Institute of Biochemistry
German Sport University Cologne
WADA-accredited Laboratory for Doping Analysis
Accreditation ISO/IEC 17025:2005; D-PL-13340-01-00

Cologne, 25.06.2014

Documentation Package
sample
A 6050816

Analytical report:	**S20143705-1**
Federation:	**ISC**
Code no.:	**6050816**
Lab no:.	**7397**
Sample receipt:	**21.05.2014**
Adverse Analytical Finding:	**Recombinant Erythropoietin**
ADAMS Submission:	**11.06.2014**

I hereby certify that these documentation package data are true copies and/or summaries of original data and forms.

Data for samples other than **6050816** may be blanked out for privacy.

Cologne, 25.06.2014

U Mareck

Dr. U. Mareck

(Quality manager)

Documentation Package

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Summary of findings with guidance through the chain of custody

Reception of A/B bottle 6050816	21.05.2014	
Registration of A/B bottle 6050816	21.05.2014	
Storage of A/B bottle 6050816 (frozen)	22.05.2014 / 21.05.2014	
Screening SAR-PAGE (11.1*/ Gel 291) of A 6050816 Result: suspicious	28.05.2014	
Confirmation IEF (11**/ Gel 65) of A 6050816 Result: recombinant erythropoietin	02.06.2014	
Confirmation SAR-PAGE (11.1*/ Gel 296) of A 6050816 Result: recombinant erythropoietin	05.06.2014	
Analytical report of A 6050816	11.06.2014	S20143705-1
Data transfer into ADAMS	11.06.2014	

*) Detection of various erythropoiesis stimulating agents (ESAs) in human urine and blood by SDS- and SAR-PAGE respectivly and immunoblotting.

**) Detection of various erythropoiesis stimulating agents (ESAs) in human urine and blood by isoelectric focussing and immunoblotting.

List of laboratory staff involved in the test

Name		Qualification	Tasks	Initials
Blobel	Mike	Technician	Scr. 11, 11.1, 21, 24, 25	MB
Geyer	Hans	Ph.D.	Deputy head of laboratory	
Kempkes	Raoul	Scientific Associate	Scr. 11, 11.1, 25 / Responsible for Scr. 21, 24	RK
Klose	Christiane	Scientific Associate	Office	
Reihlen	Philipp	Scientific Associate	Scr. 21, 24 / Responsible for Scr. 11, 11.1, 25	PR
Scharf	Marcel	Scientific Associate	Sample reception and pre-analysis procedure	
Schertel	Thomas	Scientific Associate	Sample reception and pre-analysis procedure	
Schmidt	Thomas	Student Assistant	Sample reception and pre-analysis procedure	THS
Völker-Schänzer	Evelyn	Scientific Associate	Scr. 11, 11.1, 25	
Wick	Torsten	Scientific Associate	Sample reception and pre-analysis procedure	TW

THE IRISH SPORTS COUNCIL DOPING CONTROL FORM

Top Floor, Block A, West End Office Park, Blanchardstown, Dublin 15 Phone: +353 (0) 1 860 8800 // Fax: +353 (0) 1 860 8860 // antidoping@irishsportscouncil.ie // www.irishsportscouncil.ie/Anti-Doping

Test Collection Authority: ISC

Test Authorised By: ISC

Labor Nr.: 7 397
Jahr: 2014
Volumen 45 ml

BEREG-KIT 6050816 ISC Exp. 03.2015

SPORT/DISCIPLINE: Athletics / TRACK

3. INFORMATION FOR ANALYSIS

ARRIVAL TIME AT DOPING CONTROL STATION: 11:04 | OUT OF COMPETITION: ✓ | IN COMPETITION: | GENDER: Male / Female | ISC REF. NO.: 57603814

URINE

Urine Sample Code Number
A/B: 6050816 | VOL (ml): 140 | TIME PROVIDED: 11:30 | SPECIFIC GRAVITY: 1.015 | DATE: 29/05/2014

Additional Sample Code Number
A/B: | VOL (ml): | TIME PROVIDED: | SPECIFIC GRAVITY: 1.0 | DATE:

BLOOD

573890

DED 11:18 | A/B: | Blood Sample Code Number | TIME PROVIDED: | DATE: 29/05/2014

SUPPLEMENTARY FORM USED (BLOOD):

DECLARATION OF MEDICATION(S)/SUPPLEMENTS: LIST ANY PRESCRIPTION OR NON-PRESCRIPTION MEDICATIONS AND/OR SUPPLEMENTS TAKEN OVER THE PAST 14 DAYS.

SUBSTANCE	DOSAGE	ROUTE	WHEN TAKEN	SUBSTANCE	DOSAGE	ROUTE	WHEN TAKEN
Iron Tablet	1	Oral	16/5/2014				
Multi Vit	1	Oral	18/5/2014				

SUPPLEMENTARY FORM USED (MEDICATIONS/SUPPLEMENTS):

IN ORDER TO HELP COMBAT DOPING IN SPORT, I AGREE THAT MY SAMPLE MAY BE USED FOR ANTI-DOPING RESEARCH PURPOSES. WHEN ALL ANALYSES HAVE BEEN COMPLETED AND MY SAMPLE WOULD OTHERWISE BE DISCARDED, IT MAY BE USED BY ANY WADA-ACCREDITED LABORATORY FOR ANTI-DOPING RESEARCH OF ANY TYPE, PROVIDED THAT IT CAN NO LONGER BE IDENTIFIED AS MY SAMPLE.

I ACCEPT ✓ | I REFUSE

Version 10.0 // 03/05/2013 **Top Copy:** ISC ADU **Blue Copy:** Lab. Copy **Yellow Copy:** Lab. Copy **Green Copy:** Athlete Copy **Pink Copy:** Athlete Notification Copy

THE IRISH SPORTS COUNCIL

CHAIN OF CUSTODY FORM

Irish Sports Council
Top Floor, Block A
West End Office Park
Blanchardstown
Dublin 15
Tel: +353 (1) 8608829
Fax: +353 (1) 8608860

Lab Address:
Prof. Dr. W. Schaenzer
...tut fuer Biochemie (DSHS), 7. Etage
...Sportpark Müngersdorf 6
...3 Köln
...MANY
...+49 (0) 221 4982 4920
...+49 (0) 221 497 32 36

Sender: TNT Account: 58824
Irish Sports Council
TOP FLOOR, BLOCK A
West End Office Park
BLANCHARDSTOWN
DUBLIN 15
DU 15
Ireland
Contact: Cólleen Devine
Tel: 0035318608832

Delivery Address
Istitut Fuer Biochemie
AM Sportpark
Mungersdorf 6
Koeln

Sender Ref: 576/038,045,053-579/011/

428439690

Shipping Date: 20 May 2014
Description of Goods blood and urine
Package Type: BOX
Dimensions: 30cm x 30cm x 30cm

1. Please find enclosed the ... bered:

ISC REF NUMBER	KIT NUMBER		SPORT	EPO ✓YES X NO	COMMENT
[redacted]			[redacted]		
576/038/14	6050816		athletics	✓	
[redacted]			[redacted]		
—	—		—		—

2. Special Lab Instructions:

Please return to:
Irish Sports Council, Top Floor, Blo...
West End Office Park
Blanchardstown, Dublin 15, Ireland
Tel: +353 (0) 8...37607
ID: 20083945

3. Lab Consignment Note Number: L28439690

4. DCO Signature: John Fagan

Date of Collection: 20/5/2014

For Lab Use Only – Acknowledgement of Receipt

5. Lab Signature: [signature]

Prof. Dr. Wilhelm Schänzer
Deutsche Sporthochschule Köln
Institut für Biochemie
Am Sportpark Müngersdorf 6
50933 Köln
Telefon 0221 / 497 13 13
Telefax 0221 / 497 32 36

Comment:

Date Received: 21.05.2014 09:08 am

Version 3.0
01-Jan-10

276

Copy Distribution: *White Copy*= Returned to ISC-ADU with paperwork *Yellow Copy*= Sent to Lab in transport box.

Urine integrity test

Densitymeter and pH-meter:

Lab. Code	Manufacturer/Typ	further details
Dichte- und pH-Messeinheit	Densitymeter: PAAR (AU)/DMA38 pH: CONSORT C3010	PC controlled (DensiLab)

2.5 ml of each sample are pipeted into a tube, connected to the laboratory code number. Specific gravity and pH-value is measured automatically. The data are transferred into the *LIMS*.

