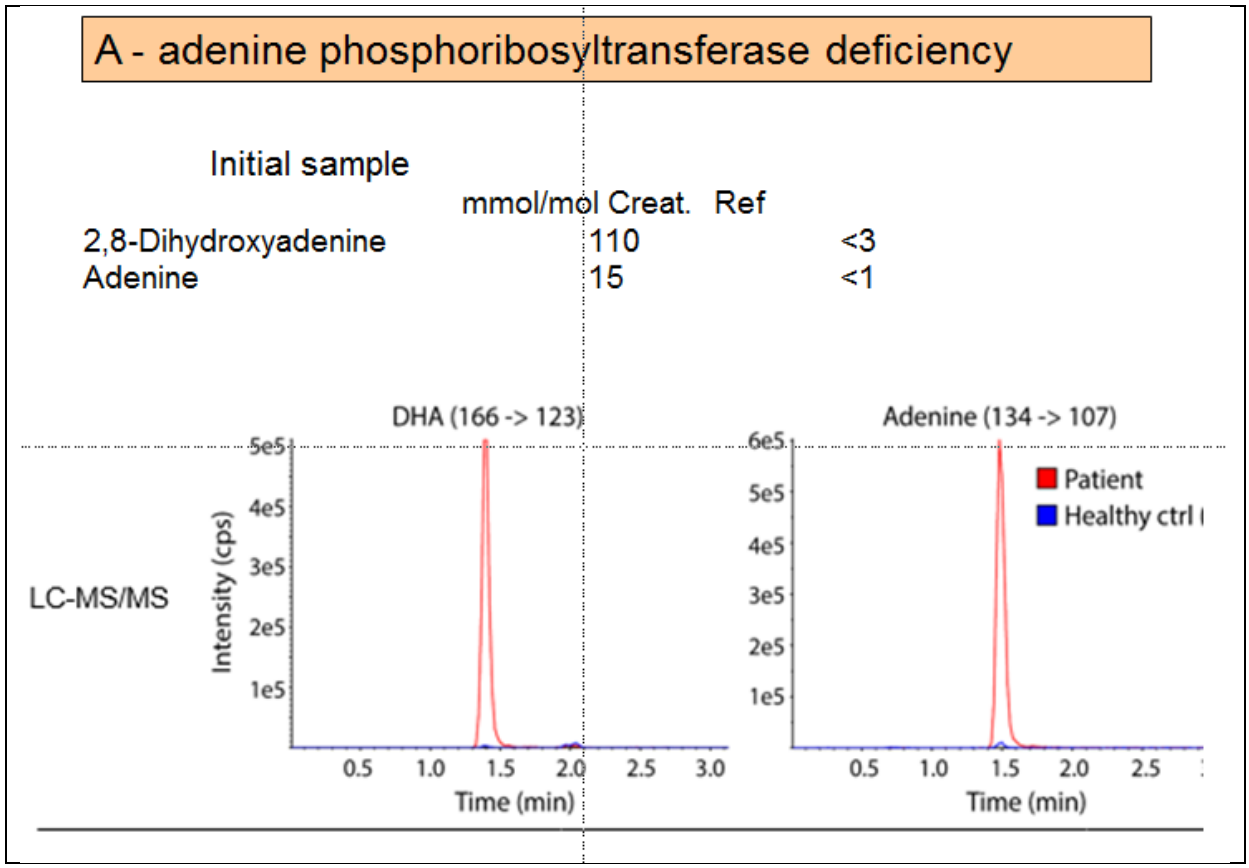
2,8-dihydroxyadenine	n 4	median 23	range 18-76
Adenine	n 11	median 8.7	range 0 – 10



Diagnosis / Interpretative proficiency
The correct diagnosis of adenine phosphoribosyltransferase deficiency (two points) was correctly identified by 13 labs (one lab suggested this diagnosis but without any analytical evidence). Recommendation to perform the correct analysis or to exclude APRT deficiency was scored with one point (6 labs).
Overall interpretative proficiency was 83%.

Recommendations
Appropriate were:
P/P analysis (7 labs); APRT enzyme (6); APRT gene (10); exclude APRTD (2). Others: exclude oxaluria (2); organic acids (2); exclude infection (1); none given (2).

Overall impression
Analytical proficiency of 58% shows the need for purine and pyrimidine analysis in more labs and also improved performance in some labs. Overall proficiency of 70% points was fairly good and much better than with the previous circulation of this sample.



Multiple distributions of similar samples

This sample was distributed in 2017. Performance was as follows:

Analytical proficiency 48%, interpretation 62% and overall 55%.

8.2. Patient B

3-Methylcrotonyl-CoA carboxylase deficiency. OMIM #210200

Patient details provided to participants
Presented with an infection with associated seizures and hypoglycaemia. Urine collected at 2y of age on treatment.

Patient details
The male patient, now ten years old, presented at 19 months with hypoglycaemia (glucose 0.9 mmol/L) and spurious seizures during an infection. Urine organic acids showed high excretion of 3-hydroxyisovaleric acid and 3-methylcrotonyl glycine. 3-methylcrotonyl-CoA carboxylase deficiency was confirmed by enzyme measurement which showed reduced activity of 3-MCC with normal levels of pyruvate carboxylase and propionyl-CoA carboxylase. Urine was collected at 2 years of age while treated with carnitine and protein restriction and initially biotin, with no apparent effect on metabolite levels.

Analytical performance

Creatinine (mmol/L):	n 20	median 3.73	range 3.41 – 4.11
pH:	n 11	median 6.0	range 5.0 – 6.0

Organic acids (mmol/mol Creat.):			
3-hydroxyisovaleric acid	n 11	median 3744	range 419 - 32300
Methylcrotonyl-glycine	n 9	median 3941	range 400 - 7900

Increased 3-hydroxyisovaleric acid and 3-methylcrotonyl glycine are the key findings in this sample, each scored with one point. All labs reported these abnormalities.

