

Irene's Nightmares

ERNDIM Website Quantitative Schemes

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SKML, Queen Beatrix Hospital Winterswijk, the Netherlands

Manchester, 22 November 2017



**SKML Crew
Serving
ERNDIM**



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ERNDIM**

**Irene
responsible
Websites**

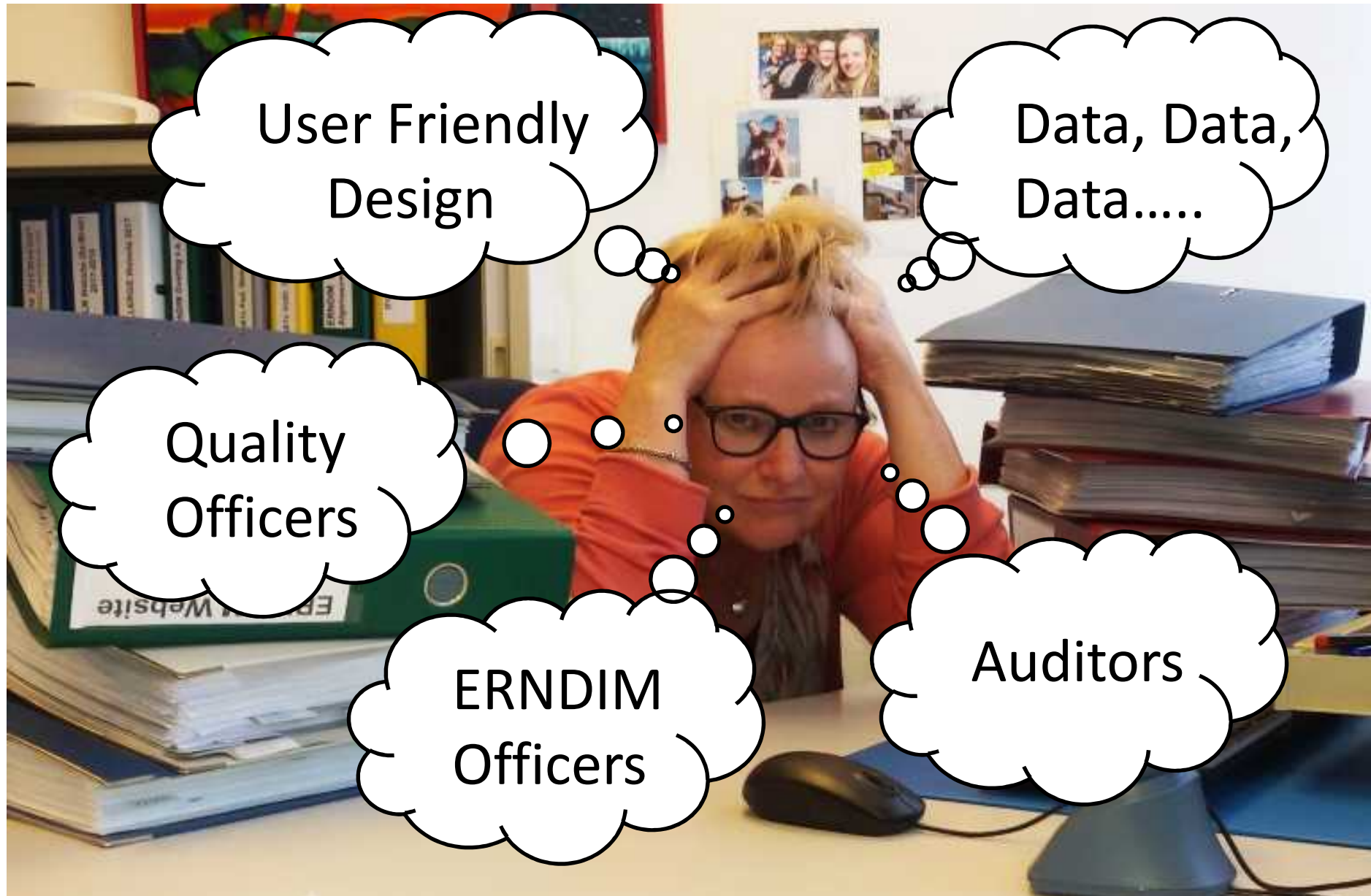


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ERNDIM**

Nightmares?

**Irene
responsible
Websites**

ERNDIM Website



ERNDIM Website



Data Management

Scheme	Analytes	Participants	Samples	Nr. Reports
Amino Acids	25	266	8	53.000
Special Assays U	14	175	8	20.000
Special Assays S	18	242	8	35.000
Lysosomal Enzym	10	78	8	6.000
Organic Acids	19	122	8	19.000
Purines/PyrP.	13	51	8	5.000
Cystine WBC	3	38	8	1.000
Neurotransm	6	26	8	1.000
Pterines	4	22	8	1.000
Acylcarnitines	20	80	8	13.000
Dried Blood Spots	?	?	?	?
Total	132	1100	80	160.000

Archive from Year 2000 = 2.6 million reports

ERNDIM Website



User Friendly Design

Different Users

=

Different Requirements

Technician:	(Condensed) Details
Lab Manager:	Summary
Director:	Condensed Conclusion

Design should serve all

Data

- N Schemes
- N Samples/year
- N Analytes

Amino Acids

Analyte	Sample Nr.				
	1	2	3	8
Alanine					
Asparagine					
Glutamine					
.....					
Valine					

Details

You consider:

- 1 Scheme
- 1 Sample
- 1 Analyte

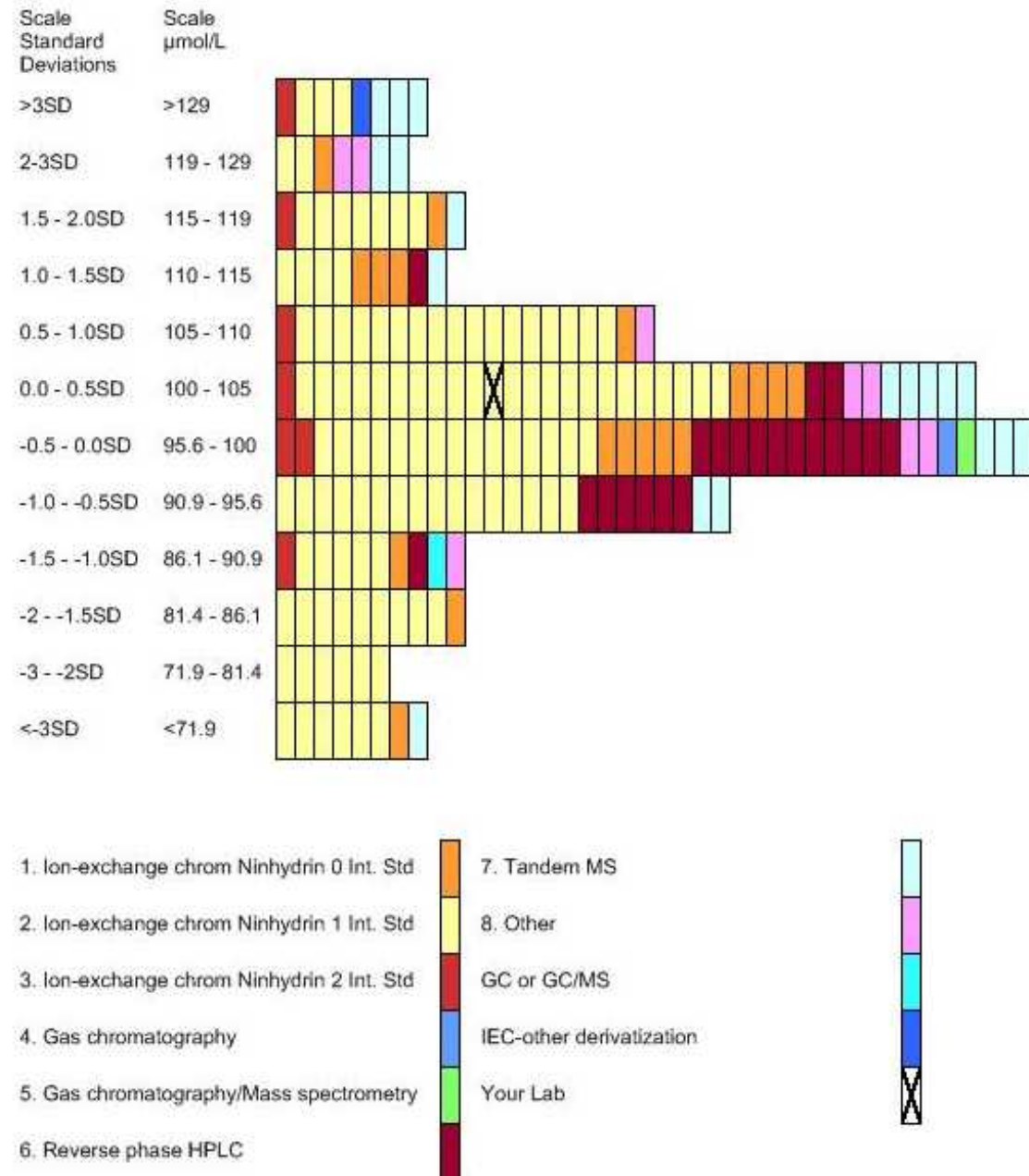
“Analyte in Detail Report”

Amino Acids

Analyte	Sample Nr.				
	1	2	3	8
Alanine					
Asparagine					
Glutamine					
.....					
Valine					

Analyte in Detail Report

Sample:	2016.08
Analyte:	2-Aminobutyric acid
Deadline:	25/11/2016
Unit:	μmol/L
Your Method:	2. Ion-exchange chro
Your Result:	103
Method results	
n:	113
Mean:	101
Median:	101
SD:	8.59
All Labs results	
n:	189
Mean:	100
Median:	100
SD:	9.49



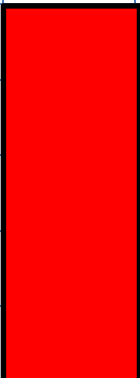
Condensed Details

You consider:

- 1 Scheme
- 1 Sample
- All analytes

“Cycle Review Report”

Amino Acids

Analyte	Sample Nr.				
	1	2	3	8
Alanine					
Asparagine					
Glutamine					
.....					
Valine					

Cycle Review Report

Analyte	Your Lab	Med All Labs	n	ZScore	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
2-Aminobutyric acid	103	100	189	0.3			2		4	1	3 5	6	7	
Alanine	896	906	243	0.2			4				1 6 7	2 3 5		
Alloisoleucine	77.0	78.0	172	0.1	7		3	2 4	1			6	5	
Arginine	615	616	240	0			2 4	7			3 5 6	1		
Asparagine	107	103	222	0.2							6	2 3 4 5	1	7
Aspartic Acid	42.0	47.0	234	0.8		1 2 4 5	6	3	7					
Citrulline	1714	1896	238	1.2		4	1 2		3	6	5 7			
Cystine	8.00	7.00	212	0.3			2 7	5 6				1 3	4	
Glutamic acid	147	128	241	1.2						2 3 4	1 6	7	5	
Glutamine	866	848	232	0.3			1 2	4 7	6		3 5			

Score	<10%	4%
	10% - 90%	96%
	>90%	0%
Cumulative Score	<10%	3%
	10% - 90%	95%

Summary Details

You consider:

- 1 Scheme
- All Sample
- All analyte

“Annual Report”

Amino Acids

Analyte	Sample Nr.				
	1	2	3	8
Alanine					
Asparagine					
Glutamine					
.....					
Valine					