Analysen Werte

Datum: 20.06.14 Blatt: 1

EDatum	AuftragNr	LaborNr	phc	sg	sgb	dib	phc4	phc7	phc9
23.05.14	C8310055630	07397	6.40	1.015		1.01			

phc: pH-Wert,
sg: Spez.Gewicht,
sgb: Spez.Gewicht,
dib: Dichte Biegeschwinger, g/ccm3
phc4: pH-Wert 4,
phc7: pH-Wert 7,
phc9: pH-Wert 9,

Institut für Biochemie
Institute of Biochemistry
Akkreditierung nach
ISO/IEC 17025:2005
(DAkkS-Reg.Nr.: PL-13340-01)

Sample bottle laboratory internal chain of custody –

Sample A 6050816

Versender: TNT

Bote/Nr: 428439690

Absender: ISC

Ansprechpartner: May

Verband /Auftraggeber: ISC

Probenart: OOC

Probentyp: HU

Labor-Nr. A/B	Code-Nr A/B	TMC	Disziplin	Flaschensystem	Geschlecht
7397	6050816	576-038-14	Track	Berlinger	1

Probenbewegung:			
Datum	**in Raum**	**Betreuer**	**Grund**
21.05.2014 09:08	R710	T. Wick	Annahme
21.05.2014 09:15	R702	T. Schertel	Einlagerung nach Annahme
21.05.2014 13:34	R710	T. Schmidt	vor Registrierung
21.05.2014 13:49	R702	T. Schmidt	nach Registrierung
21.05.2014 13:55	R721a	T. Schertel	B-Probe einfrieren
22.05.2014 13:10	R710	M. Scharf	vor Dekantierung
22.05.2014 14:00	R702	M. Scharf	nach Dekantierung
22.05.2014 14:10	R721a	M. Scharf	A-Probe einfrieren
30.05.2014 10:35	R717	E. Völker-Schänzer	Bestätigungsanalysen A 6050816
30.05.2014 12:30	R721a	E. Völker-Schänzer	A-Probe einfrieren
04.06.2014 08:25	R715	P. Reihlen	Sicherung der Probenflaschen A/B 6050816 Lagerung bei -20°C±4°C

R 702 = Room 702: Locked sample storage room (+ 4°C) in the secured area of the Institute of Biochemistry
R 710 = Room 710: Laboratory room / sample registration in the secured area of the Institute of Biochemistry
R 715 = Room 715: Locked sample storage container (-20°C ± 4°C) for suspicious samples and samples with adverse analytical finding(s) in the secured area of the Institute of Biochemistry
R 717 = Room 717: Laboratory room / sample preparation in the secured area of the Institute of Biochemistry
R 721a = Room 721a: Locked sample storage room (-15°C ± 4°C) in the secured area of the Institute of Biochemistry

721 a

B-Proben

Datum		von	bis	Kiste
21.05.2014		7353	7396	130
22.05.2014 #7397 [illegible] 4.6.14 8:25 [illegible]		7397	7421	131
26.05.2014		7422	7440	131
26.05.2014		7441	7484	132
26.05.2014		7485	7515	133
26.05.2014		7516	7519	133
27.05.2014		7520	7528	133

DSHS KÖLN INSTITUT FÜR BIOCHEMIE	**Aliquot Chain of Custody Dokumentation**	Seite 1 / 2

Ultrafiltration [Urin] #253 — Fr, 23. May 2014

Labor#	Intern#	Prep	Info/Ergebnis
[redacted]			
24 [redacted]**7 397**	5887	UF	
[redacted]			

Datum	Zeit	Bewegung der Aliquote	Aliquotiertes Volumen pro Probe	Visa
23.5.14	11°°	702 → 717	15 ml	CR

Ultrafiltration [Urin] #253 — Fr, 23. May 2014

11³⁰

1. Zugabe von Complete Protease Inhibitor und Tris-Puffer
2. Überprüfung pH-Wert
3. Zentrifugation
4. Zugabe von Complete Protease Inhibitor und Tris-Puffer
5. 2-mal Zentrifugation in verschiedenen Einheiten
6. Aliquotierung des Retentats; Gesamtvolumen notieren
7. Lagerung in Raum 717 bei -20°C

15¹⁰

ACC: UF IAP SOP: HS1111 Freigabe: 01.03.2013 ESaM r.e.d v1.0 2013

DSHS KÖLN INSTITUT FÜR BIOCHEMIE	**Aliquot Chain of Custody Dokumentation**	Seite 1 / 2

SAR-PAGE single blot #291 — Mi, 28. May 2014

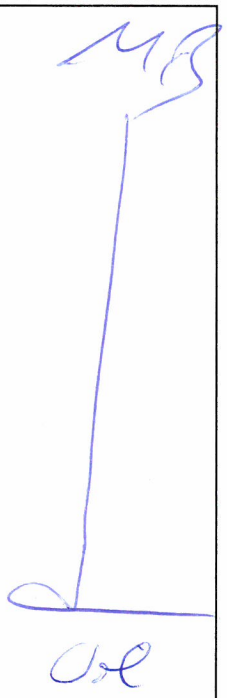
Labor#	Intern#	Prep	Info/Ergebnis
[redacted]			
15 [redacted] 7 397	5887	UF	Sup.
16 **ESA-Mix**	5944		o. k.
[redacted]			
20 **NIBSC**	5790		o. k.

DSHS KÖLN INSTITUT FÜR BIOCHEMIE	**Aliquot Chain of Custody Dokumentation**	Seite 2 / 2

SAR-PAGE single blot #291 — Mi, 28. May 2014

27.5.
28.5

16:00	1. Inkubation auf ELISA-Wells
	2. Laufpuffer vorbereiten
	3. Dynepo- und NIBSC-Standard vorbereiten
	4. ELISA Proben waschen, mit MasterMix versetzen
	5. ELISA Proben und Standards denaturieren
	6. Proben mit internen Standards versetzen
	7. Gelkammer vorbereiten, Proben auftragen
V	8. Elektrophorese
V	9. Western Blot
12:30	10. Blocken
14:00	11. Reduzieren
14:30	12. Inkubation 1.Antikörper
	13. Waschen mit PBS
18:15	14. Inkubation 2.Antikörper
	15. Waschen mit PBS
10°6	16. Detektion



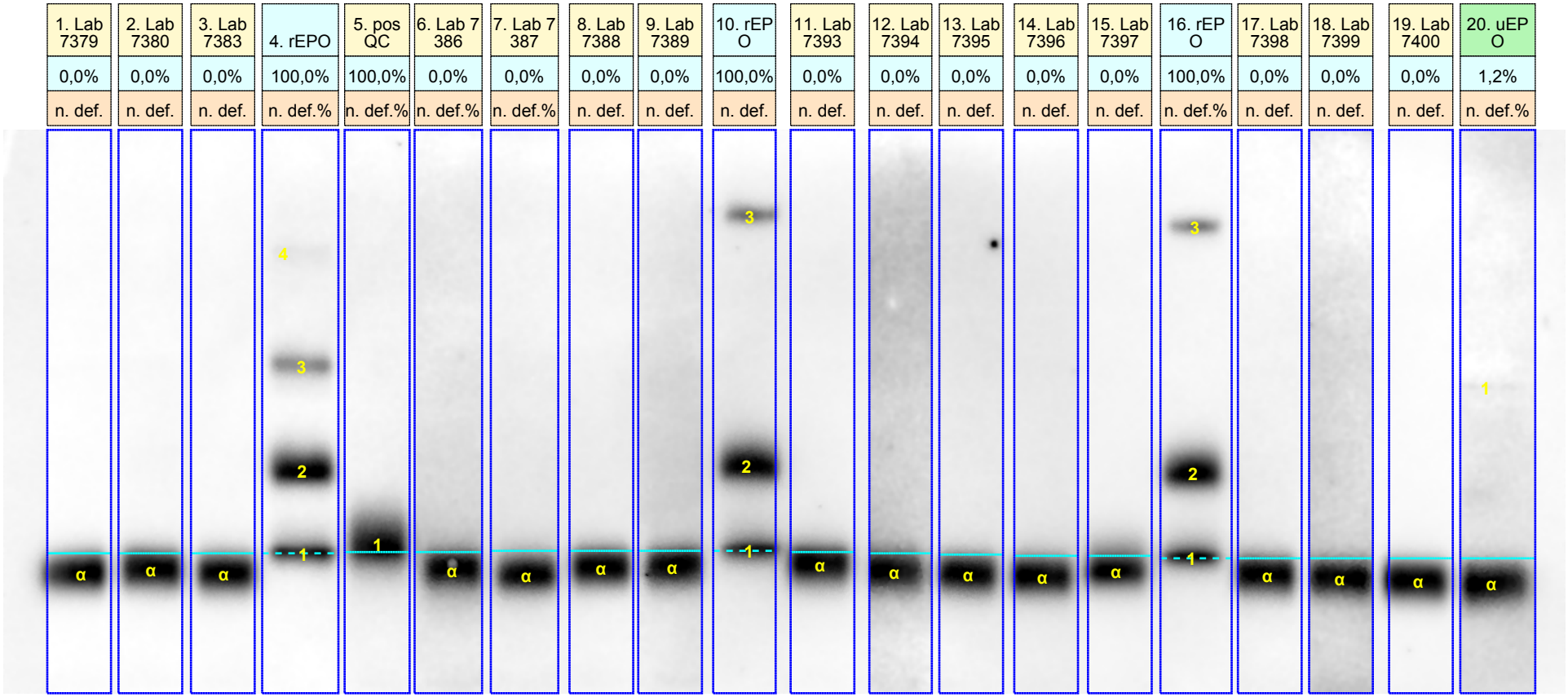
30
~~29~~ 5

ACC: SAR SB SOP: HS2005 Freigabe: 01.03.2013 ESaM r.e.d v1.0 2013

GASepo Analysis Report

Session: Analysis 0291_SAR_6sec_annotation.tif 2014-05-30
Image File: 0291_SAR_6sec_annotation.tif
Operator: Evelyn