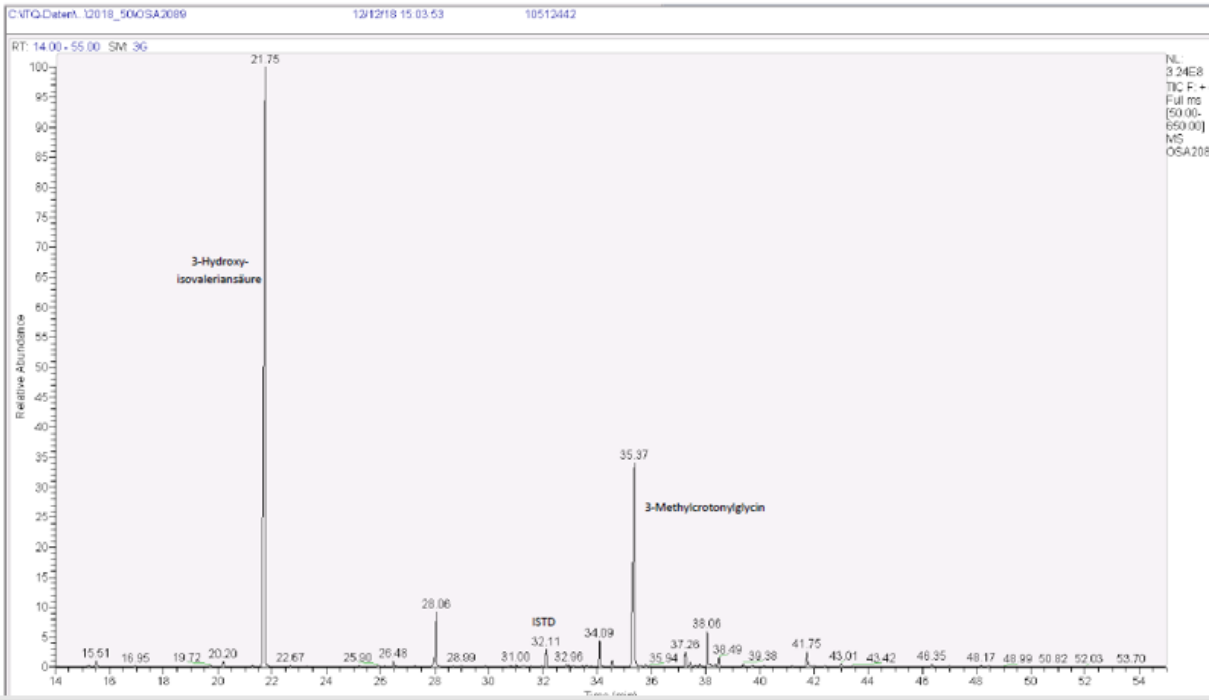
Diagnosis / Interpretative proficiency
The correct diagnosis of 3-methylcrotonyl CoA carboxylase deficiency was reported by 19 labs (2 points) while one lab incorrectly reported holo-carboxylase deficiency (one point). Increases of additional metabolites expected in the latter condition were not present. Overall proficiency 98%.

Recommendations
Appropriate were: Carnitines (14 labs); MCC gene(s) (18); MCC enzyme (7). Others: ammonia (1); biotinidase (3); Organic acids repeat (1).

Overall impression
Very high overall proficiency of 99%.

B- 3-methylcrotonyl CoA carboxylase deficiency

Organic Acids-GCMS



8.3 Patient C

No inherited metabolic disorder in a patient on various medications.

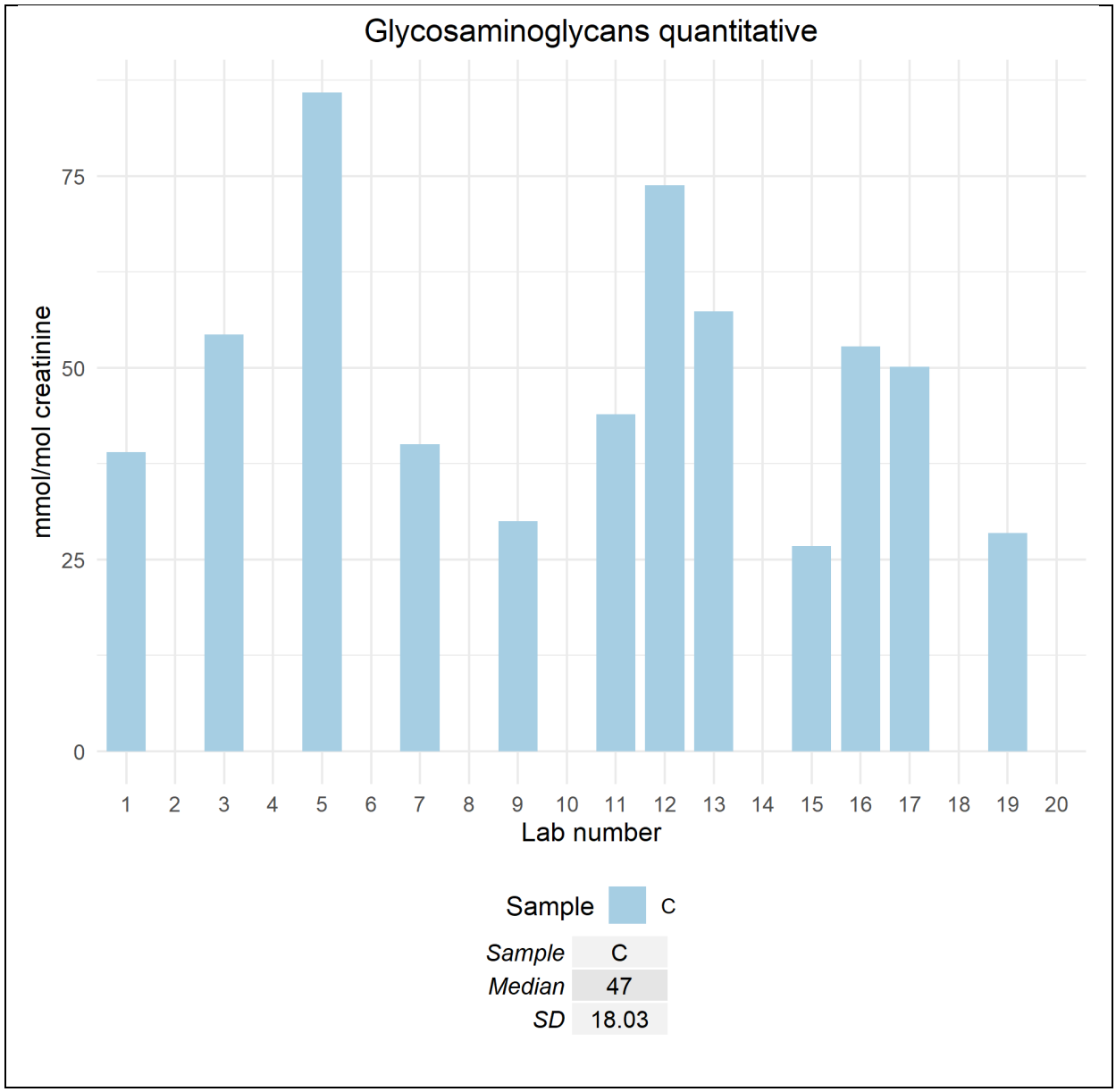
Patient details provided to participants
Urine collected one day after abdominal surgery. Symptomatic treatment

Patient details
The patient had undergone abdominal surgery for removal of a stoma one day before urine collection. Ceftriaxon and metronidazole had been administered. There was no clinical suspicion of any inherited metabolic disorder.

Analytical performance

Creatinine (mmol/L.):	n 19	median 1.2	range 0.75 – 1.39
pH:	n 11	median 6.0	range 5.0 – 6.5

There was clear evidence of interfering substances in the amino acid and organic acid analysis reflecting the medication. Any such reference to this in the analytical findings was scored with two points (11/20 labs). Unexpectedly the level of GAG excretion was somewhat elevated and this was scored with one point (8 labs) when no other points had been accrued.
Overall analytical proficiency was moderate at 78%.