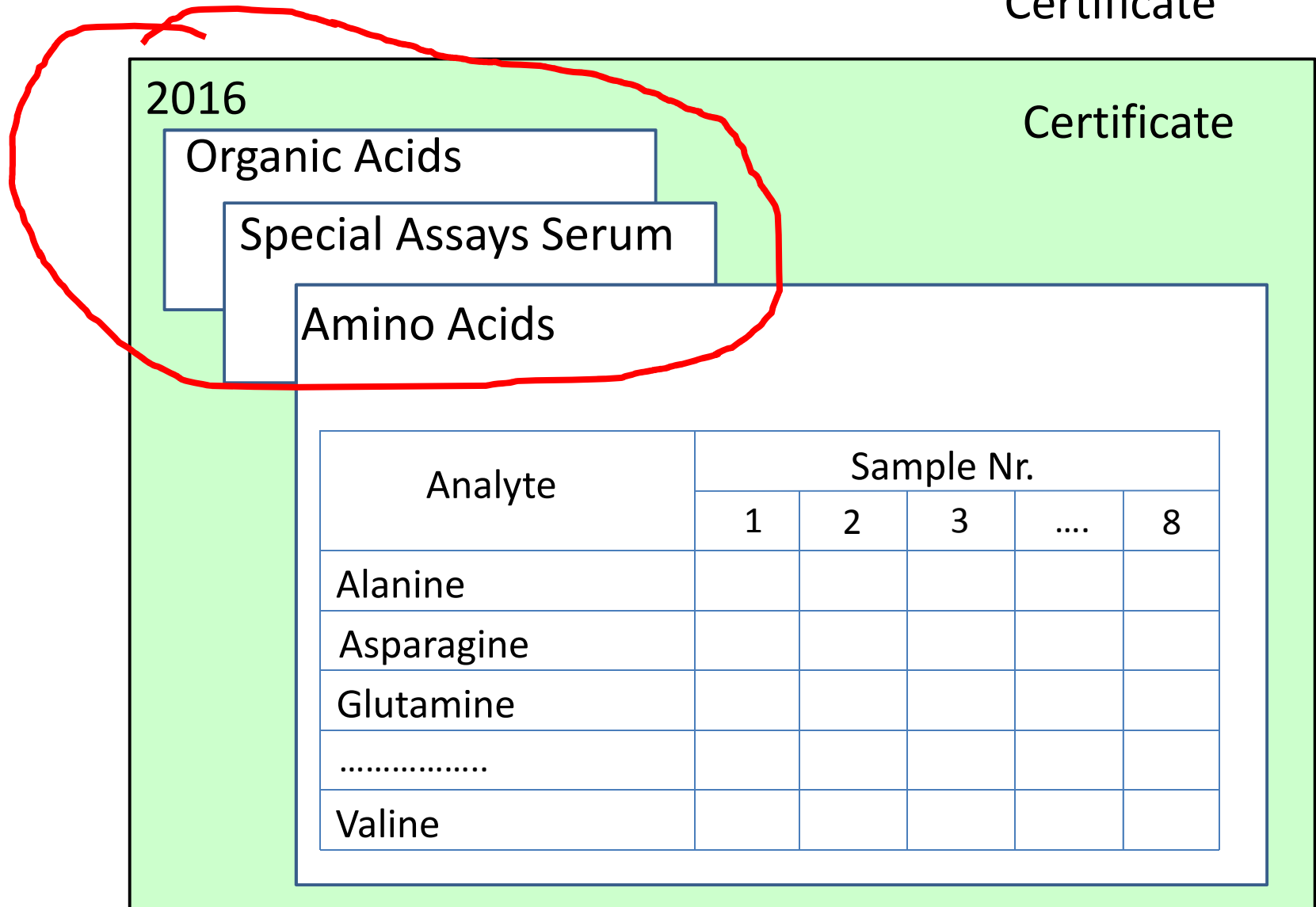
Annual Report

Analyte	Accuracy (mean)		Precision (CV% duplicates)		Linearity (r)		Recovery (%added analyte)		Data all labs	
	Your Lab	All labs	Your Lab	All labs	Your Lab	All labs	Your Lab	All labs	n	Interlab cv
2-Aminobutyric acid	47.6	45.8	4.6%	7.1%	0.997	0.997	100%	101%	215	13.7%
Alanine	355	357	3.6%	5.2%	0.999	0.998	91%	95%	270	9.04%
Alloisoleucine	72.4	72.5	6.5%	7.0%	0.998	0.996	98%	95%	192	11.7%
Arginine	246	249	4.6%	4.4%	0.999	0.999	93%	96%	267	8.65%
Asparagine	102	89.0	12.3%	10.2%	0.991	0.991	105%	97%	249	19.8%
Aspartic Acid	43.0	49.3	5.1%	9.0%	0.996	0.993	58%	67%	260	19.3%
Citrulline	666	719	3.3%	6.2%	0.998	0.998	84%	95%	264	13.4%
Cystine	38.4	38.3	8.1%	9.0%	0.994	0.990	55%	59%	240	13.7%
Glutamic acid	129	120	6.8%	10.2%	0.996	0.987	116%	111%	269	15.3%
Glutamine	603	614	4.6%	7.1%	0.996	0.994	91%	95%	260	10.8%
Glycine	348	350	3.4%	4.9%	0.999	0.998	95%	97%	269	8.81%
Histidine	179	178	11.9%	6.6%	0.995	0.998	98%	91%	264	11.2%
Homocitrulline	62.5	71.2	18.4%	6.8%	0.969	0.994	77%	87%	117	15.5%
Hydroxyproline	51.0	47.6	13.8%	10.9%	0.985	0.986	123%	94%	230	13.6%
Isoleucine	143	141	6.9%	5.6%	0.999	0.999	97%	94%	269	11.7%

Overview

You consider: All Schemes, all samples, all analytes

“Certificate”



ERNDIM

QUALITY ASSURANCE IN LABORATORY TESTING FOR IEM

Certificate of Participation and Performance for 2015

This certificate is to confirm that:



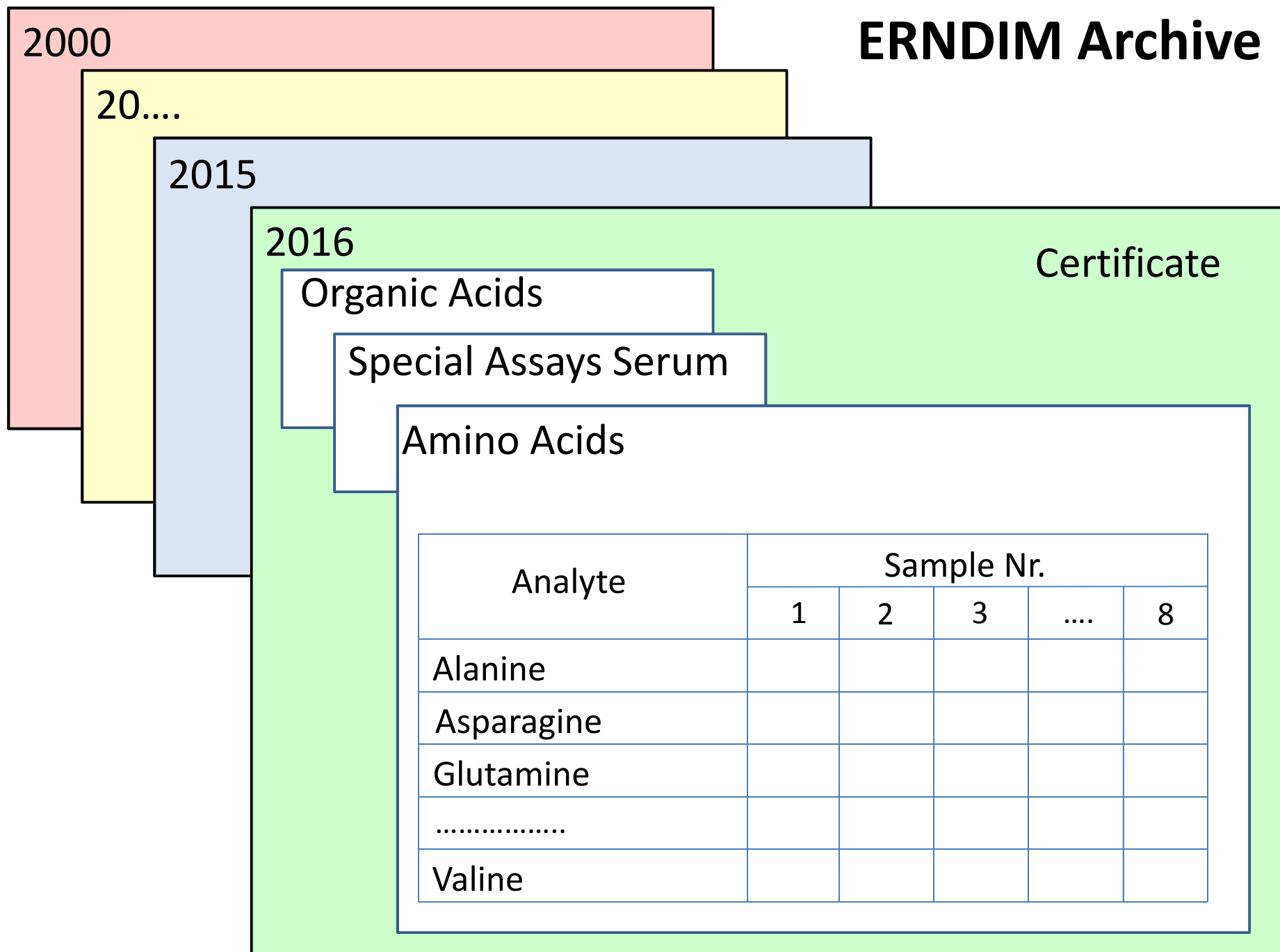
participated in the following External Quality Assurance schemes organised by ERNDIM in 2015 and has achieved performance in the individual schemes as shown.

It is essential that the laboratory's own detailed annual reports for each scheme be referred to alongside this Certificate. For the Quantitative schemes these are available from www.erndimqa.nl and for the Qualitative schemes these are available from cscq.hcuge.ch/cscq/ERNDIM/ or by contacting ERNDIM at admin@erndim.org.

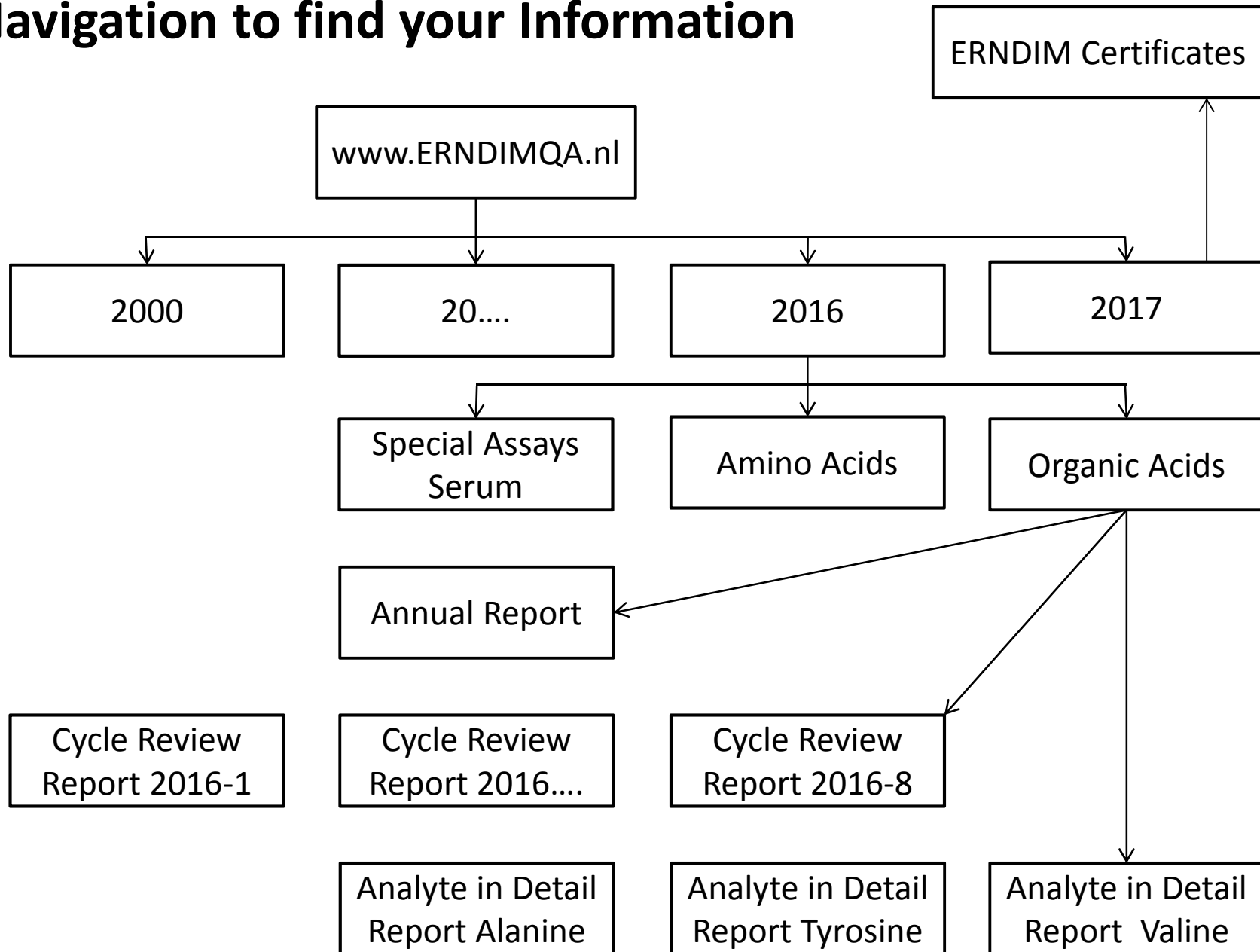
Quantitative Schemes

	Subscribed	Number of Analytes		
		Included in the scheme	For which results submitted by lab	Satisfactory Performance
Amino Acids (serum) (Api 3200)	Yes	28	26	13
Cystine in White Blood Cells (Api 3200 & Pentra)	Yes	3	3	2
Lysosomal Enzymes (fibroblasts) (CBE)	Yes	10	10	10
Purines and Pyrimidines (urine) ()	No	-	-	-
Quantitative Organic acids (urine) (Agilent GC2)	Yes	23	18	16
Special Assays Serum (Routine)	Yes	24	23	16
Special Assays Urine (Routine)	Yes	16	13	12