Laboratory: Manfred Donike Institut
Date of Analysis: 30.05.2014
12:42



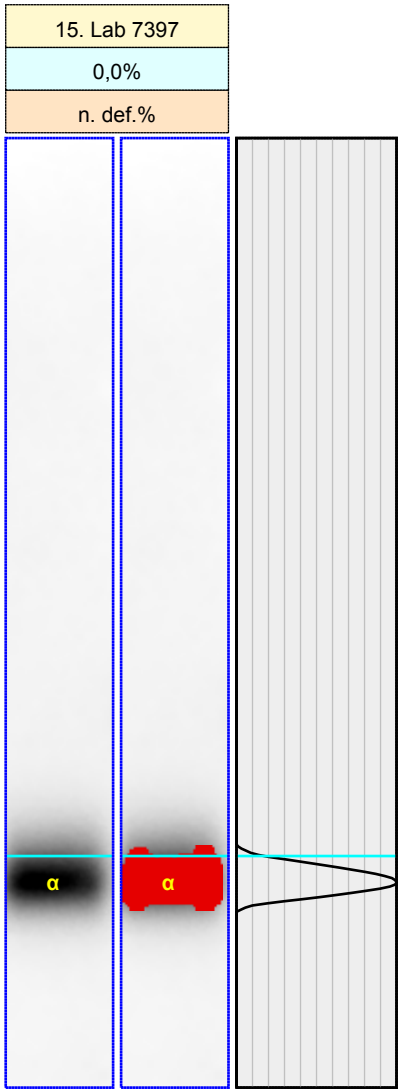
COLORLEGEND: EPOαβ DARBEPOETINα

2.1.2

GASepo Analysis Report

Session: Analysis 0291_SAR_6sec_annotation.tif 2014-05-30
Image File: 0291_SAR_6sec_annotation.tif
Operator: Evelyn

Laboratory: Manfred Donike Institut
Date of Analysis: 30.05.2014
12:42



Lane #15: Lab 7397									
Name	Comment	Cent X	Cent Y	Cent Z	Max X	Max Y	Max Z	Volume Abs	Volume nMax
α		22,5	352,0	12173,69	10	354	28168,42	14949300,0	100,0

2.1.2

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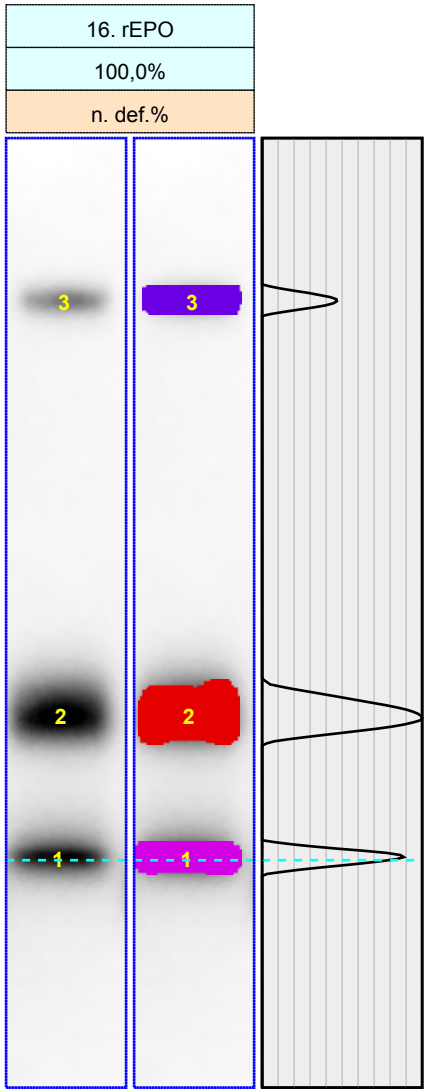
GASepo Analysis Report

Session: Analysis 0291_SAR_6sec_annotation.tif 2014-05-30
Image File: 0291_SAR_6sec_annotation.tif
Operator: Evelyn

Laboratory: Manfred Donike Institut
Date of Analysis: 30.05.2014
12:42



Lane #16: rEPO									
Name	Comment	Cent X	Cent Y	Cent Z	Max X	Max Y	Max Z	Volume Abs	Volume nMax
3		27,5	76,6	4517,75	35	77	10810,36	2895880,0	23,7
2		26,0	273,3	9415,09	34	275	19232,50	12201960,0	100,0
1		24,8	341,1	7412,49	35	341	16773,79	5633489,0	46,2

2.1.2

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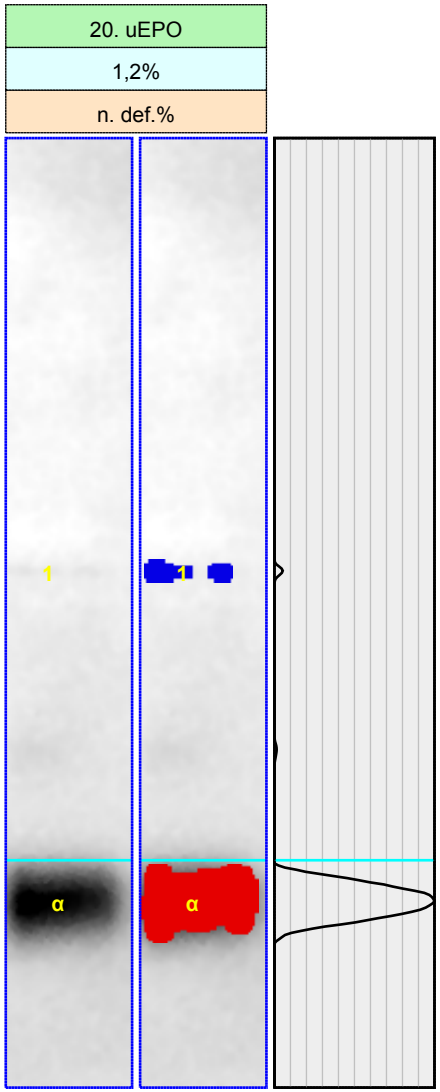
GASepo Analysis Report

Session: Analysis 0291_SAR_6sec_annotation.tif 2014-05-30
Image File: 0291_SAR_6sec_annotation.tif
Operator: Evelyn

Laboratory: Manfred Donike Institut
Date of Analysis: 30.05.2014
12:42



Lane #20: uEPO									
Name	Comment	Cent X	Cent Y	Cent Z	Max X	Max Y	Max Z	Volume Abs	Volume nMax
1		20,1	205,2	239,87	9	205	645,22	69801,7	1,2
α		24,8	361,9	3370,38	9	365	7755,08	5625164,0	100,0

2.1.2

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DSHS KÖLN INSTITUT FÜR BIOCHEMIE	**Aliquot Chain of Custody Dokumentation**	Seite 1 / 1

Ultrafiltration [Urin] #257 — Fr, 30. May 2014

	Labor#	Intern#	Prep	Info/Ergebnis
1	H2014 007 397 *1	5949	UF	Confirmation; 15ml... (s. DB)
[redacted]				
3	**neg QC Urin**	5947	UF	
4	**pos QC [BRP] Urin**	5948	UF	

Datum	Zeit	Bewegung der Aliquote	Aliquotiertes Volumen pro Probe	Visa
30.5.14	siehe	unten / siehe	oben	CDP

11[50]
1. Zugabe von Complete Protease Inhibitor und Tris-Puffer
2. Überprüfung pH-Wert
3. Zentrifugation
4. Zugabe von Complete Protease Inhibitor und Tris-Puffer
5. 2-mal Zentrifugation in verschiedenen Einheiten
6. Aliquotierung des Retentats; Gesamtvolumen notieren
15[20]
7. Lagerung in Raum 717 bei -20°C

ACC: UF IAP SOP: HS1111 Freigabe: 01.03.2013 ESaM r.e.d v1.0 2013

*1 30.5.14 7397 10^{35} 721a → 717, 12^{30} 717 → 721a

*2 30.5.14 6637 10^{35} 715 → 717, 11^{35} 717 → 715

DSHS KÖLN INSTITUT FÜR BIOCHEMIE	Aliquot Chain of Custody Dokumentation	Seite 1 / 2

IEF-PAGE #65 **Mo, 02. Jun 2014**

	Labor#	Intern#	Prep	Info/Ergebnis
[redacted]				
3	**Mix 800/8**	3778		ok
4	**pos QC [BRP] Urin**	5948	UF	ok
5	**Mix 800/8**	3778		ok
[redacted]				
7	**H2014 007 397**	5949	UF	Susp
8	**Mix 800/8**	3778		ok
9	**neg QC Urin**	5947	UF	ok
10	**NIBSC**	3573		ok
[redacted]				

IEF-PAGE #65 — Mo, 02. Jun 2014

30.5

Vorbereitung

14:00 — 1. Gel gießen — MK

15-30 — 2. Inkubation auf ELISA-Wells — CbO

7.6

IEF und 1. Blot

3. Präfokussierung — MK
4. Proben denaturieren
5. Proben und Standards auf das Gel auftragen
6. IEF starten
7. Gel nach der Fokussierung äquilibrieren
8. 1. Western Blot