Diagnosis / Interpretative proficiency

The correct diagnosis was “no evidence of a specific inherited metabolic disorder” and this was scored with 2 points. One point was given for appropriate conclusions/recommendations related to increased GAG excretion. No points were given for misleading conclusions of a specific disorder. This resulted in overall interpretative proficiency of 60%.

Recommendations

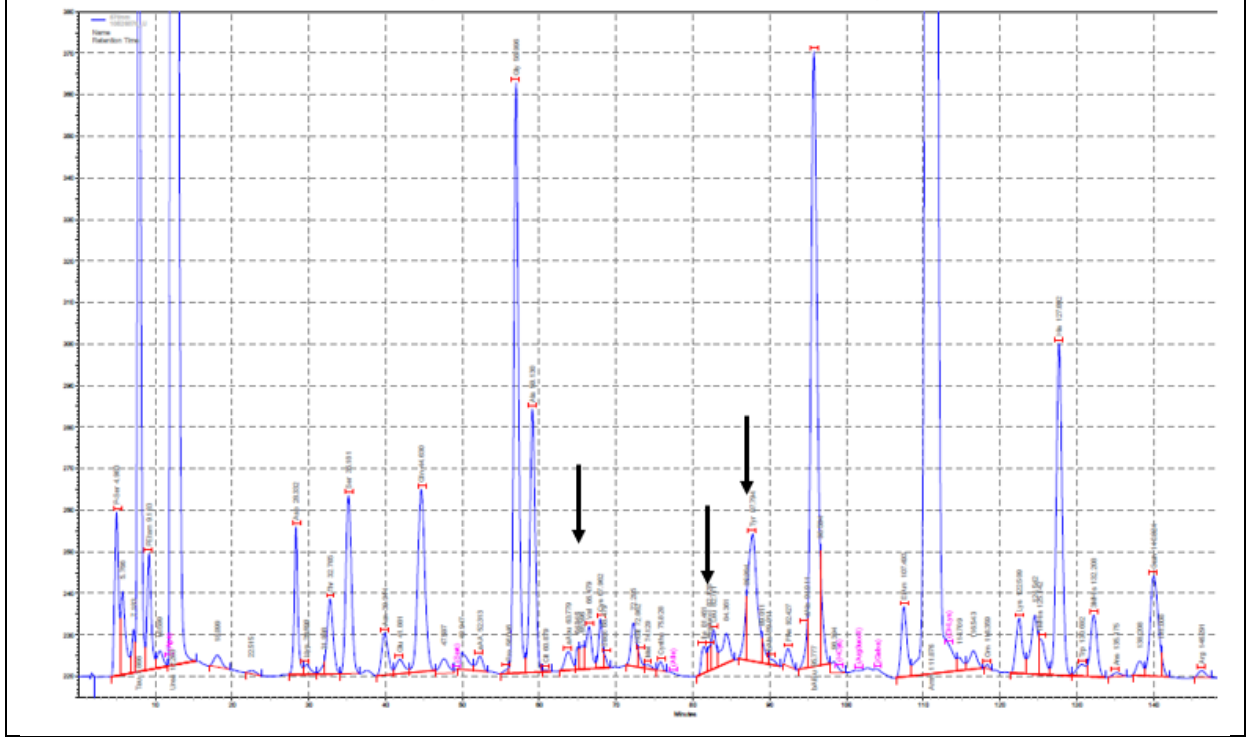
Appropriate: enquire clinical details (6 labs); enquire medications (2); repeat urine for abnormality, GAGs/other (5).

Overall impression

This sample was fairly difficult due to the interference in amino acid and organic acid analysis caused by drug administration. Further there was increased GAG excretion of a non-specific nature probably due to administration of heparin around surgery. This sample reflects the need to avoid over-interpretation of findings.
Overall proficiency was 69%.

C- No inherited metabolic disorder

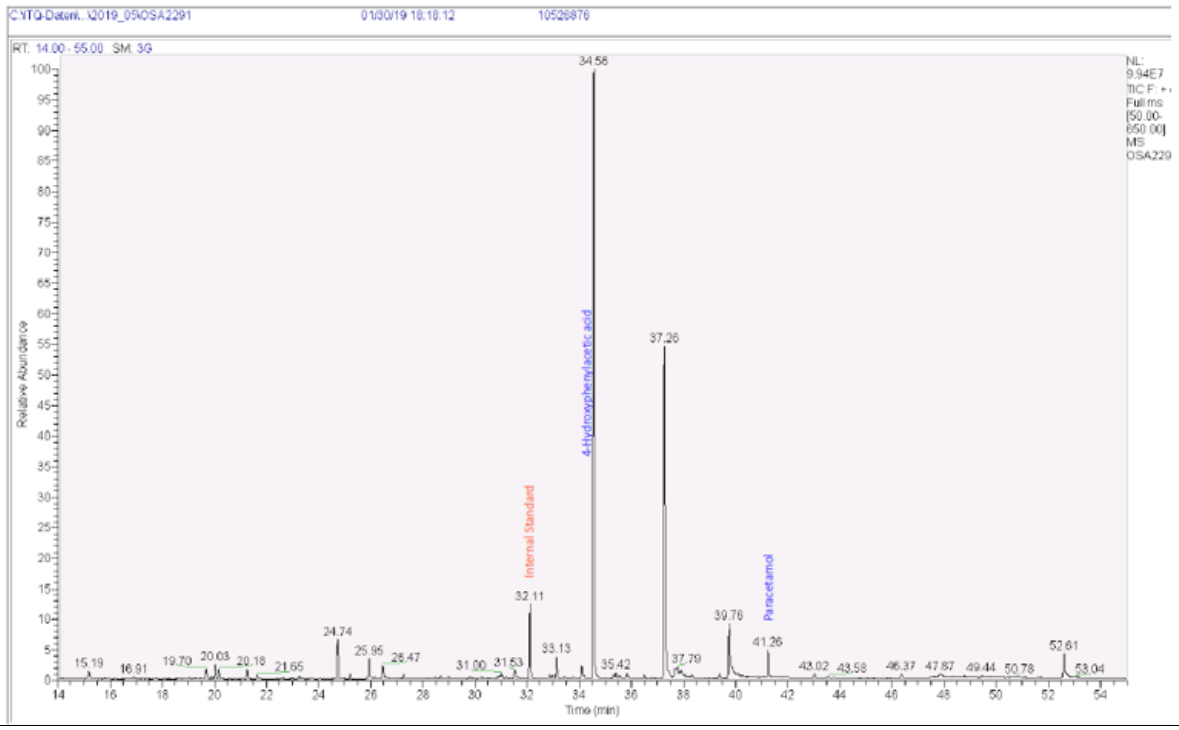
Amino Acids – Ion-Exchange



The arrows indicate peaks due to medication.