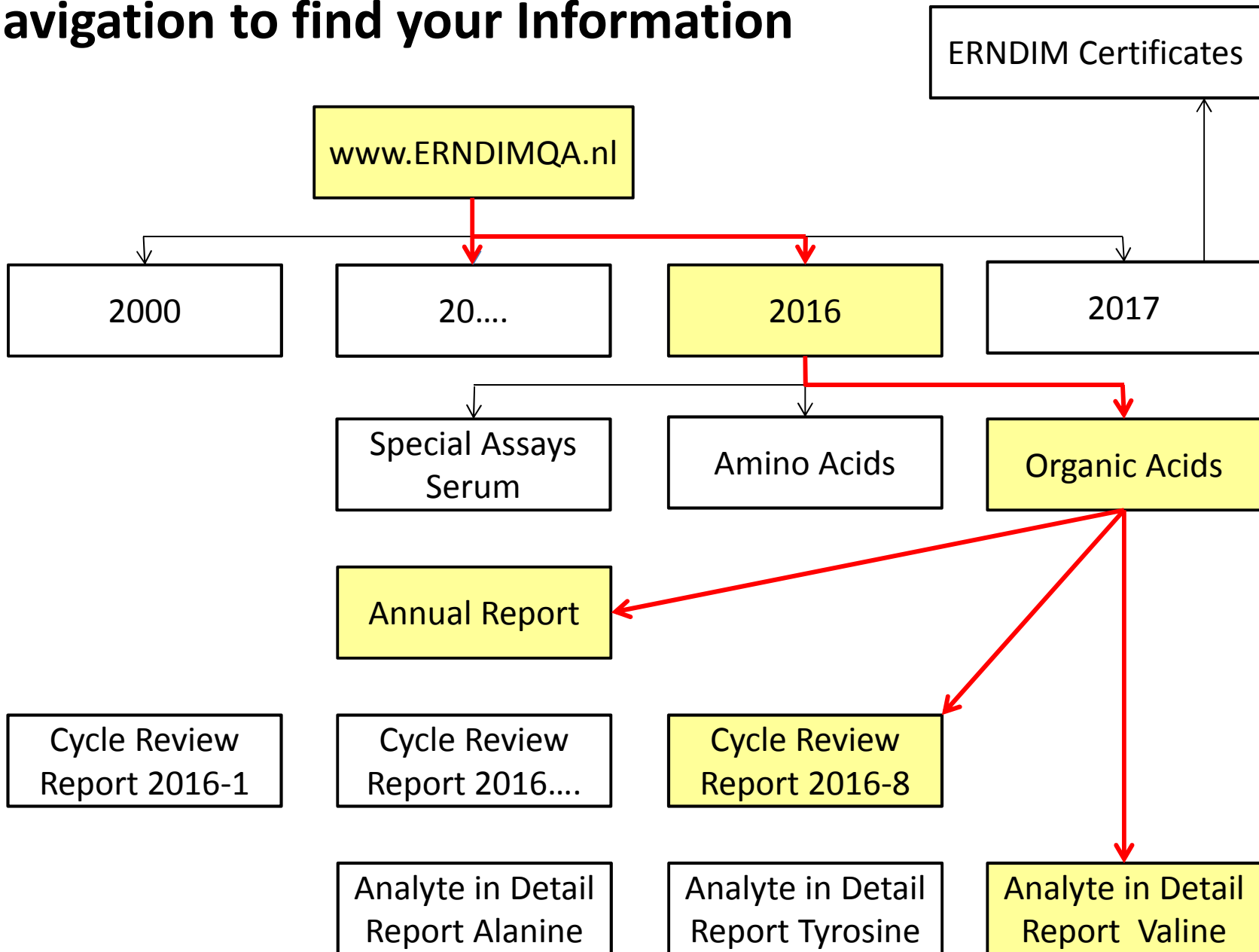
ERNDIM Archive



Navigation to find your Information



Navigation to find your Information



Aggregation level and Information Layers Website “Information Pyramid”

Aggregation Level	Nr Years	Nr Schemes	Nr Samples	Nr Analytes
Archive	All	All	All	All
Certificate	1	All	All	All
Annual Report	1	1	All	All
Cycle Review Report	1	1	1	All
Analyte in Detail Report	1	1	1	1

ERNDIM Website



“I do not want digital reports
I want them printed”

Quality
Officers



“I do not want digital reports
I want them printed”

Quality
Officers

PDF this analyte

PDF all Analytes

Sample:

2016.08

Analyte:

2-Aminobutyric acid

“In case I have poor performance
I want to know why”

Quality
Officers



Excellent Performance: only green flags

Analyte	Accuracy (mean)		Precision (CV% duplicates)		Linearity (r)		Recovery (%added analyte)		Data all labs	
	Your Lab	All labs	Your Lab	All labs	Your Lab	All labs	Your Lab	All labs	n	Interlab cv
2-Aminobutyric acid	42.0	45.8	9.9%	7.1%	0.995	0.997	87%	101%	215	13.7%
Alanine	361	357	9.5%	5.2%	0.997	0.998	94%	95%	270	9.04%
Alloisoleucine	73.8	72.5	5.9%	7.0%	0.998	0.996	96%	95%	192	11.7%
Arginine	258	249	10.5%	4.4%	0.997	0.999	96%	96%	267	8.65%
Asparagine	77.9	89.0	14.5%	10.2%	0.986	0.991	86%	97%	249	19.8%
Aspartic Acid	53.1	49.3	16.4%	9.0%	0.985	0.993	71%	67%	260	19.3%
Citrulline	808	719	7.9%	6.2%	0.998	0.998	104%	95%	264	13.4%
Cysteine	37.5	38.3	13.8%	9.0%	0.986	0.990	61%	59%	240	13.7%
Glutamic acid	119	120	9.7%	10.2%	0.990	0.987	118%	111%	269	15.3%
Glutamine	583	614	19.8%	7.1%	0.964	0.994	92%	95%	260	10.8%
Glycine	352	350	13.3%	4.9%	0.991	0.998	98%	97%	269	8.81%
Histidine	182	178	7.9%	6.6%	0.998	0.998	94%	91%	264	11.2%
Homocitrulline	85.8	71.2	10.0%	6.8%	0.987	0.994	106%	87%	117	15.5%
Hydroxyproline	41.8	47.6	35.1%	10.9%	0.948	0.986	112%	94%	230	13.6%
Isoleucine	141	141	20.2%	5.6%	0.992	0.999	94%	94%	269	11.7%
Leucine	449	432	17.4%	5.5%	0.990	0.999	99%	93%	273	10.3%
Lysine	280	261	10.1%	5.3%	0.998	0.998	102%	90%	267	8.18%
Ornithine	284	266	9.2%	4.9%	0.999	0.999	105%	96%	270	10.4%
Phenylalanine	389	354	13.2%	4.9%	0.998	0.999	105%	92%	274	9.48%
Proline	346	346	9.7%	6.7%	0.995	0.996	96%	97%	255	9.54%
Saccharopine		99.8		5.6%		0.998		97%	101	11.0%
Serine	146	146	9.5%	5.5%	0.998	0.997	96%	97%	269	9.14%
Taurine	176	173	12.0%	5.5%	0.995	0.999	98%	96%	253	9.15%
Threonine	188	187	10.8%	4.5%	0.992	0.998	97%	97%	266	7.39%
Tyrosine	262	247	13.0%	5.1%	0.995	0.999	97%	92%	274	9.75%
Valine	313	304	13.9%	5.0%	0.993	0.999	99%	96%	274	8.61%

Good Performance: few red flags

Analyte	Accuracy (mean)		Precision (CV% duplicates)		Linearity (r)		Recovery (%added analyte)		Data all labs	
	Your Lab	All labs	Your Lab	All labs	Your Lab	All labs	Your Lab	All labs	n	Interlab cv
2-Aminobutyric acid	43.8	45.8	4.3%	7.1%	0.995	0.997	104%	101%	215	13.7%
Alanine	363	357	6.3%	5.2%	0.998	0.998	101%	95%	270	9.04%
Alloisoleucine	61.6	72.5	5.2%	7.0%	0.996	0.996	84%	95%	192	11.7%
Arginine	252	249	2.5%	4.4%	0.999	0.999	99%	96%	267	8.65%
Asparagine	75.1	89.0	7.7%	10.2%	0.990	0.991	81%	97%	249	19.8%
Aspartic Acid	54.8	49.3	3.0%	9.0%	0.993	0.993	70%	67%	260	19.3%
Citrulline	740	719	10.1%	6.2%	0.997	0.998	102%	95%	264	13.4%
Cysteine	35.1	38.3	9.7%	9.0%	0.993	0.990	59%	59%	240	13.7%
Glutamic acid	127	120	4.0%	10.2%	0.997	0.987	112%	111%	269	15.3%
Glutamine	628	614	7.2%	7.1%	0.990	0.994	96%	95%	260	10.8%
Glycine	346	350	5.4%	4.9%	0.999	0.998	96%	97%	269	8.81%
Histidine	180	178	8.0%	6.6%	0.998	0.998	93%	91%	264	11.2%
Homocitrulline	102	71.2	5.4%	6.8%	0.990	0.994	130%	87%	117	15.5%
Hydroxyproline	45.9	47.6	10.1%	10.9%	0.992	0.986	91%	94%	230	13.6%
Isoleucine	140	141	7.1%	5.6%	0.999	0.999	93%	94%	269	11.7%
Leucine	435	432	6.6%	5.5%	0.998	0.999	93%	93%	273	10.3%
Lysine	259	261	3.1%	5.3%	0.999	0.998	89%	90%	267	8.18%
Ornithine	262	266	2.8%	4.9%	1.000	0.999	94%	96%	270	10.4%
Phenylalanine	359	354	4.3%	4.9%	1.000	0.999	93%	92%	274	9.48%
Proline	355	346	6.2%	6.7%	0.996	0.996	102%	97%	255	9.54%
Saccharopine	102	99.8	3.0%	5.6%	0.999	0.998	105%	97%	101	11.0%
Serine	148	146	2.6%	5.5%	0.995	0.997	101%	97%	269	9.14%
Taurine	158	173	16.4%	5.5%	0.990	0.999	95%	96%	253	9.15%
Threonine	183	187	6.4%	4.5%	0.997	0.998	95%	97%	266	7.39%
Tyrosine	246	247	6.8%	5.1%	0.999	0.999	92%	92%	274	9.75%
Valine	300	304	6.7%	5.0%	0.999	0.999	95%	96%	274	8.61%

Poor Performance: Many Flags in different colours

Analyte	Accuracy (mean)		Precision (CV% duplicates)		Linearity (r)		Recovery (%added analyte)		Data all labs	
	Your Lab	All labs	Your Lab	All labs	Your Lab	All labs	Your Lab	All labs	n	Interlab cv
<u>2-Aminobutyric acid</u>	53.4	45.8	13.0%	7.1%	0.983	0.997	124%	101%	215	13.7%
<u>Alanine</u>	377	357	21.7%	5.2%	0.984	0.998	103%	95%	270	9.04%
<u>Alloisoleucine</u>	MP	72.5	18.6%	7.0%	0.959	0.996	76%	95%	192	11.7%
<u>Arginine</u>	230	249	5.7%	4.4%	0.997	0.999	86%	96%	267	8.65%
<u>Asparagine</u>	82.5	89.0	22.6%	10.2%	0.965	0.991	89%	97%	249	19.8%
<u>Aspartic Acid</u>	51.7	49.3	29.7%	9.0%	0.980	0.993	95%	67%	260	19.3%
<u>Citrulline</u>	742	719	15.0%	6.2%	0.994	0.998	97%	95%	264	13.4%
<u>Cystine</u>	48.5	38.3	19.1%	9.0%	0.970	0.990	88%	59%	240	13.7%
<u>Glutamic acid</u>	125	120	11.0%	10.2%	0.987	0.987	115%	111%	269	15.3%
<u>Glutamine</u>	ORFR	614	ORFR	7.1%	ORFR	0.994	ORFR	95%	260	10.8%
<u>Glycine</u>	MP	350	9.2%	4.9%	0.966	0.998	87%	97%	269	8.81%
<u>Histidine</u>	221	178	32.9%	6.6%	0.995	0.998	143%	91%	264	11.2%
Homocitrulline		71.2		6.8%		0.994		87%	117	15.5%
<u>Hydroxyproline</u>	46.9	47.6	10.0%	10.9%	0.977	0.986	101%	94%	230	13.6%
<u>Isoleucine</u>	140	141	8.7%	5.6%	0.999	0.999	93%	94%	269	11.7%
<u>Leucine</u>	443	432	4.8%	5.5%	0.999	0.999	97%	93%	273	10.3%
<u>Lysine</u>	OR	261	OR	5.3%	OR	0.998	OR	90%	267	8.18%