12:29 — 9. Membran mit Reducing Puffer inkubieren

10. Waschen

14:30 — 11. Blockieren der Membran

12. Waschen

15:30 — 13. Inkubation mit 1. Antikörper

2. Blot

14. Waschen
15. 2. Western Blot — MK

3.6

8:53 — 16. Blockieren der Membran

17. Waschen — M

9:32 — 18. Inkubation mit 2. Antikörper

19. Waschen

12:06 — 20. Inkubation mit Streptavidin-Peroxidase — MK

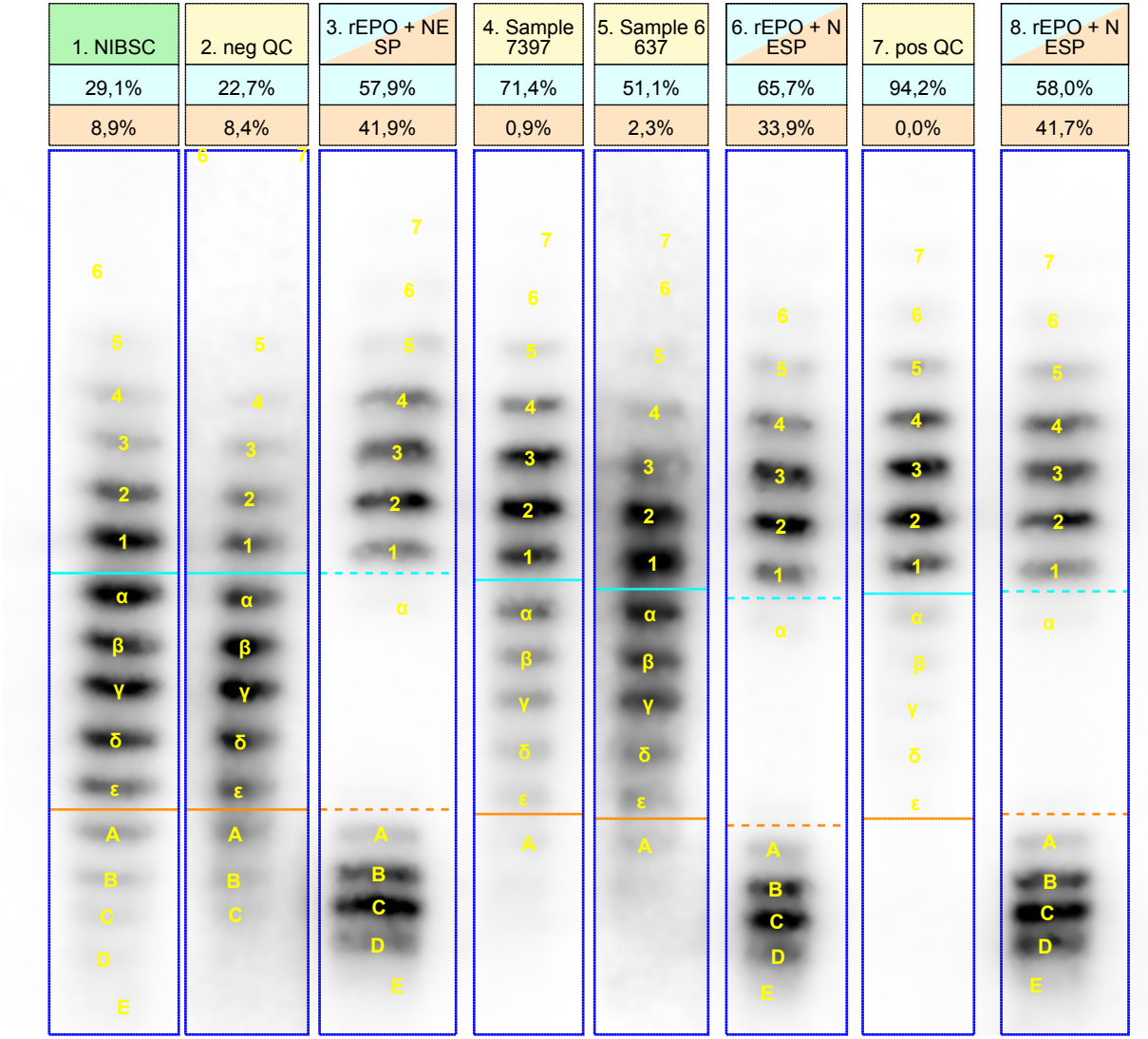
21. Waschen

14:23 — 22. Detektion — MZ

GASepo Analysis Report

Session: Analysis 0065_IEF_2sec.tif 2014-06-03
Image File: 0065_IEF_2sec.tif
Operator: pr

Laboratory: Manfred Donike Institut
Date of Analysis: 03.06.2014
14:32

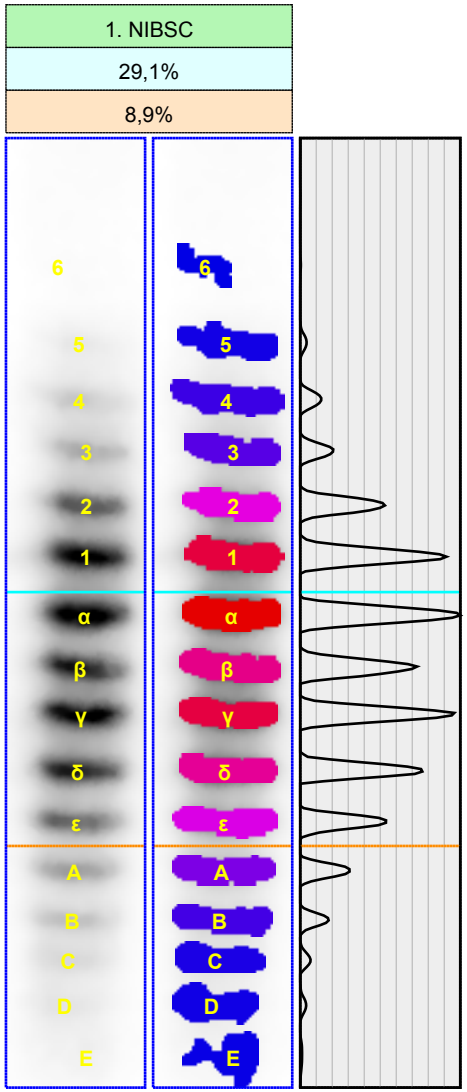


2.1.2

GASepo Analysis Report

Session: Analysis 0065_IEF_2sec.tif 2014-06-03
Image File: 0065_IEF_2sec.tif
Operator: pr

Laboratory: Manfred Donike Institut
Date of Analysis: 03.06.2014
14:32



Lane #1: NIBSC									
Name	Comment	Cent X	Cent Y	Cent Z	Max X	Max Y	Max Z	Volume Abs	Volume nMax
6		21,2	51,8	37,60	19	52	149,32	8120,7	0,3
5		29,8	83,1	253,50	26	83	793,78	110778,4	4,0
4		30,0	106,4	741,06	26	106	2182,04	360895,8	13,0
3		32,9	127,5	1317,04	31	128	3491,12	526816,5	19,0
2		33,0	149,8	3501,99	24	149	7914,97	1414802,0	51,1
1		32,7	170,7	5554,18	29	171	13341,78	2393849,0	86,5
α		32,1	194,8	6071,50	38	196	14339,20	2768602,0	100,0
β		30,3	216,2	4527,92	26	215	11145,99	1951533,0	70,5
γ		30,7	235,4	5756,63	35	237	14893,02	2371732,0	85,7
δ		29,3	258,4	4703,97	20	258	10257,15	1862771,0	67,3
ε		28,8	279,6	3162,64	20	279	7371,82	1318822,0	47,6
A		28,0	299,6	1820,81	25	300	4347,31	759276,4	27,4
B		27,2	319,7	1008,28	25	320	2500,16	405327,7	14,6
C		25,5	336,0	419,13	33	337	947,26	163042,9	5,9
D		24,0	354,6	243,69	19	355	604,49	100645,4	3,6
E		32,9	375,7	132,46	33	372	392,99	52587,9	1,9

2.1.2

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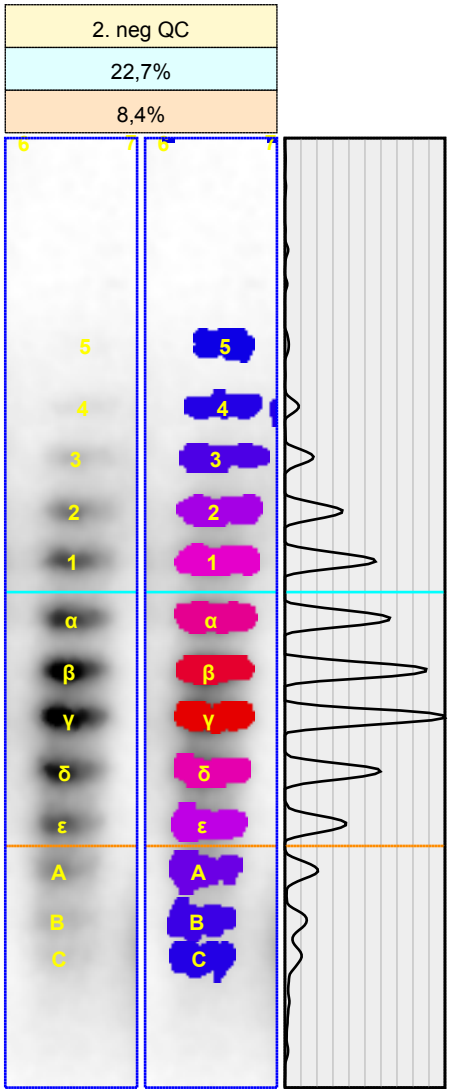
GASepo Analysis Report

Session: Analysis 0065_IEF_2sec.tif 2014-06-03
Image File: 0065_IEF_2sec.tif
Operator: pr

Laboratory: Manfred Donike Institut
Date of Analysis: 03.06.2014
14:32



Lane #2: neg QC									
Name	Comment	Cent X	Cent Y	Cent Z	Max X	Max Y	Max Z	Volume Abs	Volume nMax
7		51,5	0,5	0,00	50	0	0,00	0,0	0,0
6		7,5	1,0	1,06	8	1	5,77	10,6	0,0
5		32,7	83,9	56,16	38	86	157,73	15948,4	2,9
4		31,8	109,3	133,72	31	109	317,46	42656,8	7,7
3		28,9	130,3	256,05	25	130	780,22	92946,3	16,7
2		28,2	152,3	538,08	26	153	1679,90	200167,3	36,0
1		27,6	172,4	812,93	23	173	2315,45	309725,2	55,7
α		27,0	196,2	1027,37	22	197	2711,42	381152,2	68,6
β		26,1	217,4	1528,72	24	218	3920,51	499890,6	90,0
γ		26,0	236,7	1569,65	21	237	4526,91	555657,4	100,0
δ		24,3	258,9	1003,28	19	259	2930,49	344123,8	61,9
ε		23,4	280,4	624,23	20	281	1731,49	232212,4	41,8
A		21,9	299,5	341,91	21	299	1046,02	130267,9	23,4
B		21,2	320,2	202,31	18	321	536,59	72021,8	13,0
C		22,1	335,2	124,44	19	335	354,30	43180,9	7,8