C- No inherited metabolic disorder

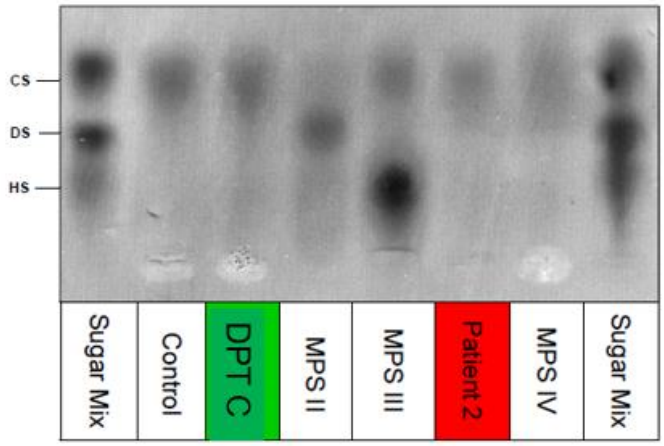
Organic acids – GCMS



C- No inherited metabolic disorder

DPT C – GAG 60.6 mg/mmol Creat

GAG electrophoresis



8.4 Patient D

Thymidine phosphorylase deficiency (mitochondrial neurogastrointestinal encephalopathy syndrome, MNGIE), OMIM 603041.

Patient details provided to participants
The 33 year old male patient presented with abnormal MRI scan, lack of muscle control and an emaciated appearance.

Patient details
The urine was obtained from a 33 year old male patient with leukoencephalopathy, demyelinating neuropathy, muscular hypotonicity and wasted appearance. The diagnosis was confirmed by mutation analysis.

Analytical performance

Creatinine (mmol/L.):		n 20	median 9.87	range 6.86 – 10.52
pH:	n 11	6.0	range 5.0 – 6.5	

The finding of thymidine and/or 2'-deoxyuridine was considered key to the diagnosis, with or without thymine/uracil and was scored with 2 points (16 labs). The finding of only thymine/uracil was considered as only partially correct and was scored with one point (4 labs). Overall performance was high at 88%.

P/P analysis ((mmol/mol Creat.)

Thymidine	n 12	median 12.8	range 6.9 – 17.7
Deoxyuridine	n 9	median 20.0	range 11.2 – 26.8
Thymine	n 11	median 34	range 17.2 – 41.6
Uracil	n 10	median 83.5	range 35.9 -102.7

Organic acids (mmol/mol Creat.)

Uracil	n 7	median 78	range 6 – 619
Thymine	n 3	median 34	range 6 - 62

Diagnosis / Interpretative proficiency
The correct diagnosis was considered to be thymidine phosphorylase deficiency scored with two points (13 labs). Seven labs gave the diagnosis of dihydropyrimidine dehydrogenase deficiency and sinced this was correct interpretation of their incomplete findings, one point was scored. Overall proficiency was fairly satisfactory at 78%

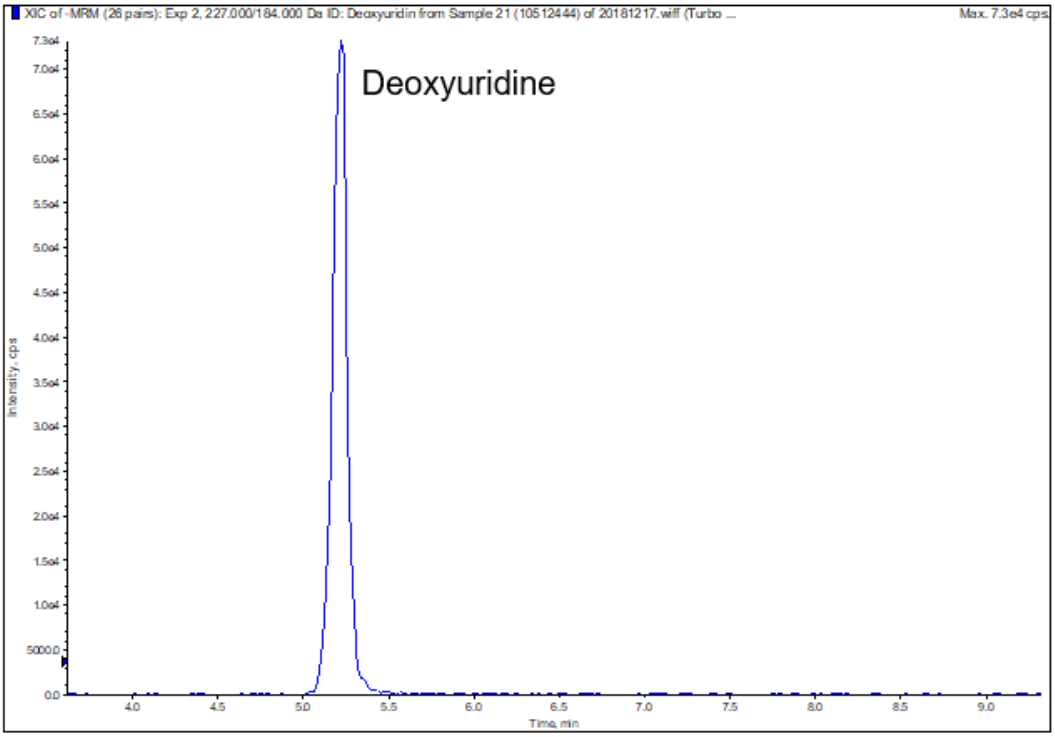
Recommendations
Repeat sample, 7 labs; plasma P/P analysis, 4; correct enzyme assay, 9; incorrect enzyme, 3; genetics correct gene, 13; genetics incorrect gene, 5.

Overall impression
Some labs found key metabolites but did not conclude the correct diagnosis.
Overall performance of 83% was much higher than that of 50% found when the same sample was circulated in 2010.

Multiple distributions of similar samples
The same sample had been circulated in 2010 with performance as follows:
Analytical proficiency 50%, interpretation 50%, overall 50%.