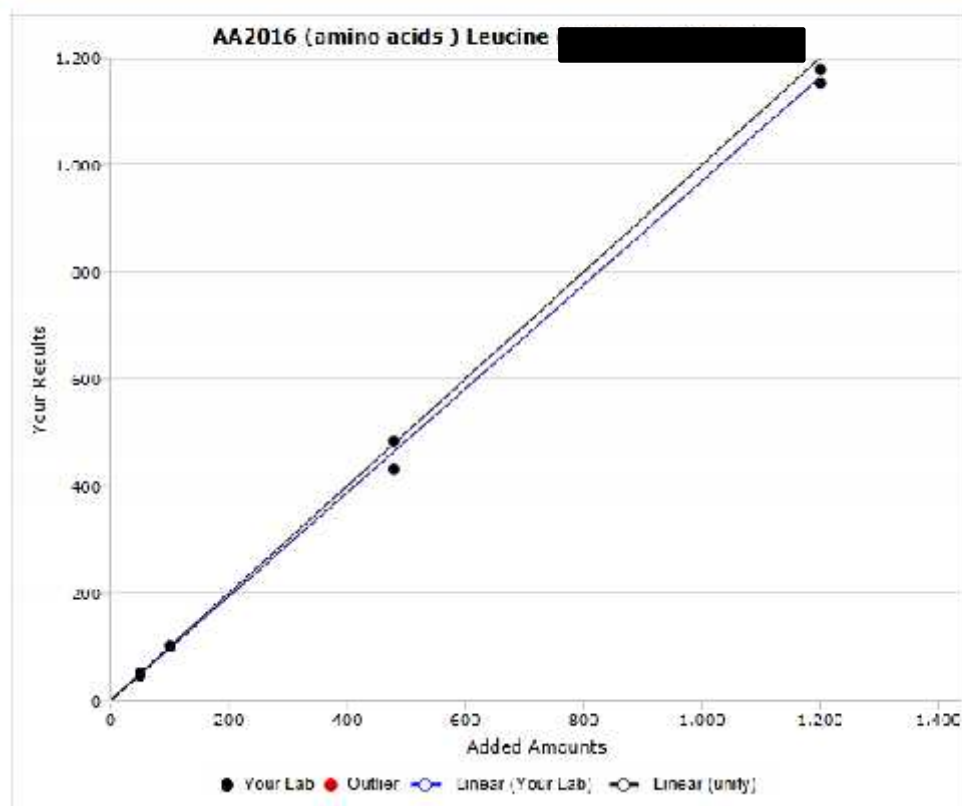
Colour Flag = indication reason Poor Performance

Analyte	Accuracy (mean)		Precision (CV% duplicates)		Linearity (r)		Recovery (% added analyte)		Data all labs	
	Your Lab	All labs	Your Lab	All labs	Your Lab	All Labs	Your Lab	All labs	n	Interlab cv
2-Aminobutyric acid	53.4	45.8	13.0%	7.1%	0.983	0.997	124%	101%	215	13.7%
Alanine	377	357	21.7%	5.2%	0.984	0.998	103%	95%	270	9.04%
Alloisoleucine	MP	72.5	18.6%	7.0%	0.959	0.996	76%	95%	192	11.7%
Arginine	230	249	5.7%	4.4%	0.997	0.999	86%	96%	267	8.65%
Asparagine	82.5	89.0	22.6%	10.2%	0.965	0.991	89%	97%	249	19.8%
Aspartic Acid	51.7	49.3	29.7%	9.0%	0.980	0.993	95%	67%	260	19.3%
Citrulline	742	719	15.0%	6.2%	0.994	0.998	97%	95%	264	13.4%
Cystine	48.5	38.3	19.1%	8.0%	0.970	0.990	88%	59%	240	13.7%
Glutamic acid	125	120	11.0%	10.2%	0.987	0.987	115%	111%	269	15.3%
Glutamine	ORFR	614	ORFR	7.1%	ORFR	0.994	ORFR	95%	260	10.8%
Glycine	MP	350	9.2%	4.9%	0.966	0.998	87%	97%	269	8.81%
Histidine	221	178	32.8%	6.6%	0.995	0.998	143%	91%	264	11.2%
Homocitrulline		71.2		6.8%		0.994		87%	117	15.5%
Hydroxyproline	46.9	47.6	10.0%	10.9%	0.977	0.986	101%	94%	230	13.6%
Isoleucine	140	141	8.7%	5.6%	0.999	0.999	93%	94%	269	11.7%
Leucine	443	432	4.8%	5.5%	0.999	0.999	97%	93%	273	10.3%
Lysine	OR	261	OR	5.3%	OR	0.998	OR	90%	267	8.18%

Leucine: Good Performance

Analyte	Accuracy (mean)		Precision (CV% duplicates)		Linearity (r)		Recovery (%added analyte)		Data all labs	
	Your Lab	All labs	Your Lab	All labs	Your Lab	All labs	Your Lab	All labs	n	Interlab cv
Leucine	443	432	4.8%	5.5%	0.999	0.999	97%	93%	273	10.3%

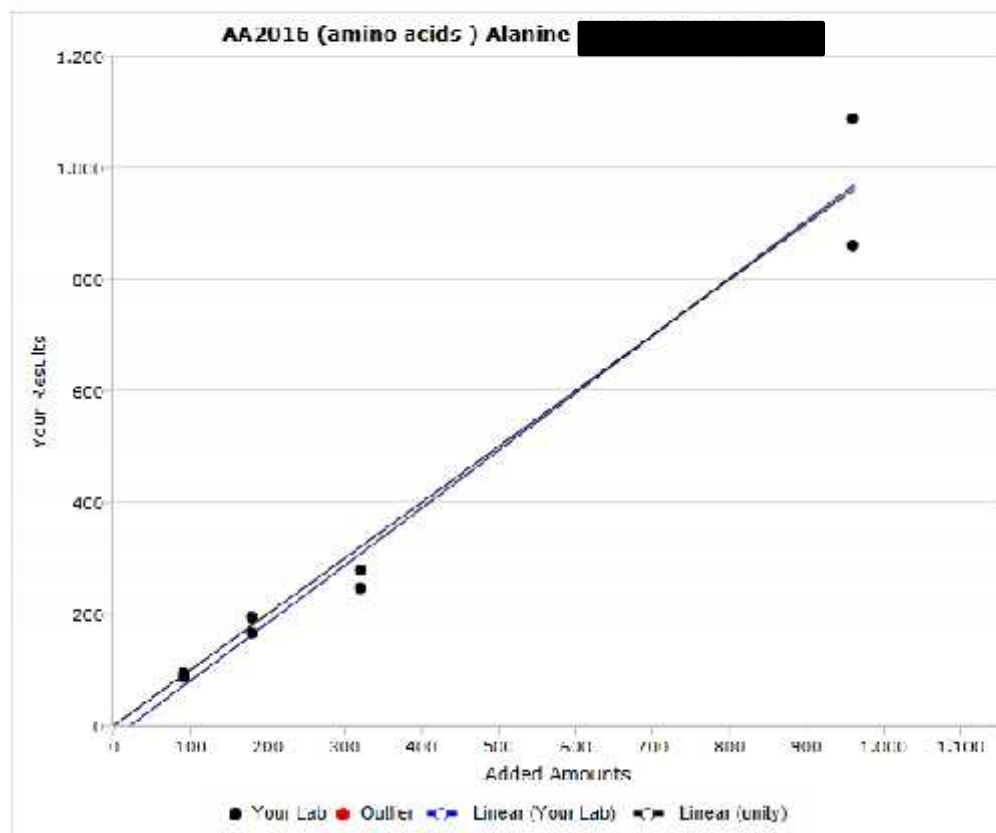
ERNDIMQA - Graphical Presentation



Alanine: Red Flag for Poor Precision

Analyte	Accuracy (mean)		Precision (CV% duplicates)		Linearity (r)		Recovery (%added analyte)		Data all labs	
	Your Lab	All labs	Your Lab	All labs	Your Lab	All labs	Your Lab	All labs	n	Interlab cv
Alanine	377	357	21.7%	5.2%	0.984	0.998	103%	95%	270	9.04%

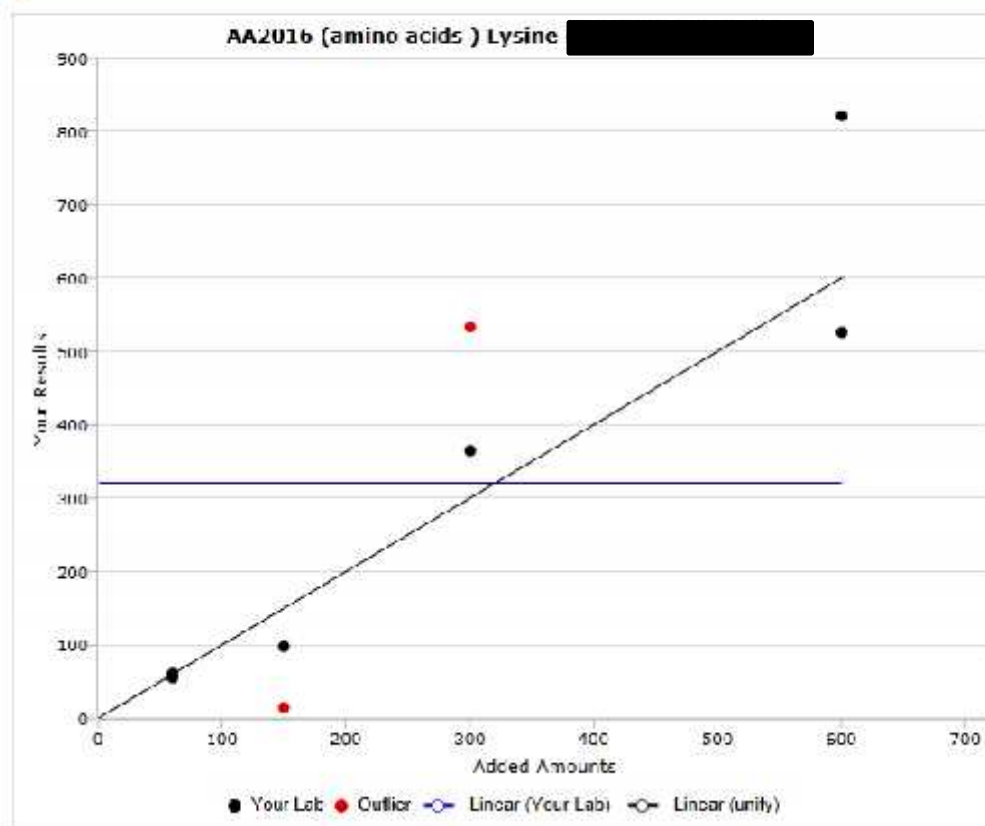
ERNDIMQA - Graphical Presentation



Lysine: purple flag for outliers

Analyte	Accuracy (mean)		Precision (CV% duplicates)		Linearity (r)		Recovery (%added analyte)		Data all labs	
	Your Lab	All labs	Your Lab	All labs	Your Lab	All labs	Your Lab	All labs	n	Interlab cv
<u>Lysine</u>	OR	261	OR	5.3%	OR	0.998	OR	90%	267	8.18%

ERNDIMQA - Graphical Presentation

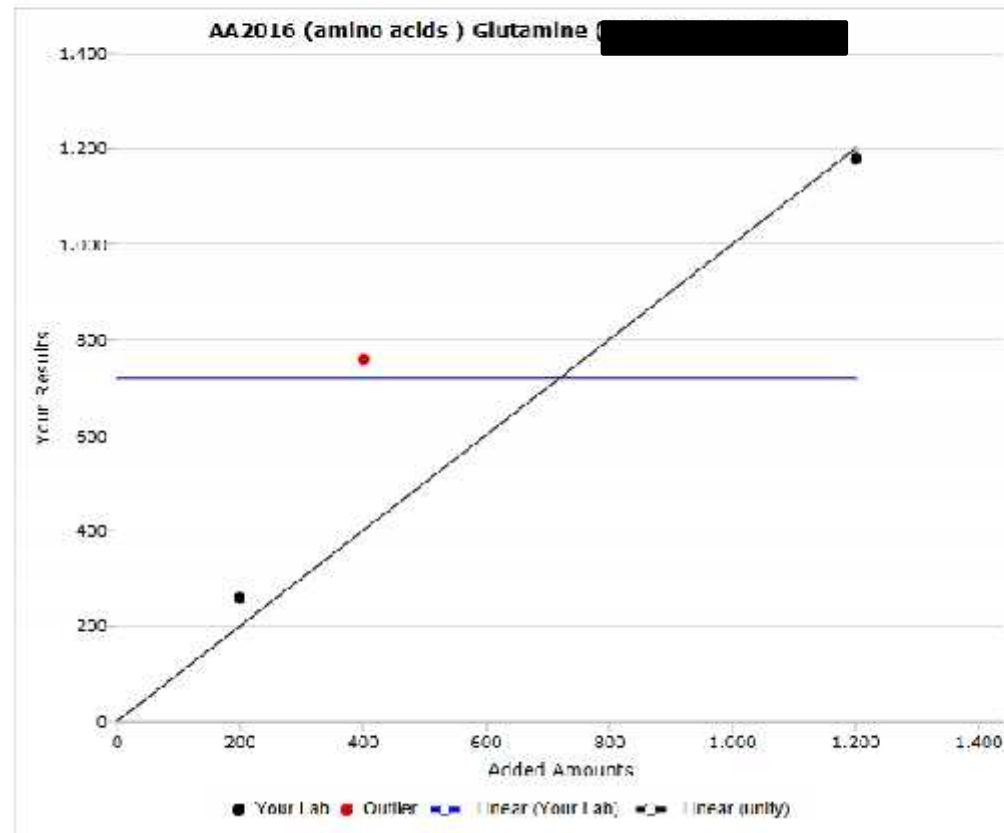


OR = Outlying Results

Glutamine: yellow flag for outlying and too few results

Analyte	Accuracy (mean)		Precision (CV% duplicates)		Linearity (r)		Recovery (%added analyte)		Data all labs	
	Your Lab	All labs	Your Lab	All labs	Your Lab	All labs	Your Lab	All labs	n	Interlab cv
<u>Glutamine</u>	ORFR	614	ORFR	7.1%	ORFR	0.994	ORFR	95%	260	10.8%