2.1.2

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GASepo Analysis Report

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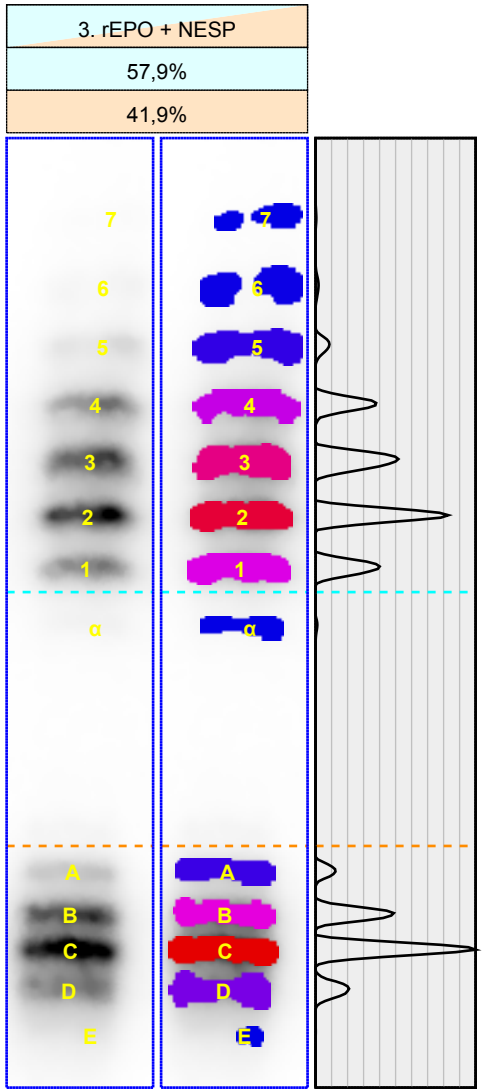
Operator: pr

Laboratory: Manfred Donike Institut
Date of Analysis: 03.06.2014
14:32



Lane #3: rEPO + NESP									
Name	Comment	Cent X	Cent Y	Cent Z	Max X	Max Y	Max Z	Volume Abs	Volume nMax
7		42,8	31,9	80,49	48	31	192,51	19318,8	0,5
6		39,5	60,2	246,27	51	59	709,68	111065,8	2,8
5		39,3	84,4	848,85	49	84	2553,73	425276,0	10,8
4		36,3	108,4	3753,54	40	108	10520,45	1692849,0	42,9
3		34,2	131,7	5827,68	43	130	15271,45	2814771,0	71,4
2		33,3	154,0	8035,28	42	154	25052,83	3463205,0	87,8
1		32,4	175,4	4132,35	39	175	10201,79	1896749,0	48,1
α		36,4	199,5	158,58	44	200	429,66	39170,2	1,0
A		27,2	299,7	1419,96	37	300	3116,95	505505,6	12,8
B		26,1	317,3	5143,48	35	318	12161,96	2041962,0	51,8
C		26,2	331,8	8941,78	32	332	35433,26	3943325,0	100,0
D		25,5	348,3	2287,60	34	350	5867,69	1043145,0	26,5
E		34,2	366,6	23,69	35	365	116,60	1658,3	0,0

2.1.2

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GASepo Analysis Report

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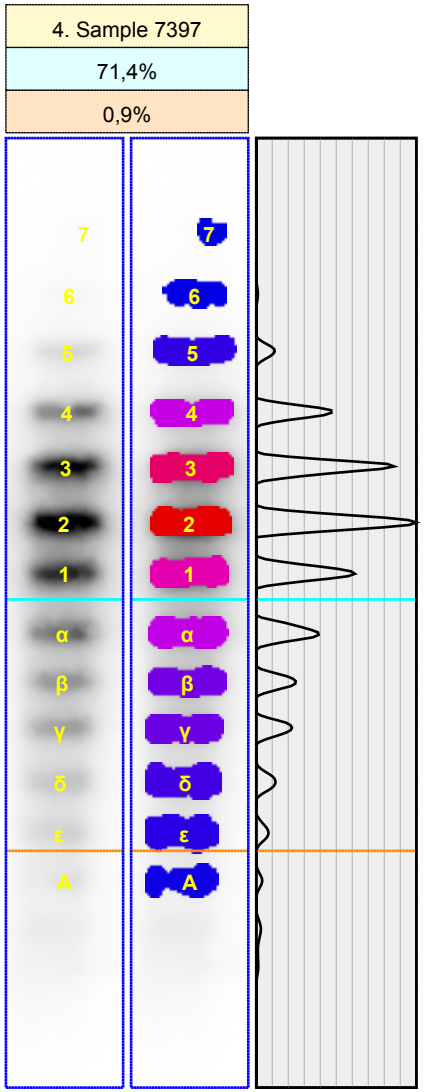
Operator: pr

Laboratory: Manfred Donike Institut
Date of Analysis: 03.06.2014
14:32



Lane #4: Sample 7397

Name	Comment	Cent X	Cent Y	Cent Z	Max X	Max Y	Max Z	Volume Abs	Volume nMax
7		32,0	38,1	46,39	31	37	112,10	4824,7	0,2
6		25,9	63,4	111,13	26	63	260,02	27560,6	0,9
5		25,2	86,8	920,53	27	87	2277,06	320345,4	10,9
4		24,9	111,7	3756,57	32	111	9891,67	1262206,0	43,1
3		24,5	134,2	6385,53	31	134	15685,17	2279634,0	77,9
2		23,8	156,9	8062,24	16	157	19281,30	2926593,0	100,0
1		23,9	177,6	5097,49	28	177	11402,15	1809608,0	61,8
α		23,1	202,0	3281,83	30	203	9108,64	1240532,0	42,4
β		23,0	222,2	2135,97	26	222	5108,72	734773,2	25,1
γ		22,1	241,2	1918,43	29	241	4341,64	682959,5	23,3
δ		22,2	263,2	1071,52	30	263	2523,90	421108,5	14,4
ε		21,7	283,9	672,50	27	284	1813,83	262275,0	9,0
A		24,1	303,7	333,28	28	304	1125,08	107648,7	3,7

2.1.2

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GASepo Analysis Report

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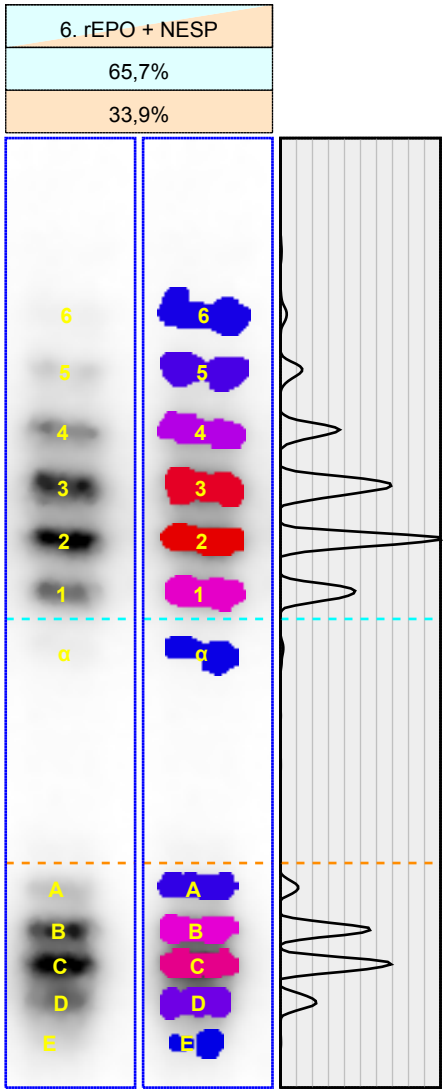
Image File: 0065_IEF_2sec.tif
Operator: pr

Laboratory: Manfred Donike Institut
Date of Analysis: 03.06.2014
14:32



Lane #6: rEPO + NESP									
Name	Comment	Cent X	Cent Y	Cent Z	Max X	Max Y	Max Z	Volume Abs	Volume nMax
6		24,8	71,4	165,47	14	71	390,20	79919,6	5,0
5		24,2	94,8	602,94	17	93	1615,44	252631,1	15,8
4		23,4	119,2	1691,85	16	118	4569,08	629367,4	39,4
3		23,6	142,2	3668,58	32	142	8881,31	1467431,0	91,9
2		24,0	164,0	4711,39	17	163	12830,22	1597161,0	100,0
1		23,0	185,6	2389,97	15	184	5798,95	898628,4	56,3
α		24,0	209,8	119,74	13	207	287,05	35682,2	2,2
A		20,7	306,4	564,09	23	307	1297,32	171483,7	10,7
B		21,7	323,7	2738,36	27	323	7428,06	862581,9	54,0
C		22,3	338,1	3498,47	30	339	8068,61	1116013,0	69,9
D		22,8	353,3	1188,21	30	354	3142,64	387356,2	24,3
E		18,0	369,5	21,82	14	370	164,68	3775,7	0,2