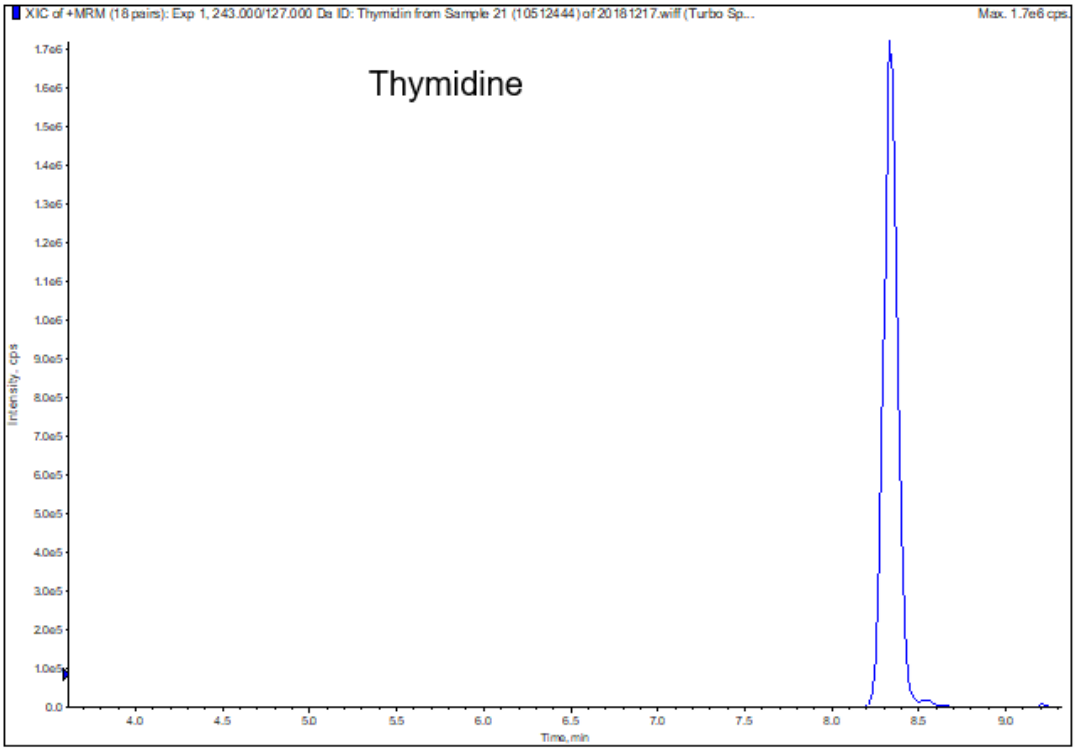
Sample D: thymidine phosphorylase deficiency

LC-MS/MS



Sample D: thymidine phosphorylase deficiency

LC-MS/MS



8.5 Patient E

Propionic acidaemia due to propionyl CoA carboxylase deficiency. OMIM number 606054.

Patient details provided to participants

Presented in the neonatal period with metabolic decompensation. Subsequent recurrent episodic illness in spite of treatment

Patient details

Good postnatal adaptation but persistent feeding difficulties and metabolic acidosis. Biochemical diagnosis was made at 1 week of age, and later confirmed at age 8 months. Propionyl-CoA carboxylase activity was 1% of the wild type level in cultured fibroblasts. Long-term treatment including diet and medication was performed according to international standards. Patient has severe global retardation and required frequent hospitalisations for metabolic crises as well as for intermittent abdominal pains.

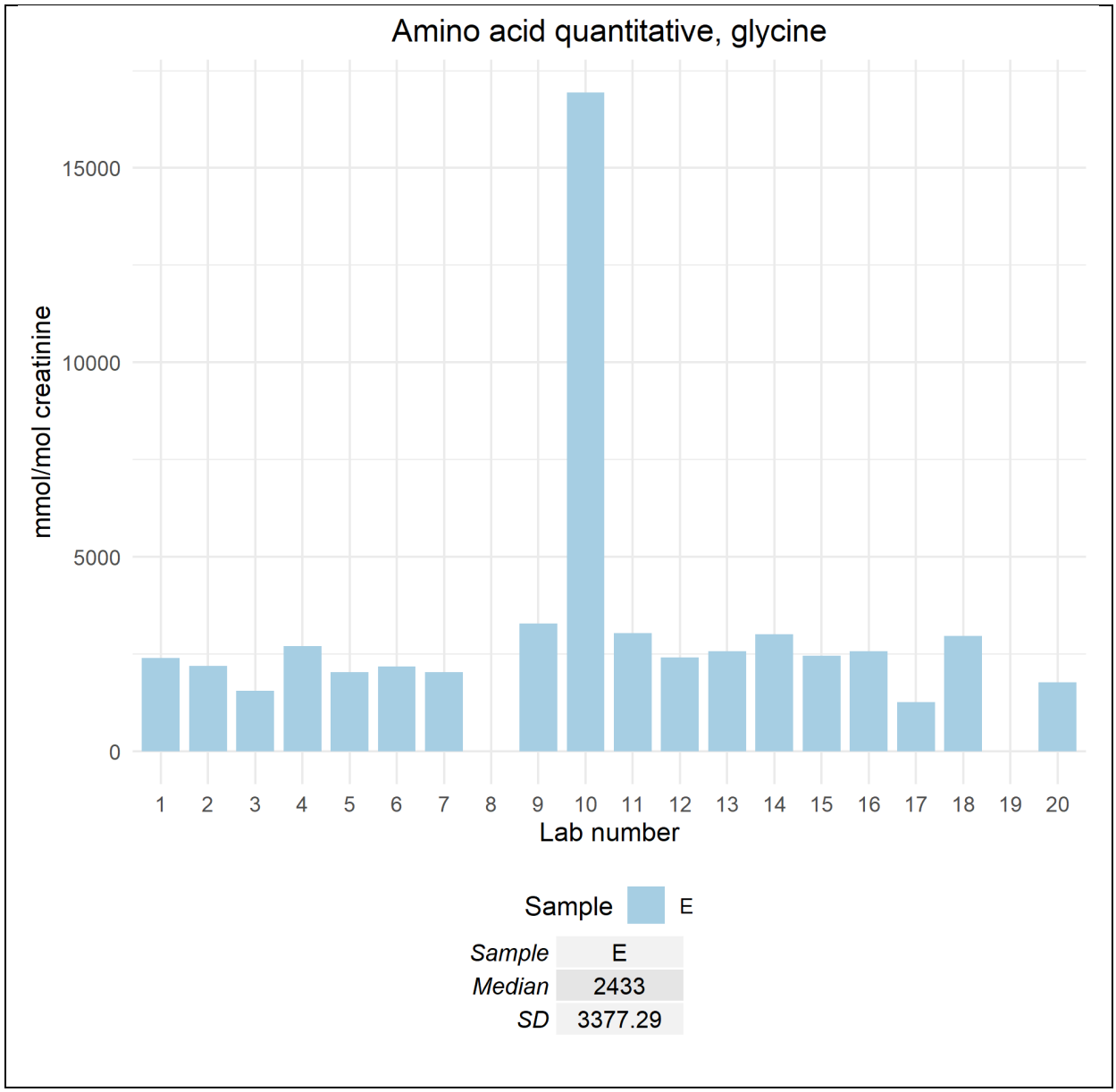
Analytical performance

Creatinine (mmol/L.):	n 19	median 1.2	range 1.0 – 1.33 (outlier 12.3)
pH:	n 11	median 5.0	range 5.0 – 6.0

Organic acid analysis (mmol/mol Creat.)

3-hydroxypropionic acid	n 7	median 419	range 19 - 2930
Methylcitric acid	n 8	median 410	range 35 - 1362
Propionylglycine	n 7	median 580	range 24 -1130

The finding of 3-hydroxypropionic acid and or methylcitric acid was scored with one point (20 labs) and propionylglycine with one point (19 labs). Elevated glycine was reported by 19 labs but this was not scored. Excellent analytical proficiency of 98%.