ERNDIMQA - Graphical Presentation

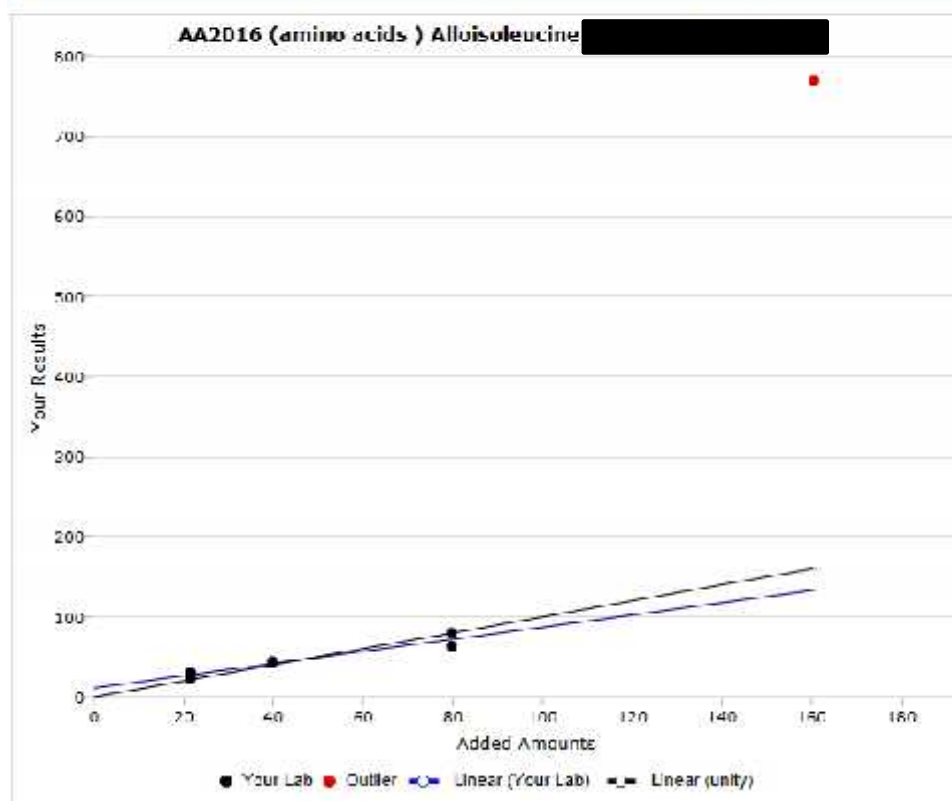


ORFR = Outlying Results and too Few Results

Alloisoleucine: amber flag for missing pair

Analyte	Accuracy (mean)		Precision (CV% duplicates)		Linearity (r)		Recovery (%added analyte)		Data all labs	
	Your Lab	All labs	Your Lab	All labs	Your Lab	All labs	Your Lab	All labs	n	Interlab cv
Alloisoleucine	MP	72.5	18.6%	7.0%	0.959	0.996	76%	95%	192	11.7%

ERNDIMQA - Graphical Presentation



ERNDIM Website



ERNDIM
Officers

Scientific Advisors:

“We want a score list for Performance Support Letters”



ERNDIMQA - Score Report

2017 Purines & Pyrimidines

PDF

Score Report for Good Submitters

LabName	MethodSet	Score
ERN		37.50
ERN		34.38
ERN		30.77
ERN		26.92
ERN		25.00
ERN		23.21
ERN		22.02
ERN		21.88
ERN		18.75
ERN		18.75
ERN		17.65
ERN		17.50
ERN		16.67
ERN		15.63
ERN		15.28
ERN		15.00
ERN		14.29
ERN		12.50
ERN		11.04
ERN		10.29
ERN		6.25
ERN		5.00
ERN		5.77
ERN		5.56
ERN		5.00
ERN		4.69
ERN		2.94
ERN		2.70
ERN		2.63
ERN		2.63

Score = % Flags

>25% Letter Scientific Advisor

Example Purines & Pyrimidines
48 Labs

12	No flag at all
11	0 – 5% flags
5	5 – 10% flags
4	10 – 15% flags
8	15 – 20% flags
3	20 – 25% flags
1	25% flags
4	>25% flags

ERNDIM Office: “We want
a. to include the qualitative schemes on the certificate
b. Automatic generation of certificates “



Administrator

- Schemes
- Units
- Calculation
- Free Query
- Query Mean SD
- Certificates
- User administration
- General Information

ERNDIM

QUALITY ASSURANCE IN LABORATORY TESTING FOR IEM

Certificate of Participation and Performance for 2016

This certificate is to confirm that:

CHUV, LAUSANNE (ERN0001)

participated in the following External Quality Assurance schemes organised by ERNDIM in 2016 and has achieved performance in the individual schemes as shown

It is essential that the laboratory's own detailed annual reports for each scheme be referred to alongside this Certificate. For the Quantitative schemes these are available from www.emdimqa.nl and for the Qualitative schemes these are available from cscg.hcuge.ch/cscq/ERNDIM/ or by contacting ERNDIM at admin@emdim.org.

Quantitative Schemes

	Subscribed	Number of Analytes		
		Included in the scheme	For which results submitted by lab	Satisfactory Performance
Amino Acids (serum) [O. Boulat]	Yes	26	26	26
Cystine in White Blood Cells []	No	-	-	-
Lysosomal Enzymes (fibroblasts) []	No	-	-	-
Neurotransmitters in CSF []	No	-	-	-
Purines and Pyrimidines (urine) [O. Boulat]	Yes	20	19	1
Quantitative Organic acids (urine) [O. Boulat]	Yes	24	24	24
Special Assays Serum [O. Boulat]	Yes	26	14	14
Special Assays Urine [O. Boulat]	Yes	16	10	10

Qualitative Schemes

	Subscribed	Submitted Results	Satisfactory Performance
Congenital Disorders of Glycosylation (serum)	No	-	-
Diagnostic Proficiency Testing (urine)	Yes	Yes	Yes
Qualitative Acyl Carnitines (DBS)	Yes	Yes	Yes
Qualitative Organic Acids (urine)	Yes	Yes	Yes
Urine Mucopolysaccharides (urine)	No	-	-

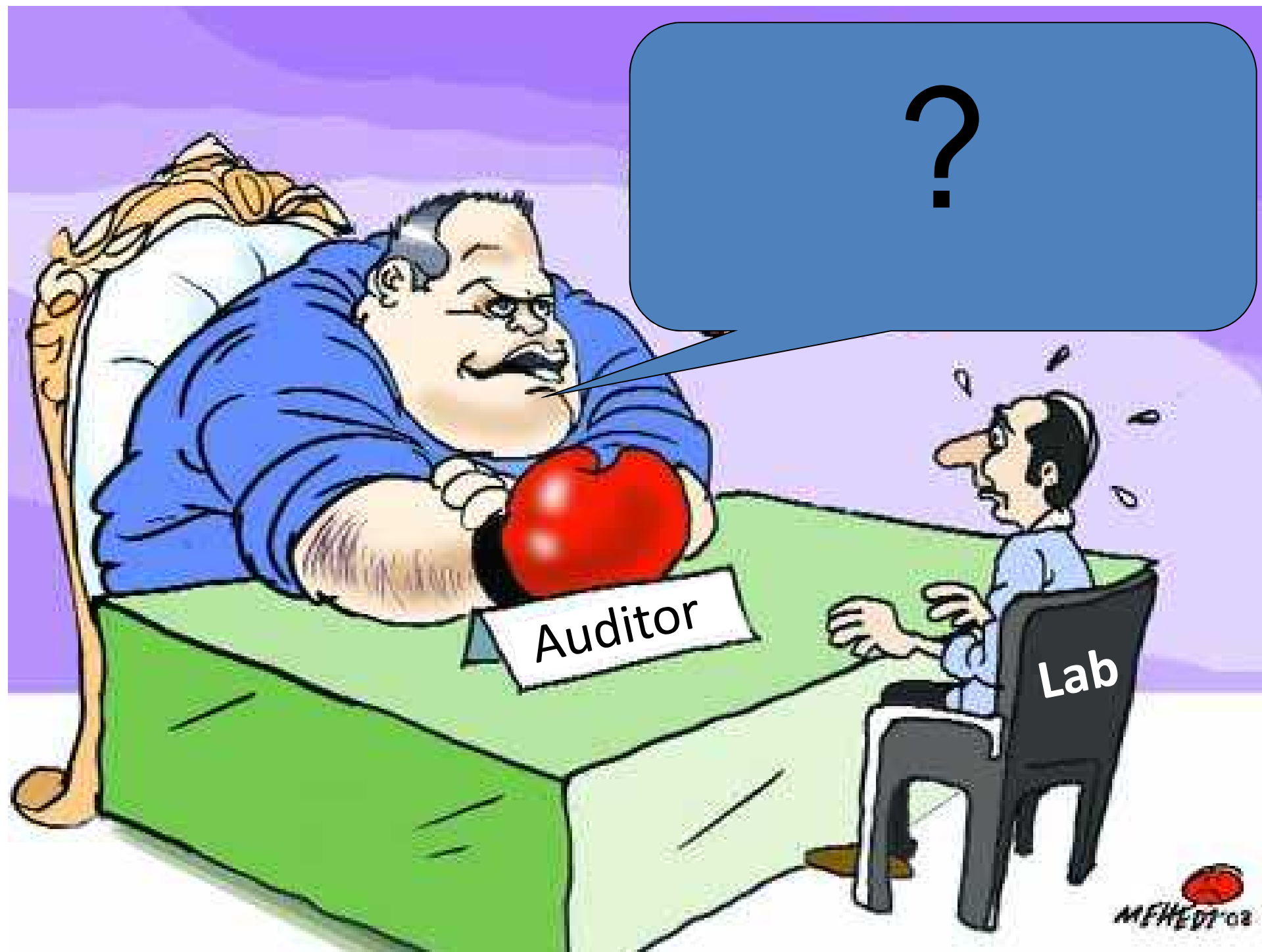
ERNDIM Website





A common dialogue





You state that you have a good laboratory. Is that confirmed with performance in proficiency testing?



Yes of course.
all annual certificates are
here on the wall.
which year would you
like to see?



2015 seems
a good year to me

Auditor

Lab

MFHEDT'08



Here you are

Auditor

Lab

MFHEDT'03



ERNDIM

QUALITY ASSURANCE IN LABORATORY TESTING FOR IEM

Certificate of Participation and Performance for 2015

This certificate is to confirm that:



participated in the following External Quality Assurance schemes organised by ERNDIM in 2015 and has achieved performance in the individual schemes as shown.

It is essential that the laboratory's own detailed annual reports for each scheme be referred to alongside this Certificate. For the Quantitative schemes these are available from www.erndimqa.nl and for the Qualitative schemes these are available from cscq.hcuge.ch/cscq/ERNDIM/ or by contacting ERNDIM at admin@erndim.org.

Quantitative Schemes

	Subscribed	Number of Analytes		
		Included in the scheme	For which results submitted by lab	Satisfactory Performance
Amino Acids (serum) (Api 3200)	Yes	28	26	13
Cystine in White Blood Cells (Api 3200 & Pentra)	Yes	3	3	2
Lysosomal Enzymes (fibroblasts) (CBE)	Yes	10	10	10
Purines and Pyrimidines (urine) ()	No	-	-	-
Quantitative Organic acids (urine) (Agilent GC2)	Yes	23	18	16
Special Assays Serum (Routine)	Yes	24	23	16
Special Assays Urine (Routine)	Yes	16	13	12

Too difficult for me.
Please explain what I see



In the columns
you see.....



	Subscribed	Number of Analytes		
		Included in the scheme	For which results submitted by lab	Satisfactory Performance
Amino Acids (serum) (Api 3200)	Yes	28	26	13
Cystine in White Blood Cells (Api 3200 & Pentra)	Yes	3	3	2
Lysosomal Enzymes (fibroblasts) (CBE)	Yes	10	10	10
Purines and Pyrimidines (urine) (I)	No	-	-	-
Quantitative Organic acids (urine) (Agilent GC2)	Yes	23	18	16
Special Assays Serum (Routine)	Yes	24	23	16
Special Assays Urine (Routine)	Yes	16	13	12

Now I understand
Hmm.....
I see that performance is
not perfect.



	Subscribed	Number of Analytes		
		Included in the scheme	For which results submitted by lab	Satisfactory Performance
Amino Acids (serum) (Api 3200)	Yes	28	26	13
Cystine in White Blood Cells (Api 3200 & Pentra)	Yes	3	3	2
Lysosomal Enzymes (fibroblasts) (CBE)	Yes	10	10	10
Purines and Pyrimidines (urine) (I)	No	-	-	-
Quantitative Organic acids (urine) (Agilent GC2)	Yes	23	18	16
Special Assays Serum (Routine)	Yes	24	23	16
Special Assays Urine (Routine)	Yes	16	13	12

You do not assay
Purines & Pyrimidines?

Auditor

Lab

	Subscribed	Number of Analytes		
		Included in the scheme	For which results submitted by lab	Satisfactory Performance
Amino Acids (serum) (Api 3200)	Yes	28	26	13
Cystine in White Blood Cells (Api 3200 & Pentra)	Yes	3	3	2
Lysosomal Enzymes (fibroblasts) (CBE)	Yes	10	10	10
Purines and Pyrimidines (urine) ()	No	-	-	-

Indeed.
Our Physicians are
not interested

Auditor

Lab

	Subscribed	Number of Analytes		
		Included in the scheme	For which results submitted by lab	Satisfactory Performance
Amino Acids (serum) (Api 3200)	Yes	28	26	13
Cystine in White Blood Cells (Api 3200 & Pentra)	Yes	3	3	2
Lysosomal Enzymes (fibroblasts) (CBE)	Yes	10	10	10
Purines and Pyrimidines (urine) ()	No	-	-	-

What about
Organic Acids:
you only submitted results
for 18 of 23 analytes?