2.1.2

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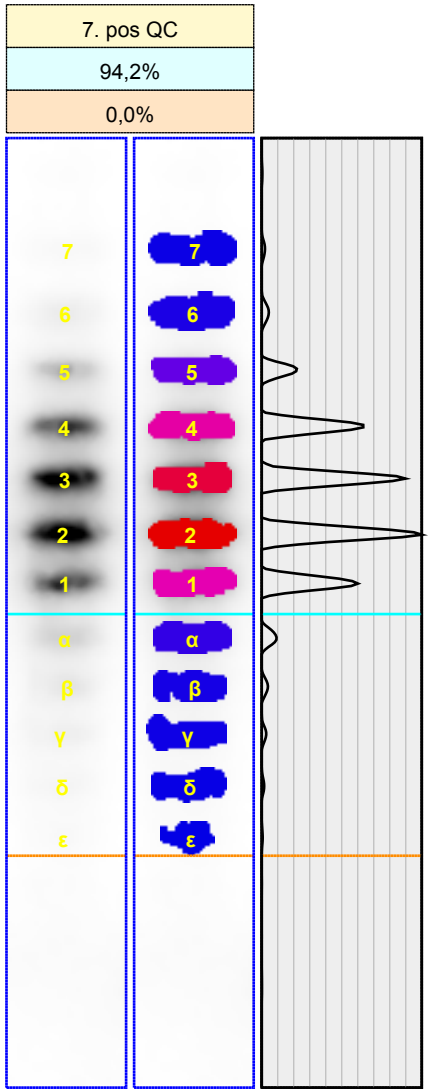
GASepo Analysis Report

Session: Analysis 0065_IEF_2sec.tif 2014-06-03
Image File: 0065_IEF_2sec.tif
Operator: pr

Laboratory: Manfred Donike Institut
Date of Analysis: 03.06.2014
14:32



Lane #7: pos QC									
Name	Comment	Cent X	Cent Y	Cent Z	Max X	Max Y	Max Z	Volume Abs	Volume nMax
7		25,0	45,0	187,02	22	45	424,19	77428,3	2,5
6		24,0	71,0	429,97	26	71	1097,92	187898,3	6,1
5		23,7	94,5	1941,21	24	94	6794,66	677483,7	21,9
4		23,6	117,5	5715,85	25	117	15525,31	1983398,0	64,3
3		23,8	139,0	8423,36	18	139	21464,12	2678629,0	86,8
2		23,1	161,6	8622,07	22	161	22434,60	3086702,0	100,0
1		23,9	181,7	5475,72	20	183	17430,76	1894600,0	61,4
α		23,9	204,1	932,91	29	204	2241,94	340512,8	11,0
β		24,9	224,3	417,07	27	224	1308,19	143471,3	4,6
γ		21,9	243,6	272,31	28	244	692,19	97760,4	3,2
δ		22,8	264,7	161,80	25	265	404,98	52909,4	1,7
ε		23,3	285,9	98,70	23	286	302,22	20528,6	0,7

2.1.2

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GASepo Analysis Report

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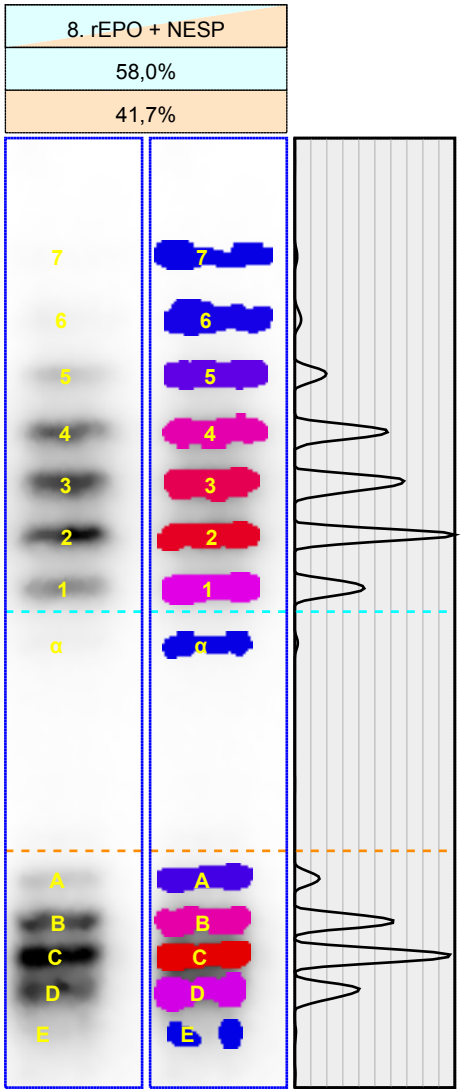
14:32



Lane #8: rEPO + NESP									
Name	Comment	Cent X	Cent Y	Cent Z	Max X	Max Y	Max Z	Volume Abs	Volume nMax
7		21,3	47,8	85,24	13	47	213,41	36482,9	1,6
6		22,8	73,3	223,16	15	74	654,92	110912,3	5,0
5		24,5	96,3	1038,52	20	96	2721,11	465255,0	21,0
4		24,5	119,9	3264,36	18	121	7860,94	1380824,0	62,2
3		24,7	140,9	4203,42	28	141	8764,13	1820079,0	82,0
2		25,2	162,2	5061,85	26	162	16449,30	2050048,0	92,4
1		23,6	183,8	2496,73	21	184	5821,46	1088576,0	49,0
α		20,9	206,5	130,60	13	207	350,90	37874,7	1,7
A		21,3	302,7	916,89	10	303	2028,66	329163,3	14,8
B		21,6	320,3	3771,86	33	319	8821,41	1403130,0	63,2
C		20,4	334,4	5810,33	8	335	13137,17	2219546,0	100,0
D		19,4	349,1	2459,53	23	348	6722,65	1025623,0	46,2
E		15,4	366,1	69,24	8	365	350,59	14194,3	0,6

2.1.2

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DSHS KÖLN INSTITUT FÜR BIOCHEMIE	**Aliquot Chain of Custody Dokumentation**	Seite 1 / 2

Ultrafiltration [Urin] #260 — Mi, 04. Jun 2014

	Labor#	Intern#	Prep	Info/Ergebnis
1	**pos QC [BRP] Urin**	5996	UF	
2	**neg QC Urin**	5997	UF	
3	**7 397** * 5.4.	5998	UF	Confirmation; 15ml... (s. DB)

[redacted]

Datum	Zeit	Bewegung der Aliquote	Aliquotiertes Volumen pro Probe	Visa
4.6.14	10^{40}	702 → 717	15 ml	CGP

* 30.5.14 10^{35} 721a → 717
12^{30} 717 → 721a Vol
15 ml

Ultrafiltration [Urin] #260 — Mi, 04. Jun 2014

11⁰⁰

1. Zugabe von Complete Protease Inhibitor und Tris-Puffer
2. Überprüfung pH-Wert
3. Zentrifugation
4. Zugabe von Complete Protease Inhibitor und Tris-Puffer
5. 2-mal Zentrifugation in verschiedenen Einheiten
6. Aliquotierung des Retentats; Gesamtvolumen notieren
7. Lagerung in Raum 717 bei -20°C

16⁰⁰

ACC: UF IAP SOP: HS1111 Freigabe: 01.03.2013 ESaM r.e.d v1.0 2013

DSHS KÖLN INSTITUT FÜR BIOCHEMIE	**Aliquot Chain of Custody Dokumentation**	Seite 1 / 1

SAR-PAGE single blot #296 — Do, 05. Jun 2014

	Labor#	Intern#	Prep	Info/Ergebnis
[redacted]				
4	**pos QC [BRP] Urin**	5996	UF	ok
5	**neg QC Urin**	5997	UF	ok
6	**ESA-Mix**	5944		ok
[redacted]				
8	H2014 007 **397**	5998	UF	suspicious
[redacted]				
10	**ESA-Mix**	5945		ok
11	**NIBSC**	5790		ok