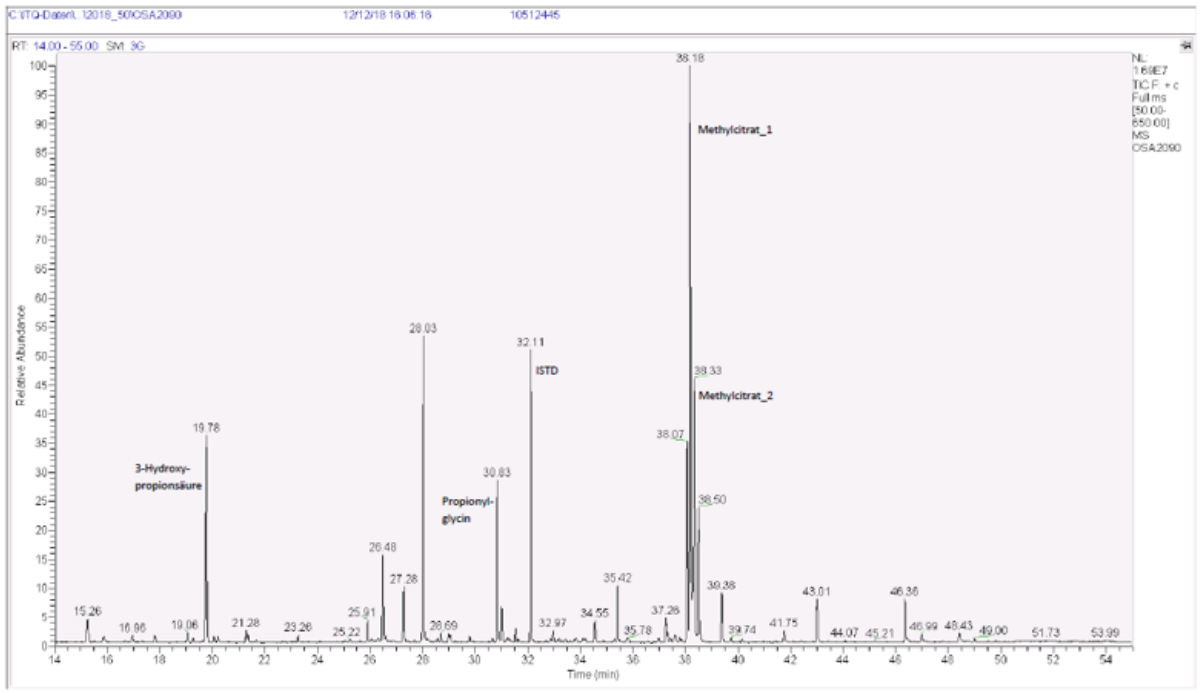
Diagnosis / Interpretative proficiency
The correct diagnosis of propionyl-CoA carboxylase was scored with 2 points (20 labs) giving 100% proficiency for interpretation.

Recommendations
Free carnitine, 3 labs; acyl carnitines, 12; plasma amino acids, 9; PCCA /PCCB gene analysis, 18; propionyl CoA carboxylase assay, 9; ammonia, 2; repeat organic acid analysis, 2.

Overall impression
Excellent overall proficiency of 99%.

Sample E: propionyl-CoA carboxylase deficiency

Organic acids – GCMS



8.6 Patient F

Sanfilippo syndrome, MPS IIIA, heparan sulphate sulphatase deficiency, OMIM 252900.

Patient details provided to participants

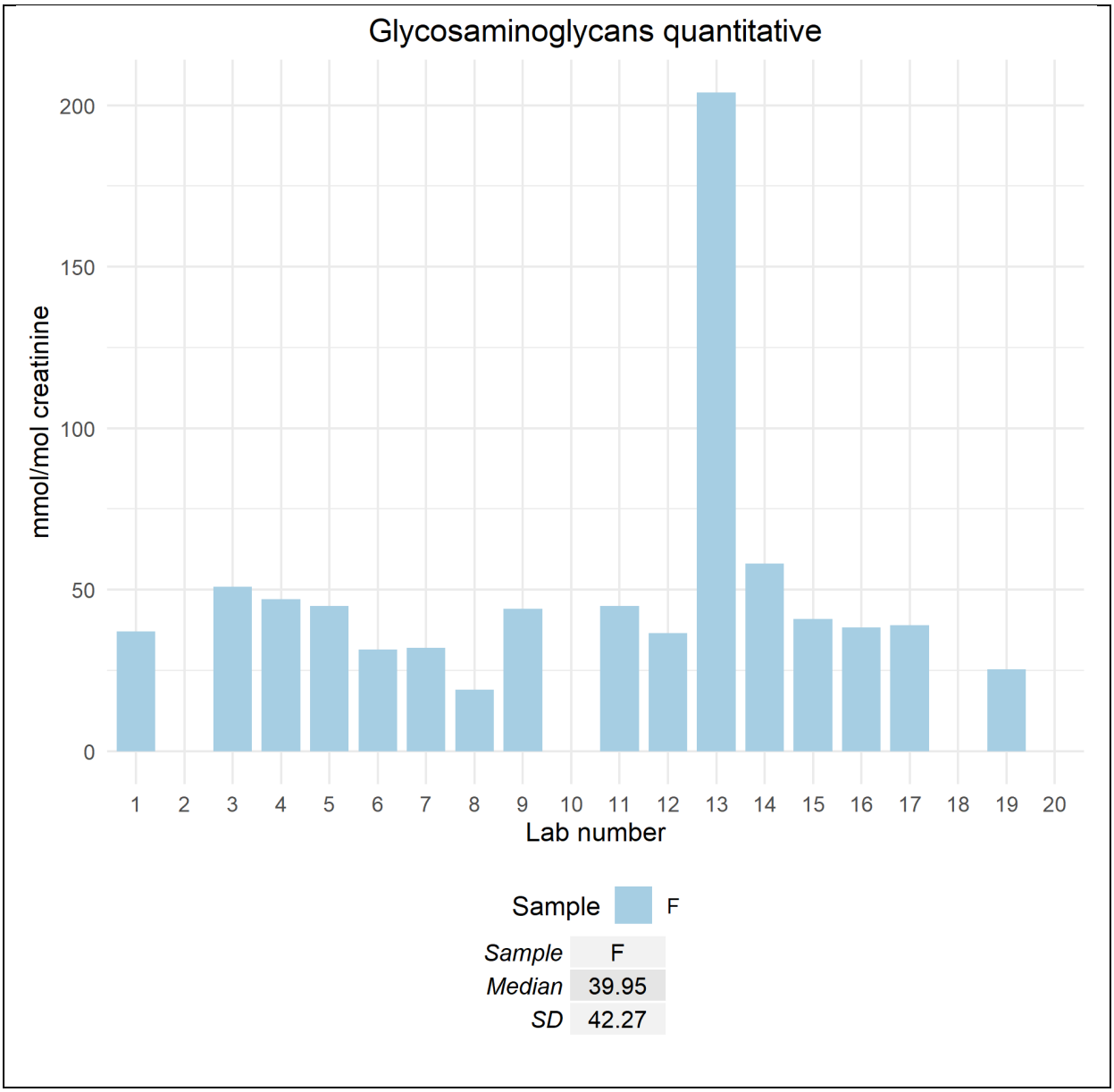
Born normally at term , birth weight 3300g, length 49cm, Apgar 9. Normal early development, stared walking at 11m. At three years investigated due to delayed speech development and failed hearing screening. Clinical evaluation revealed macrocephaly (+4 SD) and mildly coarse facial features.