	Subscribed	Number of Analytes		
		Included in the scheme	For which results submitted by lab	Satisfactory Performance
Amino Acids (serum) (Api 3200)	Yes	28	26	13
Cystine in White Blood Cells (Api 3200 & Pentra)	Yes	3	3	2
Lysosomal Enzymes (fibroblasts) (CBE)	Yes	10	10	10
Purines and Pyrimidines (urine) (I)	No	-	-	-
Quantitative Organic acids (urine) (Agilent GC2)	Yes	23	18	16

You're right.
Not all organic acids
are interesting for us.



	Subscribed	Number of Analytes		
		Included in the scheme	For which results submitted by lab	Satisfactory Performance
Amino Acids (serum) (Api 3200)	Yes	28	26	13
Cystine in White Blood Cells (Api 3200 & Pentra)	Yes	3	3	2
Lysosomal Enzymes (fibroblasts) (CBE)	Yes	10	10	10
Purines and Pyrimidines (urine) ()	No	-	-	-
Quantitative Organic acids (urine) (Agilent GC2)	Yes	23	18	16

Amino Acids
26 submitted
Only 13 passed?
Poor performance!!!

Auditor

Lab

	Subscribed	Number of Analytes		
		Included in the scheme	For which results submitted by lab	Satisfactory Performance
Amino Acids (serum) (Api 3200)	Yes	28	26	13

I agree. We did root analysis of this problem With help of the ERNDIM Website.

Auditor

Lab

	Subscribed	Number of Analytes		
		Included in the scheme	For which results submitted by lab	Satisfactory Performance
Amino Acids (serum) (Api 3200)	Yes	28	26	13

ERNDIMQA - Annual Report - AA

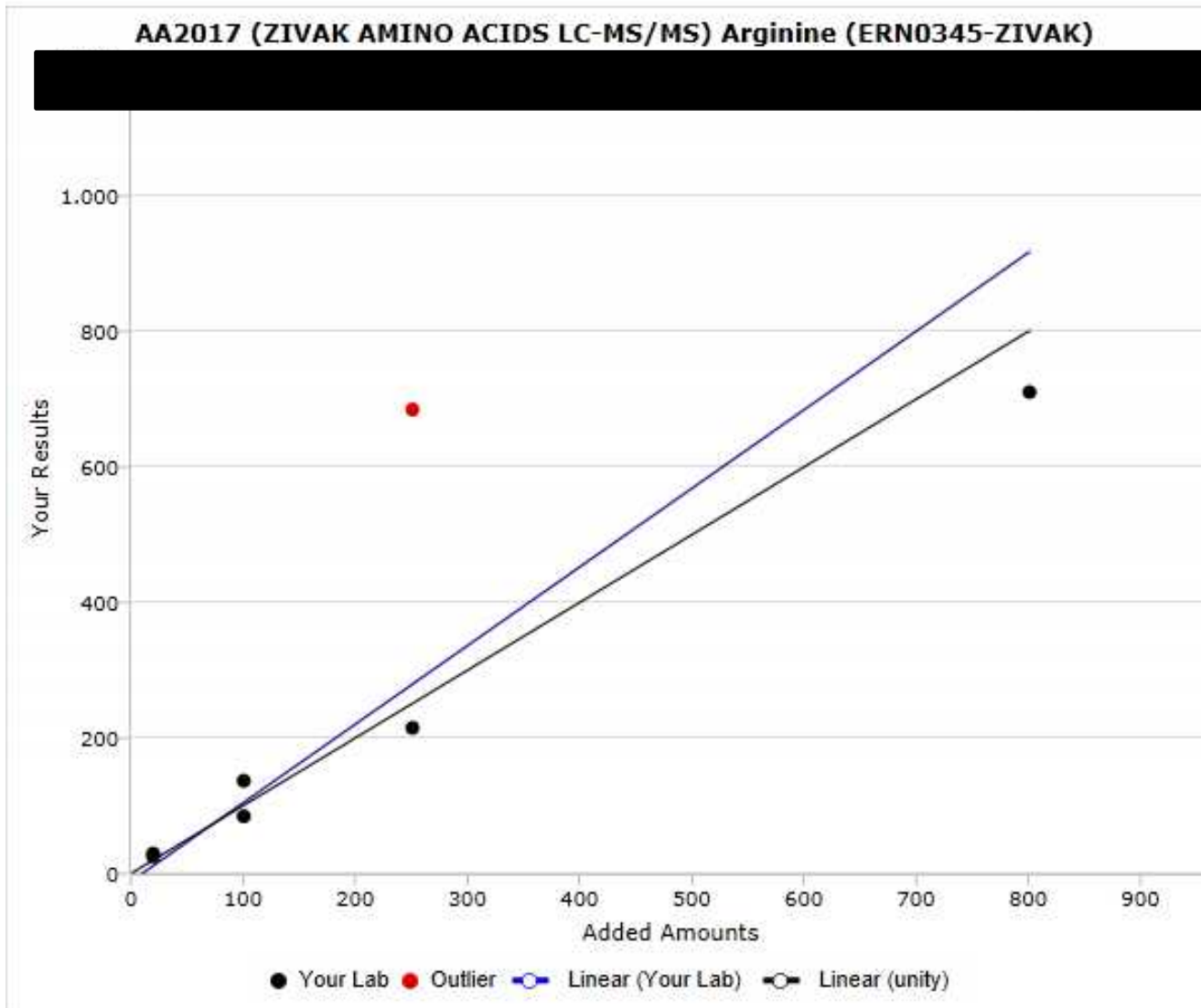
[PDF for printing](#)

Analyte	Accuracy (mean)		Precision (CV% duplicates)		Linearity (r)		Recovery (%added analyte)		Data all labs	
	Your Lab	All labs	Your Lab	All labs	Your Lab	All labs	Your Lab	All labs	n	Interlab cv
2-Aminobutyric acid	50.3	49.4	25.0%	6.5%	0.939	0.983	98%	92%	217	10.5%
Alanine	356	370	17.0%	5.1%	0.995	0.999	96%	94%	270	9.72%
Alloisoleucine		44.9		6.9%		0.995		92%	202	12.5%
Arginine	320	284	81.3%	5.4%	0.963	0.999	115%	95%	276	10.1%
Asparagine	65.9	64.2	14.1%	7.9%	0.985	0.993	91%	97%	255	18.6%
Aspartic Acid	68.5	79.1	34.3%	5.5%	0.932	0.997	66%	83%	266	16.2%
Citrulline	OR	712	OR	5.4%	OR	0.999	OR	94%	274	14.5%
Cystine	OR	42.4	OR	6.2%	OR	0.992	OR	56%	250	12.4%
Glutamic acid	98.7	136	35.3%	6.7%	0.845	0.988	71%	100%	278	10.6%
Glutamine	677	627	8.2%	5.8%	0.988	0.997	94%	93%	266	11.0%
Glycine	382	347	27.6%	4.4%	0.961	0.998	103%	95%	277	8.28%
Histidine	144	139	14.0%	5.5%	0.988	0.993	110%	94%	272	10.2%
Hydroxyproline	60.2	60.2	22.4%	9.5%	0.900	0.978	113%	102%	240	13.5%
Isoleucine	ORFR	964	ORFR	4.9%	ORFR	0.998	ORFR	93%	280	11.6%
Leucine	ORFR	439	ORFR	5.0%	ORFR	0.999	ORFR	95%	282	9.99%
Lysine	188	235	61.8%	5.0%	0.839	0.998	62%	90%	275	9.78%
Ornithine	246	258	8.2%	5.1%	0.994	0.999	99%	93%	279	11.3%
Phenylalanine	309	355	37.0%	4.8%	0.980	0.999	80%	91%	282	9.53%
Proline	245	292	53.4%	6.3%	0.916	0.998	69%	94%	264	10.6%
Serine	150	159	19.3%	4.8%	0.991	0.999	90%	96%	275	8.61%
Taurine	157	150	21.5%	4.6%	0.976	0.997	122%	95%	259	8.30%
Threonine	254	246	29.1%	4.3%	0.958	0.998	112%	97%	272	7.54%
Tyrosine	285	287	4.2%	4.4%	1.000	0.999	92%	93%	282	8.15%
Valine	289	307	3.9%	4.3%	0.999	0.999	89%	96%	283	7.88%

“In the Annual Report You see.....”



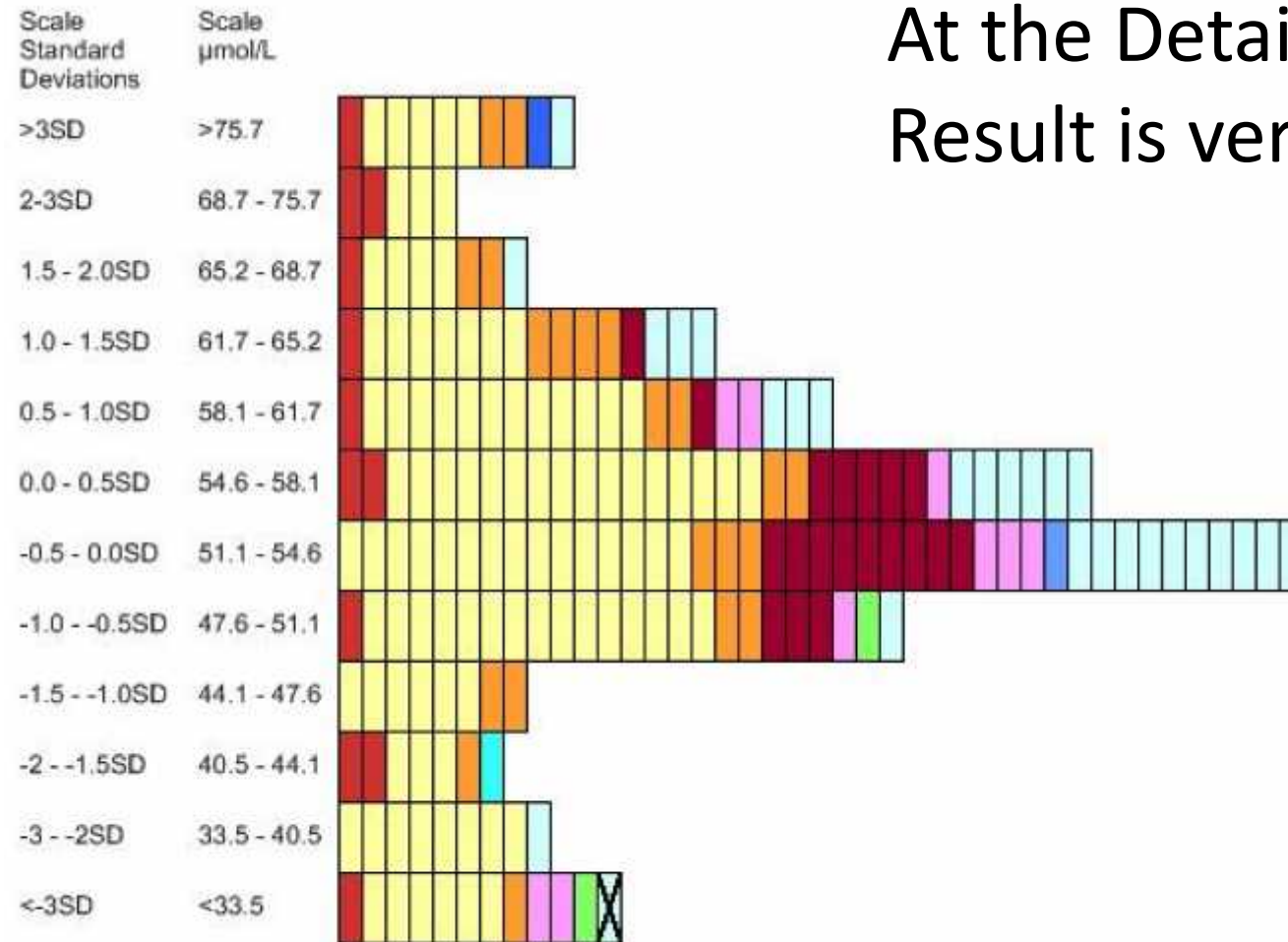
ERNDIMQA - Graphical Presentation



“Click on
Graphics of
e.g. Arginine
You see....”



“Or have a look
At the Detail Report:
Result is very low.....”