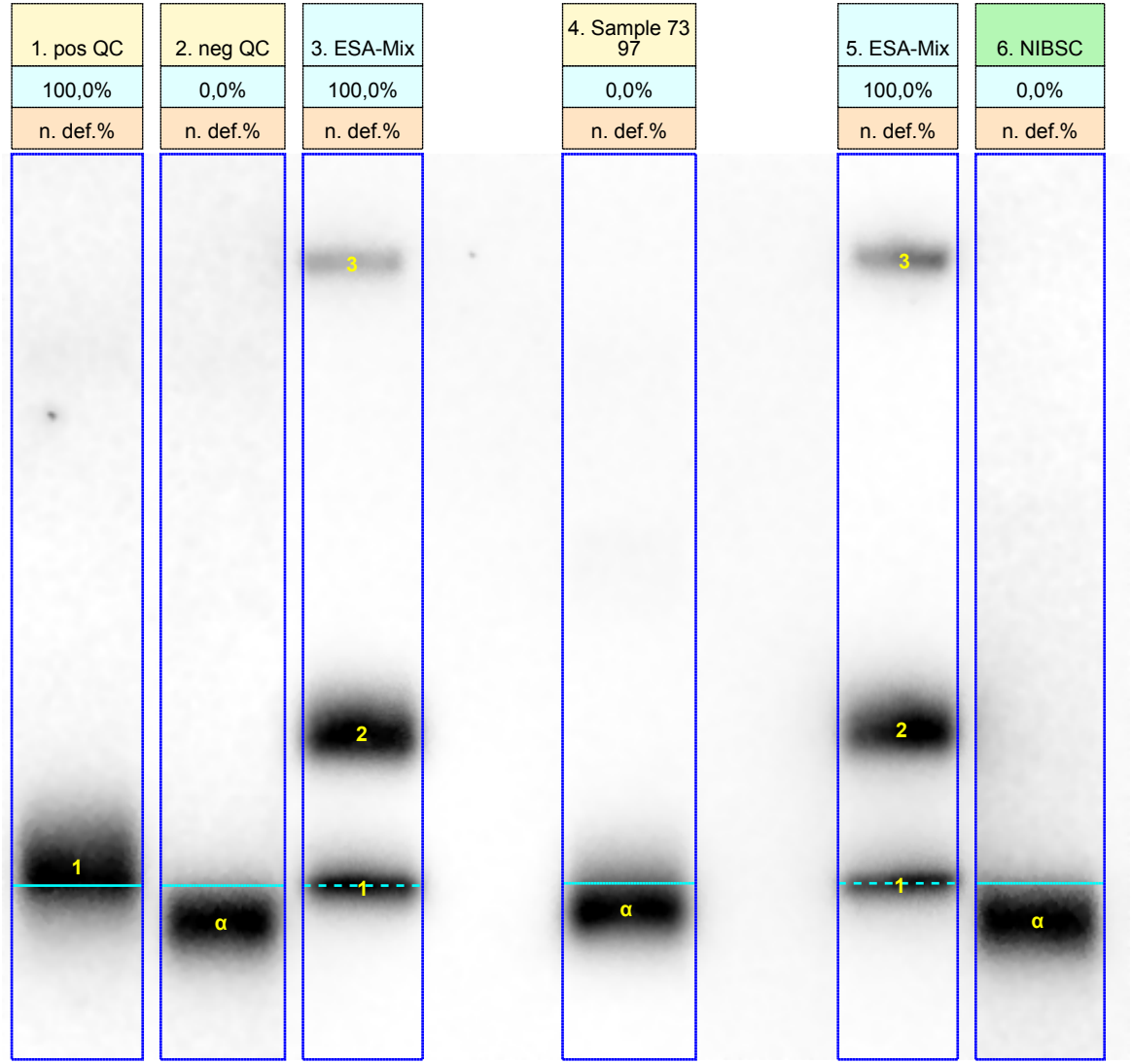
4.6.	16:35	1. Inkubation auf ELISA-Wells	MB
5.6.		2. Laufpuffer vorbereiten	
		3. Dynepo- und NIBSC-Standard vorbereiten	MB
		4. ELISA Proben waschen, mit MasterMix versetzen	
		5. ELISA Proben und Standards denaturieren	
		6. Proben mit internen Standards versetzen	
		7. Gelkammer vorbereiten, Proben auftragen	
	V	8. Elektrophorese	
	V	9. Western Blot	
	13:55	10. Blocken	
	15:04	11. Reduzieren	
	15:37	12. Inkubation 1.Antikörper	MB MB
		13. Waschen mit PBS	
	19:22	14. Inkubation 2.Antikörper MB	
		15. Waschen mit PBS	
6.6.	10:28	16. Detektion MB	

ACC: SAR SB SOP: HS2005 Freigabe: 01.03.2013 ESaM r.e.d v1.0 2013

GASepo Analysis Report

Session: Analysis 0296_SAR_8sec.tif 2014-06-06
Image File: 0296_SAR_8sec.tif
Operator: pr

Laboratory: Manfred Donike Institut
Date of Analysis: 06.06.2014
10:52



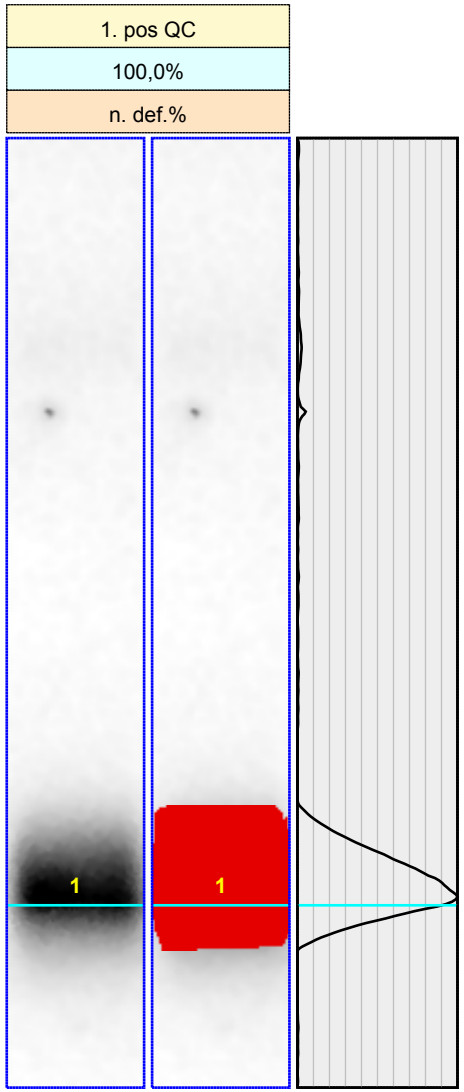
COLORLEGEND: EPOαβ DARBEPOETINα

2.1.2

GASepo Analysis Report

Session: Analysis 0296_SAR_8sec.tif 2014-06-06
Image File: 0296_SAR_8sec.tif
Operator: pr

Laboratory: Manfred Donike Institut
Date of Analysis: 06.06.2014
10:52



Lane #1: pos QC									
Name	Comment	Cent X	Cent Y	Cent Z	Max X	Max Y	Max Z	Volume Abs	Volume nMax
1		29,0	314,4	4235,89	17	320	10256,34	14385070,0	100,0

2.1.2

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GASepo Analysis Report

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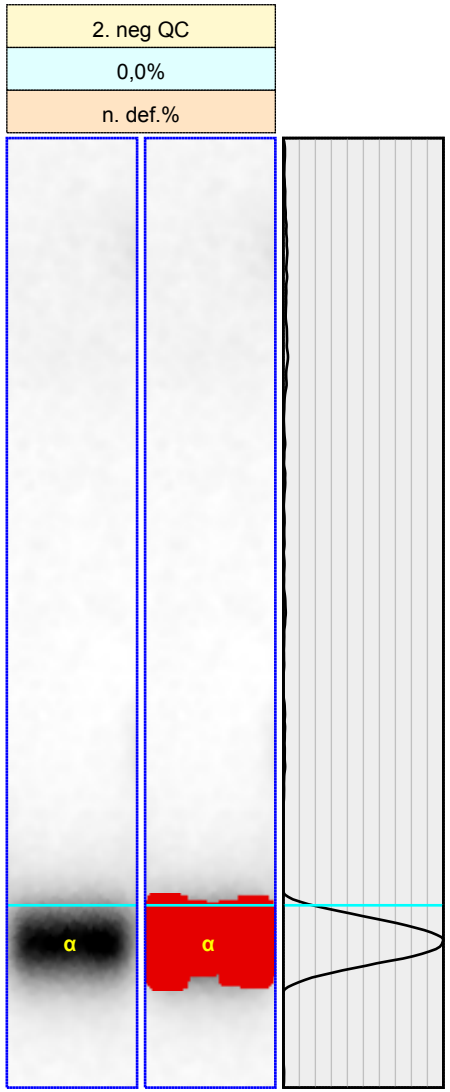
Operator: pr

Laboratory: Manfred Donike Institut
Date of Analysis: 06.06.2014
10:52



Lane #2: neg QC									
Name	Comment	Cent X	Cent Y	Cent Z	Max X	Max Y	Max Z	Volume Abs	Volume nMax
α		26,7	338,8	4466,20	40	339	9819,22	9061918,0	100,0

2.1.2

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GASepo Analysis Report

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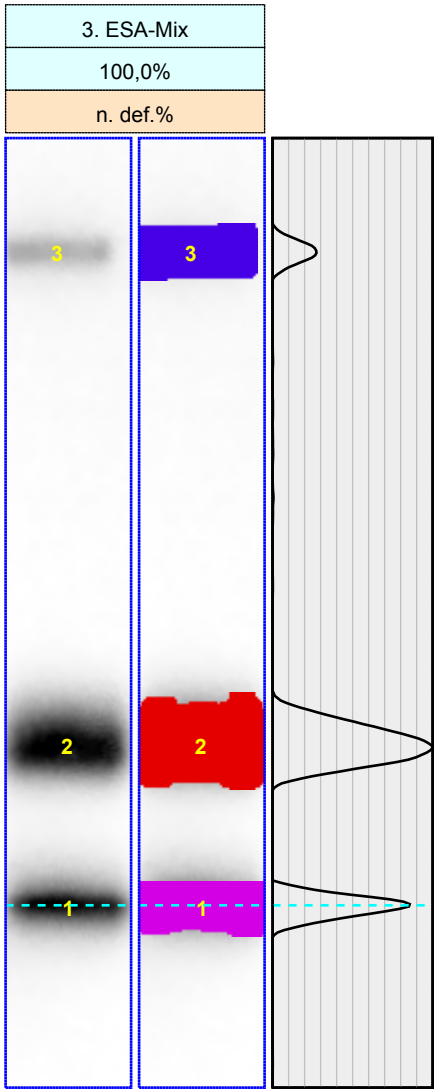
Laboratory: Manfred Donike Institut
Date of Analysis: 06.06.2014
10:52



Lane #3: ESA-Mix									
Name	Comment	Cent X	Cent Y	Cent Z	Max X	Max Y	Max Z	Volume Abs	Volume nMax
3		21,8	47,5	3116,55	10	48	7555,96	3502997,0	15,5
2		26,0	255,5	11645,74	40	259	25047,47	22534510,0	100,0
1		26,5	323,9	9120,45	10	323	20955,76	10452040,0	46,4