Patient details

Born normally at term , birth weight 3300g, length 49cm, Apgar 9. Normal early development, started walking at 11m. At three years investigated due to delayed speech development and failed hearing screening. Clinical evaluation revealed macrocephaly (+4 SD) and mildly coarse facial features. Urinary GAGs were increased at 32.7 mg/mmol creat. and electrophoresis showed increased excretion of heparan sulphate. Diagnosis of MPS IIIA was confirmed by enzyme analysis.

Analytical performance

Creatinine: n 20 median 3.63 range 3.26 – 3.91(outlier 1.44)
pH: n 11 median 5.0 range 6.0 – 6.0

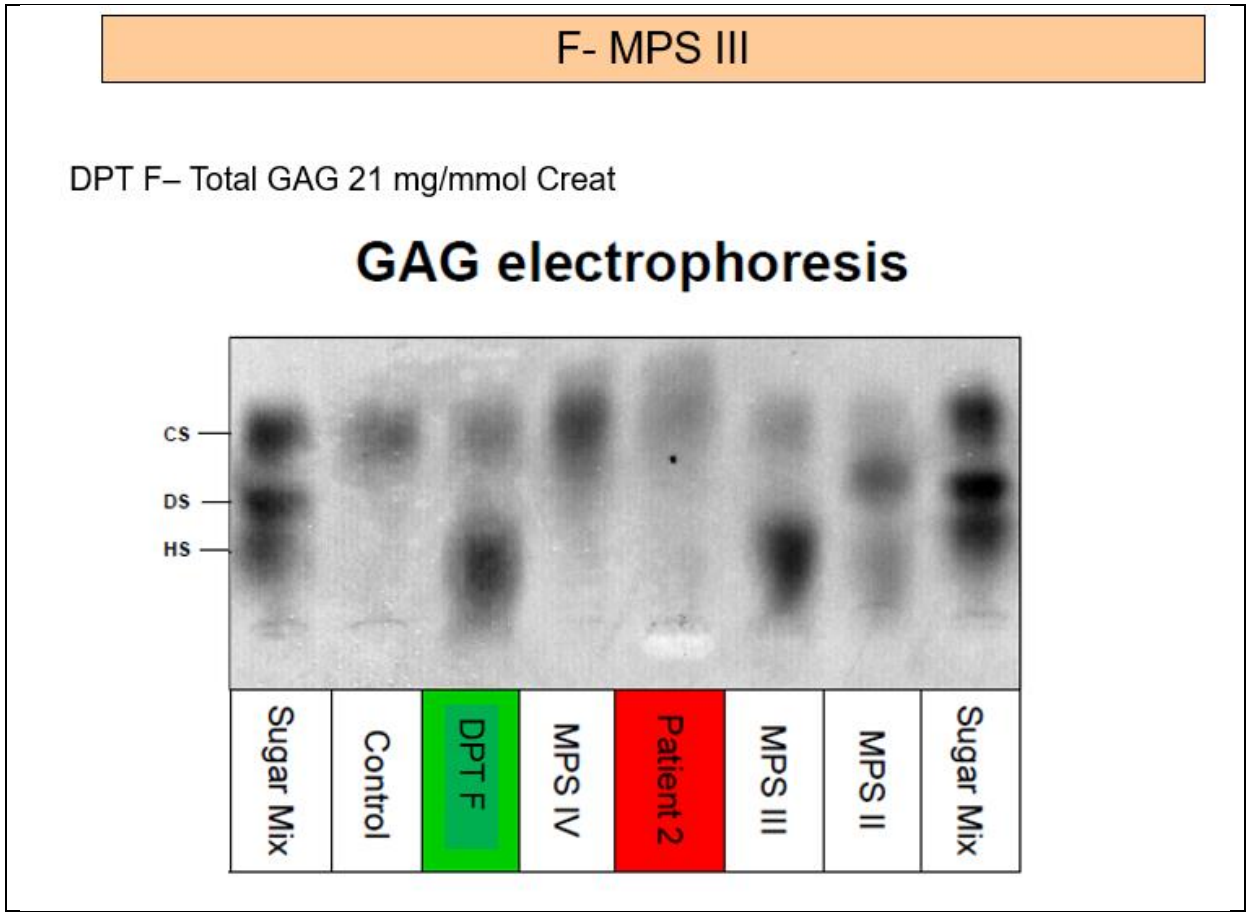


Identification of specific increase of heparan sulphate received two points (12 labs). The finding of just increased total GAGs was scored with one point (7 labs). Overall proficiency was fairly good at 80%.

Diagnosis / Interpretative proficiency
The correct diagnosis of MPS III was scored with 2 points (12 labs). A none specifc MPS disorder (3 labs), MPS III without appropriate analytical findings (2 labs), an incorrect specific MPS disorder (1 lab) or recommendation of MPS analysis if not performed (1 lab) were scored with one point. Overall proficiency was fairly good at 80%.

Recommendations
GAG electrophoresis, 5 labs; plasma/leukocyte/fibroblast enzymes, 5; MPS III enzymes, 14; Specific gene analysis, 14; non-specific gene analysis, 5; hexosaminidases, 1.

Overall impression
Overall proficiency was fairly good at 80%.



9. Scores of participants

All data transfer, the submission of data as well as the request and viewing of reports proceed via the DPT-CSCQ results website. The results of your laboratory are confidential and only accessible to you (with your username and password).The anonymous scores of all laboratories are accessible to all participants and only in your version is your laboratory highlighted in the leftmost column.