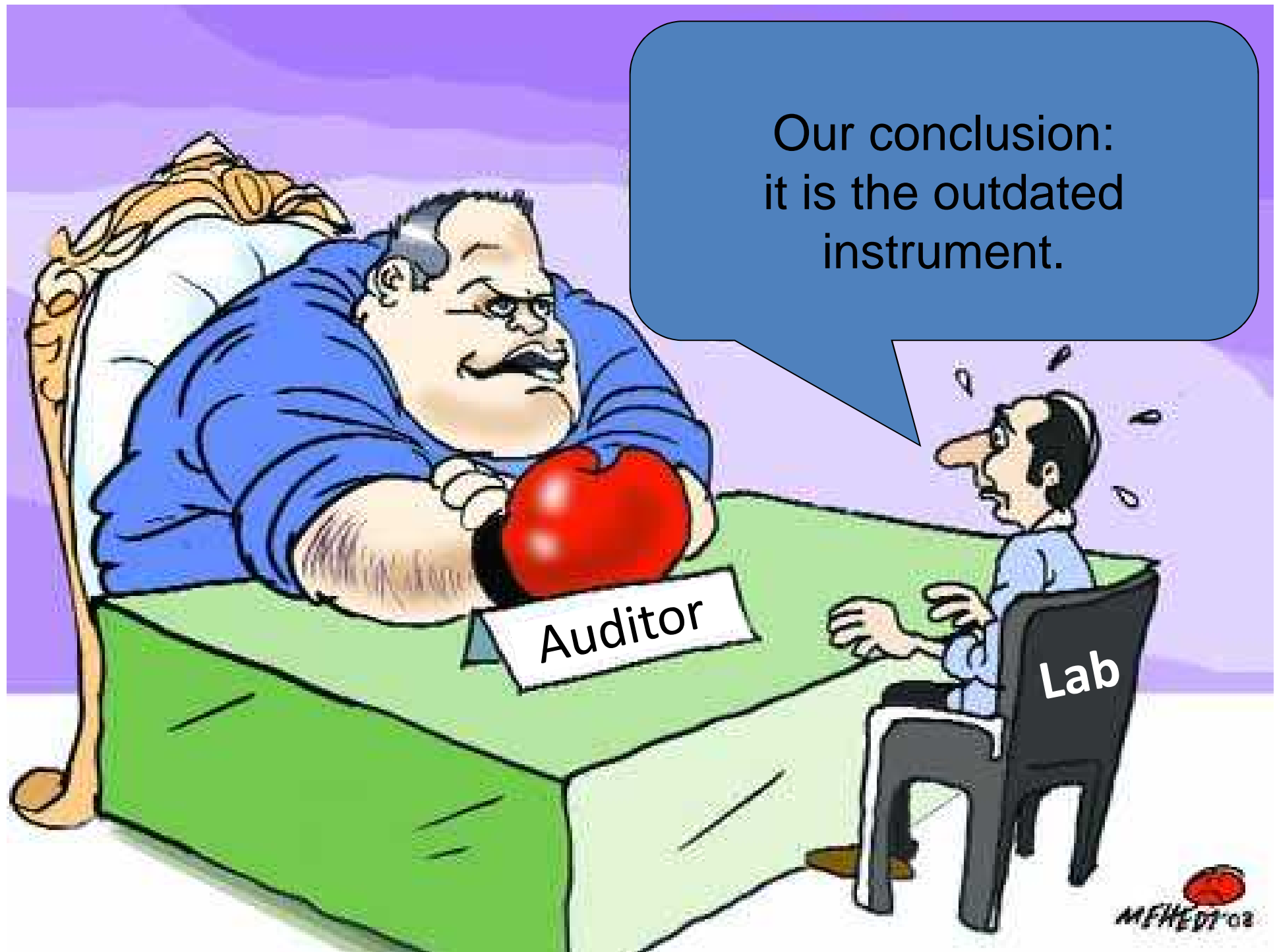
“Overview in Cycle Review report shows....”

ERNDIMQA - Cycle Review - AA

PDF for printing

Analyte	Your Lab	Med All Labs	n	ZScore	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
2-Aminobutyric acid	25.9	23.1	194	0.8	3					4	5	6		
Alanine	166	183	263	1.2	3	6	7	5		4				
Alloisoleucine		20.8	189											
Arginine	84.6	100	261	2.3	6	7		5				4	1	2
Asparagine	87.2	93.0	240	0.5			6		2	4	5	7	3	1
Aspartic Acid	89.2	85.0	252	0.4	1	2	3	5	7	6	4			
Citrulline	747	720	259	0.7	2	3	6				5	4		1
Cystine	78.2	53.0	234	5.2		3	7						1	2
													4	5
													6	
Glutamic acid	113	212	260	4.9	1	3	4	5	2	7				
					6									
Glutamine	1260	1215	253	0.4	3				2		4	6	1	5
Glycine	664	720	263	1.2			5			6	7	4	1	2



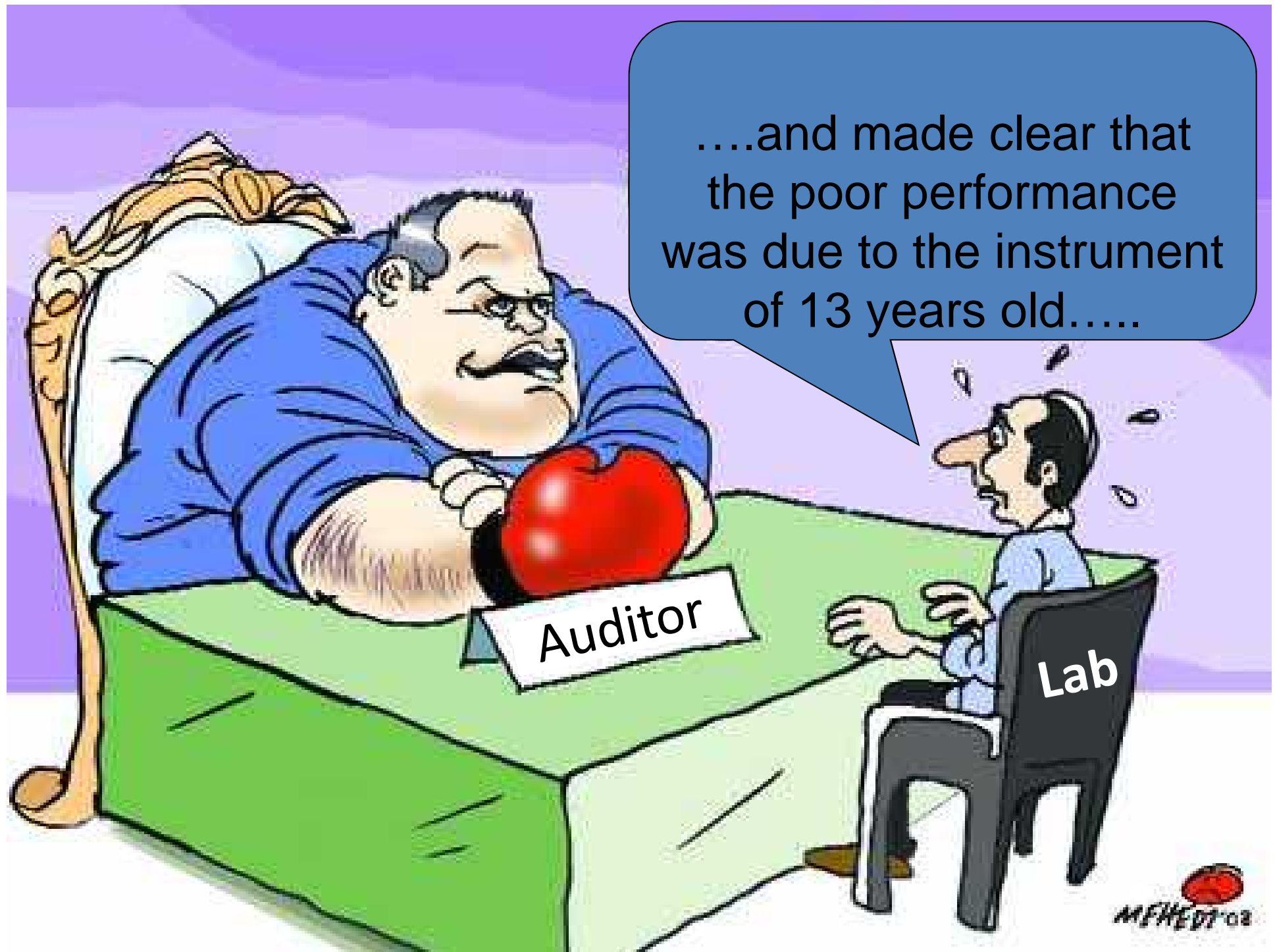


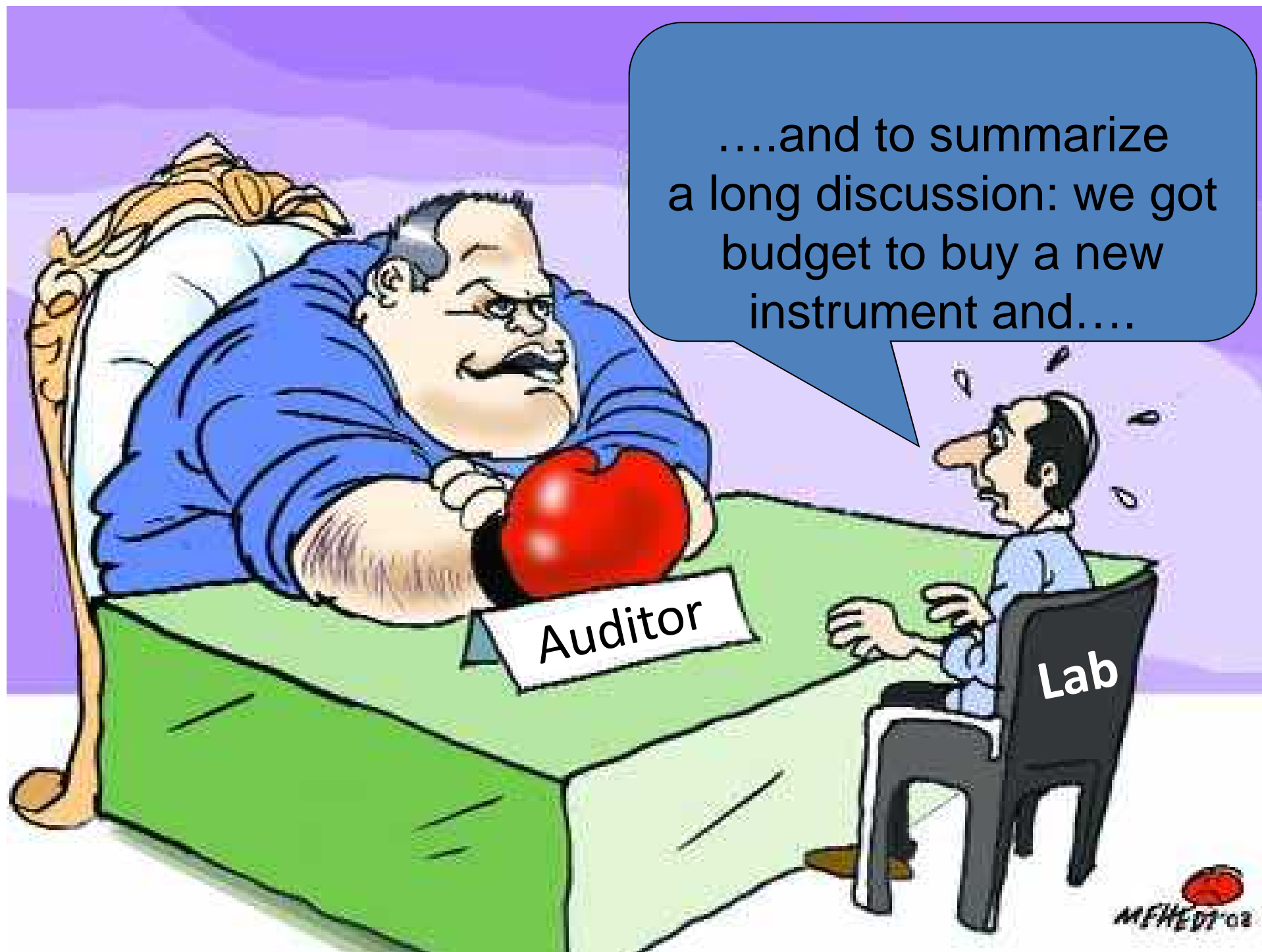
With the ERNDIM report
in our hands went to the
manager of our hospital
and.....

Auditor

Lab







....and this is our
performance in the last
year....