Detailed scores – **Round 1**

Lab n°	Patient A APRTD			Patient B MCCD			Patient C No disorder			
	A	**I**	**Total**	**A**	**I**	**Total**	**A**	**I**	**Total**	**Total**
1	2	2	4	2	2	4	1	0	1	9
2	0	1	1	2	2	4	1	1	2	7
3	2	2	4	2	2	4	2	2	4	12
4	0	1	1	2	2	4	2	1	3	8
5	2	2	4	2	2	4	2	0	2	10
6	2	2	4	2	2	4	2	2	4	12
7	2	2	4	2	2	4	2	2	4	12
8	0	1	1	2	2	4	2	2	4	9
9	1	2	3	2	2	4	1	1	2	9
10	1	2	3	2	2	4	2	2	4	11
11	1	2	3	2	1	3	1	1	2	8
12	1	2	3	2	2	4	2	1	3	10
13	0	1	1	2	2	4	2	1	3	8
14	2	2	4	2	2	4	2	2	4	12
15	1	2	3	2	2	4	1	1	2	9
16	2	2	4	2	2	4	1	0	1	9
17	2	2	4	2	2	4	1	1	2	10
18	0	0	0	2	2	4	1	1	2	6
19	0	1	1	2	2	4	1	1	2	7
20	2	2	4	2	2	4	2	2	4	12

Detailed scores – Round 2

Lab n°	Patient D MNGIE			Patient E PCC deficiency			Patient F MPS IIIA			
	A	I	Total	A	I	Total	A	I	Total	Total
1	2	0	2	1	2	3	1	1	2	7
2	2	2	4	2	2	4	2	2	4	12
3	2	2	4	2	2	4	2	1	3	11
4	1	1	2	2	2	4	2	2	4	10
5	2	2	4	2	2	4	2	2	4	12
6	2	2	4	2	2	4	1	1	2	10
7	2	2	4	2	2	4	2	2	4	12
8	1	2	3	2	2	4	2	2	4	11
9	2	0	2	2	2	4	1	1	2	8
10	2	2	4	2	2	4	2	2	4	12
11	1	2	3	2	2	4	1	1	2	9
12	2	2	4	2	2	4	2	2	4	12
13	1	1	2	2	2	4	2	2	4	10
14	2	2	4	2	2	4	2	2	4	12
15	2	2	4	2	2	4	2	2	4	12
16	2	2	4	2	2	4	1	1	2	10
17	2	2	4	2	2	4	1	1	2	10
18	1	1	2	2	2	4	0	1	1	7
19	2	0	2	2	2	4	2	2	4	10
20	2	2	4	2	2	4	2	2	4	12

Total scores

Lab n°	A	B	C	D	E	F	Cumulative score	Cumulative score (%)	Critical error
1	4	4	1	2	3	2	16	67	
2	1	4	2	4	4	4	19	79	
3	4	4	4	4	4	3	23	96	
4	1	4	3	2	4	4	18	75	
5	4	4	2	4	4	4	22	92	
6	4	4	4	4	4	2	22	92	
7	4	4	4	4	4	4	24	100	
8	1	4	4	3	4	4	20	83	
9	3	4	2	2	4	2	17	71	
10	3	4	4	4	4	4	23	96	
11	3	3	2	3	4	2	17	71	
12	3	4	3	4	4	4	22	92	
13	1	4	3	2	4	4	18	75	
14	4	4	4	4	4	4	24	100	
15	3	4	2	4	4	4	21	88	
16	4	4	1	4	4	2	19	79	
17	4	4	2	4	4	2	20	83	
18	0	4	2	2	4	1	13	54	
19	1	4	2	2	4	4	17	71	
20	4	4	4	4	4	4	24	100	

Performance

	Number of labs	% total labs
Satisfactory performers (≥ 60 % of adequate responses)	19	95
Unsatisfactory performers (< 60 % adequate responses and/or critical error)	1	5
Partial and non-submitters	0	0

Overall Proficiency

Sample	Diagnosis	Analytical (%)	Interpretation (%)	Total (%)
DPT-SZ-2019-A	APRTD	58	83	70
DPT-SZ-2019-B	MCCD	100	98	99
DPT-SZ-2019-C	No disorder	78	60	69
DPT-SZ-2019-D	MNGIE	88	78	83
DPT-SZ-2019-E	PCC deficiency	98	100	99
DPT-SZ-2019-F	MPS IIIA	80	80	80

10. Annual meeting of participants

This took place in Rotterdam on September 3rd 2019 from 9.00 to 10.30, prior to the SSIEM Meeting.

Participants totalled twenty two representing 11 different centres (Adelaide, Brisbane, Freiburg, Gothenburg, Heidelberg, Innsbruck, Oslo, Rotterdam, Sherbrooke, Stockholm and Tartu).

We remind you that attending the annual meeting is an important part of the proficiency testing. The goal of the program is to **improve** the competence of the participating laboratories, which includes the critical review of all results with a discussion about improvements.

11. Information from the Executive Board and the Scientific Advisory Board

News on latest developments and progress within our schemes and other activities can be found in the update from our Chairman, George Ruijter, given at the ERNDIM workshop held on September 3rd in Rotterdam. https://www.erndim.org/store/docs/ERNDIMworkshop2019chairs-TAPUKACA617233-24-10-2019.pdf

We wish to bring your special attention to our plea for **Urine samples**: we remind you that every year, each participant must provide to the scheme organizer at least 300 ml of urine from a patient affected with an established inborn error of metabolism or “normal” urine, together with a short clinical report. If possible, please collect 1500 ml of urine: this sample can be sent to all labs participating to one of the DPT schemes. Each urine sample must be collected from a single patient (don’t send urine spiked with pathological compounds). Please don’t send a pool of urines, except if urine has been collected on a short period of time from the same patient. For “normal” urine, the sample must be collected from a symptomatic patient (don’t send urine from your kids!). As soon as possible after collection, the urine sample must be heated at 50 °C for 20 minutes. Make sure that this temperature is achieved in the entire urine sample, not only in the water bath. Then aliquot the sample in 10 ml plastic tubes

(minimum 48 tubes), add stoppers and freeze. Be careful to constantly homogenize the urine while aliquoting the sample. Send the aliquots on dry ice by rapid mail or express transport to:

Brian Fowler / Matthias Baumgartner
Stoffwechselabteilung
Kinderspital Zürich
Steinwiesstrasse 75
8032 Zürich
phone: ++41 61 704 2826
E-mail: brian.fowler@ukbb.ch

Please send us an e-mail on the day you send the samples.

12. Reminders

We remind you that to participate to the DPT-scheme, you must perform at least:

- Amino acids
- Organic acids
- Oligosaccharides
- Mucopolysaccharides

If you are not performing one of these assays, you can send the samples to another lab (cluster lab) but you are responsible for the results.
Please send quantitative data for amino acids and, as much as possible, for organic acids.

13. Tentative schedule in 2020

Sample distribution	11 February 2020
Start of analysis of Survey 2020/1 Website open	March 9
Survey 2020/1 - Results submission	March 30
Survey 2020/1 - Reports	May 10
Start of analysis of Survey 2020/2	June 8
Survey 2020/2 – Results submission	June 29
Survey 2020/2 - Reports	August 3
Annual meeting of participants	Sept 1 Freiburg SSIEM
Annual Report 2020	December

14. ERNDIM certificate of participation

A combined certificate of participation covering all EQA schemes will be provided to all participants who take part in any ERNDIM scheme. For the DPT scheme this certificate will indicate if results were submitted and whether satisfactory performance was achieved in the scheme.

Date of report, 2020-03-17
Name and signature of Scientific Advisor

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