Auditor

Lab

MFHEDT'03



ERNDIMQA - Annual Report

PDF for printing

Analyte	Accuracy (mean)		Precision (CV% duplicates)		Linearity (r)		Recovery (%added analyte)		Data all labs	
	Your Lab	All labs	Your Lab	All labs	Your Lab	All labs	Your Lab	All labs	n	Interlab cv
L-Aminobutyric acid	42.5	45.8	4.2%	7.1%	0.999	0.997	90%	101%	215	13.7%
Alanine	332	357	3.6%	5.2%	1.000	0.998	86%	95%	270	9.04%
Alloisoleucine	66.5	77.5	4.8%	7.0%	0.999	0.996	92%	95%	192	11.7%
Arginine	230	249	1.6%	4.4%	1.000	0.999	87%	95%	267	8.65%
Asparagine	71.1	89.0	1.3%	10.2%	0.994	0.991	77%	97%	249	19.8%
Aspartic Acid	51.0	49.3	6.9%	9.0%	0.997	0.993	73%	67%	260	19.3%
Citulline	654	719	9.4%	5.2%	0.997	0.998	85%	95%	264	13.4%
Cystine	38.6	38.3	7.6%	9.0%	0.988	0.990	58%	59%	240	13.7%
Glutamic acid	124	120	12.4%	10.2%	0.984	0.987	120%	111%	269	15.3%
Glutamine	536	614	6.4%	7.1%	0.996	0.994	81%	95%	260	10.8%
Glycine	330	350	3.9%	4.9%	0.999	0.998	91%	97%	269	8.81%
Histidine	166	178	1.1%	5.6%	0.999	0.998	86%	91%	261	11.2%
Homocitulline	71.0	71.2	3.4%	5.8%	0.996	0.994	88%	87%	117	15.5%
Hydroxyproline	49.0	47.6	3.2%	10.9%	0.994	0.985	95%	94%	230	13.6%
Isoleucine	130	141	4.4%	5.6%	1.000	0.999	87%	94%	269	11.7%
Leucine	405	432	2.8%	5.5%	1.000	0.999	88%	93%	273	10.3%
Lysine	250	251	2.0%	5.3%	1.000	0.998	89%	90%	267	8.18%
Ornithine	265	256	8.2%	4.9%	0.998	0.999	97%	95%	270	10.4%
Phenylalanine	334	354	2.0%	4.9%	1.000	0.999	87%	92%	274	9.48%
Proline	327	316	2.6%	5.7%	0.998	0.996	90%	97%	255	9.51%
Saccharopine	95.0	99.8	4.7%	5.6%	0.999	0.990	91%	97%	101	11.0%
Serine	134	146	2.2%	5.5%	0.998	0.997	88%	97%	269	9.14%
Taurine	166	173	3.1%	5.5%	1.000	0.999	93%	95%	253	9.15%
Threonine	176	187	2.6%	4.5%	0.999	0.998	91%	97%	266	7.39%
Tyrosine	229	247	4.5%	5.1%	0.999	0.999	86%	92%	274	9.75%
Valine	280	304	3.6%	5.0%	1.000	0.999	89%	95%	274	8.61%

“All Green Flags!”

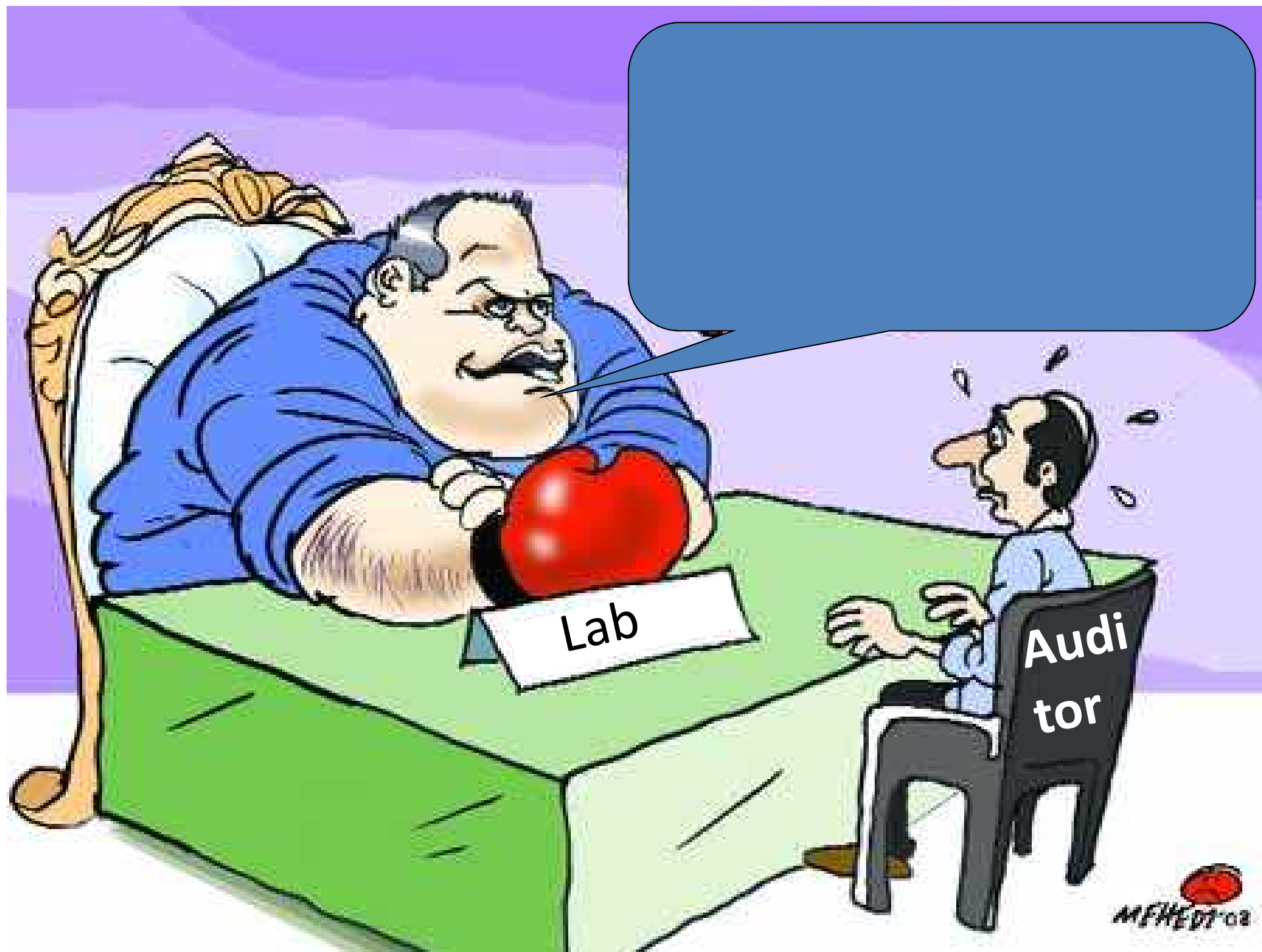


Good
Corrective Action!

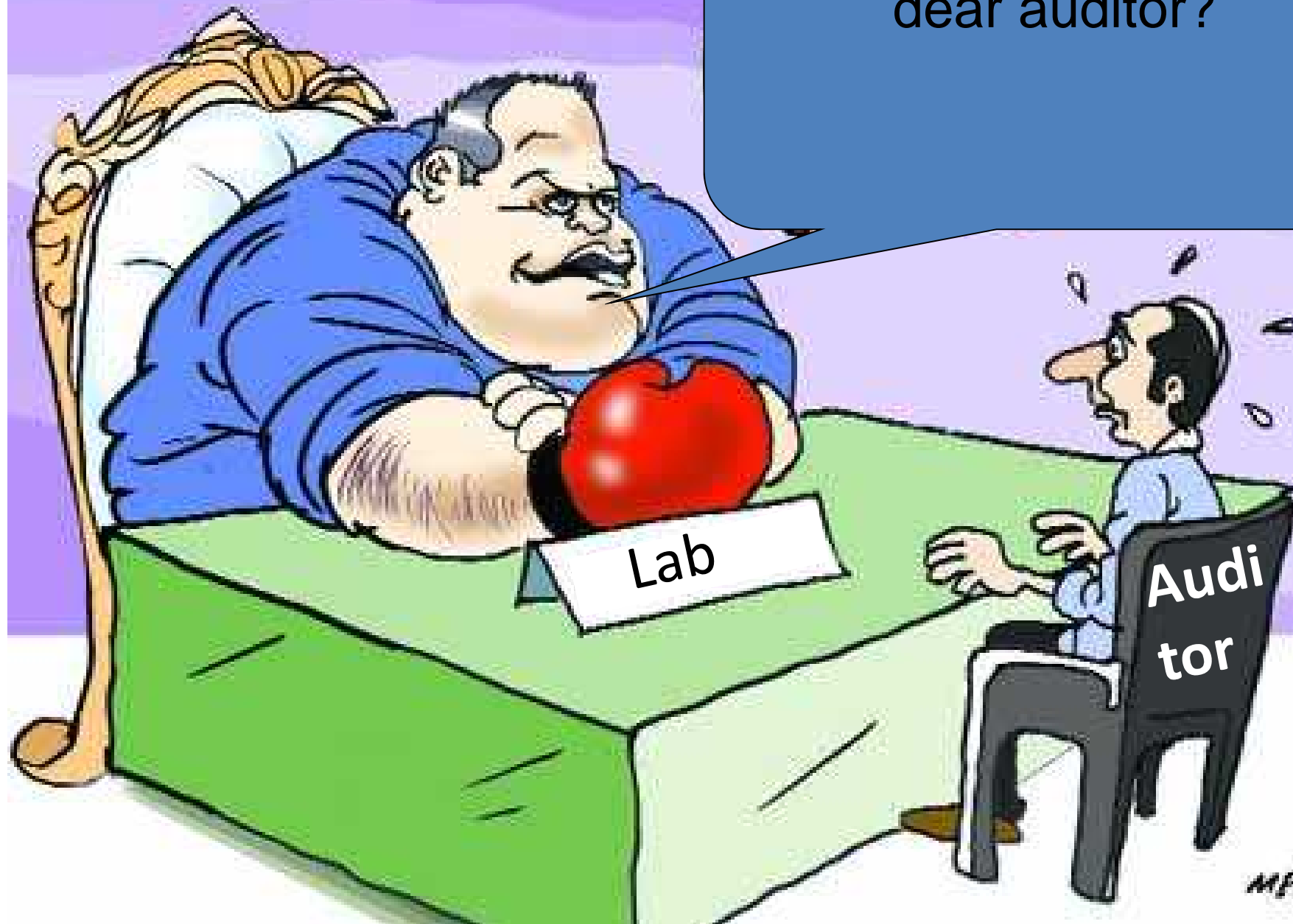


The end of the Interview.....

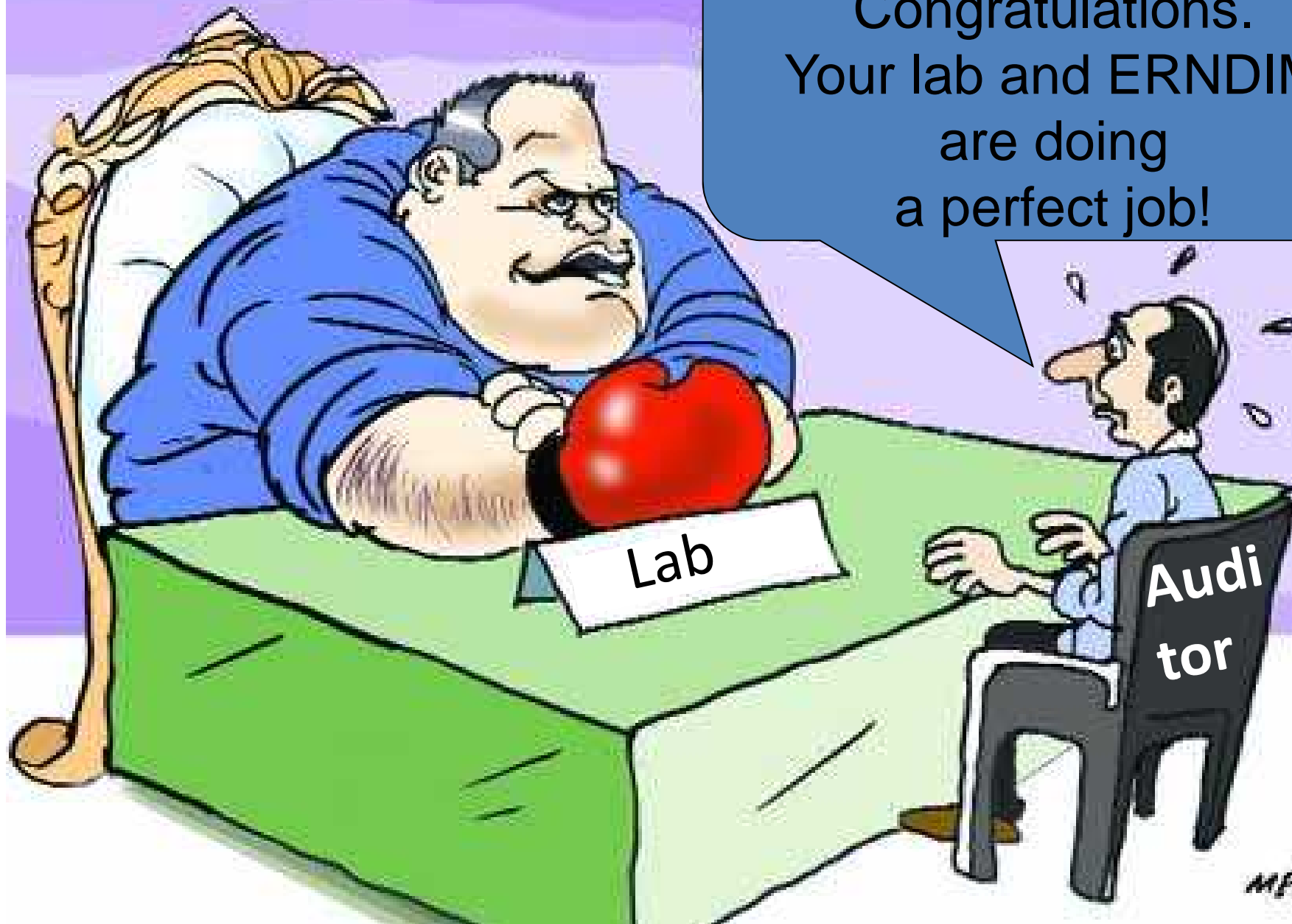
..... Roles change



Any more Questions
dear auditor?



No thank you.
Congratulations.
Your lab and ERNDIM
are doing
a perfect job!



ERNDIM Website: In Summary