2.1.2

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GASepo Analysis Report

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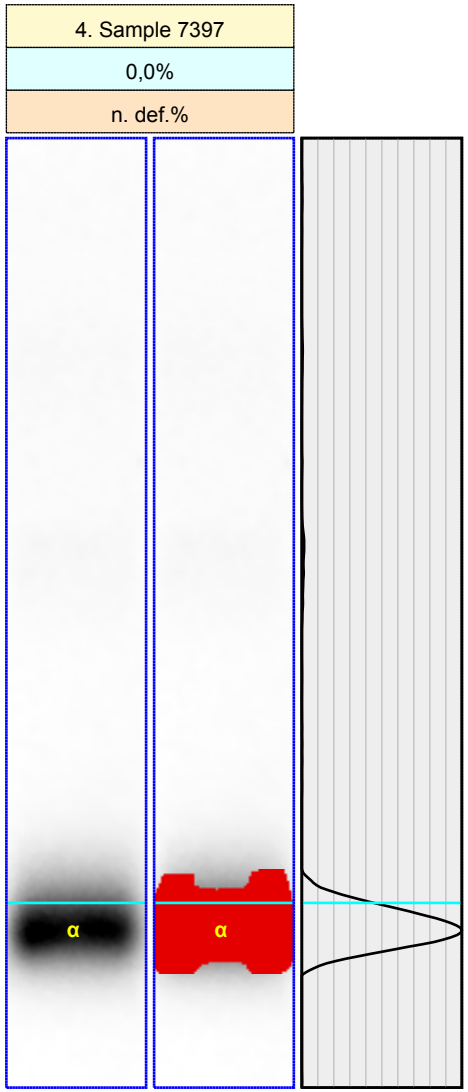
Operator: pr

Laboratory: Manfred Donike Institut
Date of Analysis: 06.06.2014
10:52



Lane #4: Sample 7397

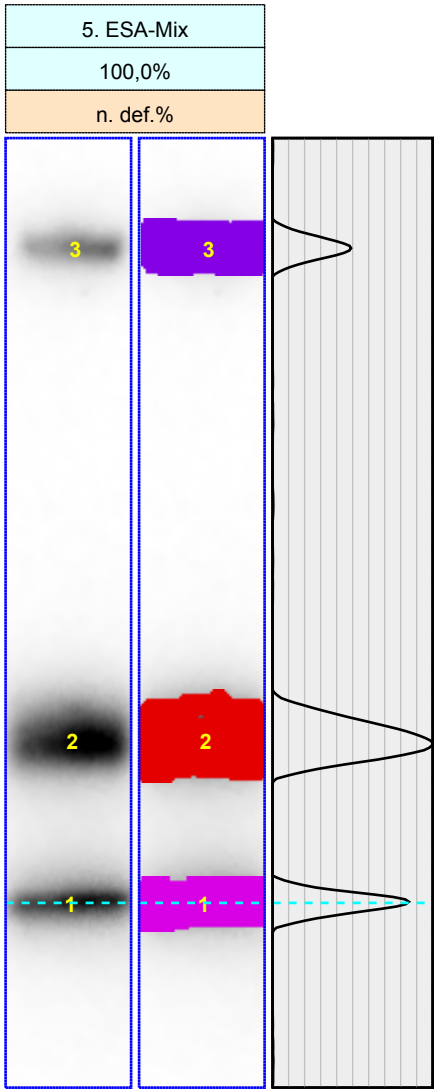
Name	Comment	Cent X	Cent Y	Cent Z	Max X	Max Y	Max Z	Volume Abs	Volume nMax
α		28,2	332,8	10446,40	15	336	26481,44	23128340,0	100,0

2.1.2

GASepo Analysis Report

Session: Analysis 0296_SAR_8sec.tif 2014-06-06
Image File: 0296_SAR_8sec.tif
Operator: pr

Laboratory: Manfred Donike Institut
Date of Analysis: 06.06.2014
10:52



Lane #5: ESA-Mix									
Name	Comment	Cent X	Cent Y	Cent Z	Max X	Max Y	Max Z	Volume Abs	Volume nMax
3		29,5	45,9	4524,91	41	46	14728,47	5366544,0	29,2
2		28,2	253,6	10036,05	36	255	24323,77	18386040,0	100,0
1		27,4	322,4	7645,32	34	321	20202,00	8662143,0	47,1

2.1.2

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GASepo Analysis Report

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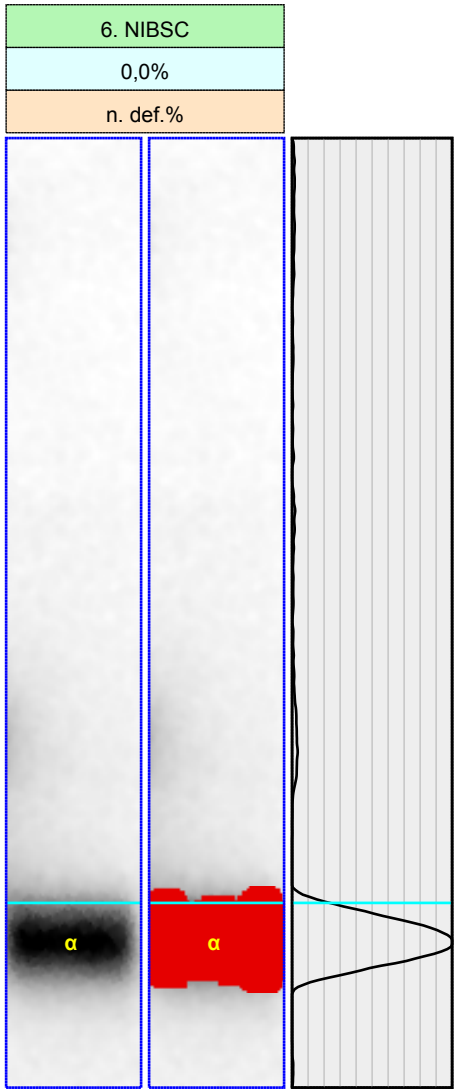

Lane #6: NIBSC									
Name	Comment	Cent X	Cent Y	Cent Z	Max X	Max Y	Max Z	Volume Abs	Volume nMax
α		27,4	338,3	3863,08	44	339	8233,42	8807814,0	100,0

2.1.2

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DEUTSCHE SPORTHOCHSCHULE KÖLN INSTITUT FÜR BIOCHEMIE	**QM-Handbuch**	Id.-Code: L16-2-4
WADA AKKREDITIERTES LABOR FÜR DOPINGANALYTIK	**Check-Liste zum Bericht positiver A-Proben**	Seite 1

Labor Nr.:	**7397**	**Substanz:**	**rEPO**
Code Nr.:	**6050816**	**Scr. Abtlg.:**	**11**
Verband:	**ISC**		

	1	2
Überprüfung der analytischen Ergebnisse / Berechnungen	M	RK
Vollständigkeit der Dokumentation	M	RK

Überprüfung Chain of Custody

pH-Wert ≤ 8	PM	RK
Dichte: 1,015 g/ml	PM	RK
Übereinstimmung der Codenr. A / B mit Original-Probenbegleitzettel	PM	RK
Sicherung von A / B-Probe in Positiven-Kühltruhe (R 715)	PM	RK

Überprüfung Eingaben LIMS

Richtigkeit der Codenummer	M	RK
Richtigkeit des Substanznamens	PM	RK

Bemerkungen:

Name 1	Datum	Unterschrift
P. Rehlen	6.6.2014	P.
R. Kempkes	06.06.14	R.

Überprüfung Eingaben ADAMS

Richtigkeit der Codenummer	✓	✓
Richtigkeit des Substanznamens	✓	✓

1. Name / Datum / Unterschrift: KLOSE 11.06.14

2. Name / Datum / Unterschrift: Kempkes, Raoul 11.06.14 R.

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Institut für Biochemie
Deutsche Sporthochschule Köln
Am Sportpark Müngersdorf 6
50933 Köln

2014/06/10

Re: Experts opinion on sample 7397

Laboratory request by:	Cologne
Sample Code:	7397
Files submitted:	Analysis 0065_IEF_2sec.tif 2014-06-03.ges.pdf, Analysis 0291_SAR_6sec_annotation.tif 2014-05-30.ges.pdf, Analysis 0296_SAR_8sec.tif 2014-06-06.ges.pdf; 0065_IEF_2sec.tif, 0291_SAR_6sec_annotation.tif, 0296_SAR_8sec.tif
Date of submission:	6.6.2014

Dear Prof. Schänzer,

after reviewing the submitted files according to the lane description we conclude that the data from IEF PAGE analysis show a profile for the entire sample, which departs significantly from the profiles known to be of endogenous origin.

The sample complies with the positivity criteria as described in the current TD2013EPO.

Complementary analyses of the sample using SAR-PAGE confirm the presence of recombinant erythropoietin.

Due to the fact, that the sample does not show any sign of instability as shown by SAR-PAGE, a conclusion, that the sample contains recombinant erythropoietin is justified.

Yours sincerely,

Christian Reichel

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WADA akkreditiertes Labor
Akkreditierung nach ISO/IEC 17025:2005
D-PL-13340-01-00

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Prof. Dr. W. Schänzer * Am Sportpark Müngersdorf 6 * 50933 Köln

Irish Sports Council
Top Floor, Block A
Dr. Una May
CONFIDENTIAL
Westend Office Park /
15 Dublin
Ireland

Cologne, 11.06.2014

Analytical Report S2014 3705-1

A-Sample code:	**6050816**
Laboratory code	7397
Collection site	Not indicated
Collection date	20.05.2014
Collection authority	Irish Sports Council
Date of receipt	21.05.2014
TMC	576-038-14
Sex	M
Sport	Athletics
Discipline	Track
Matrix	Urine
Seals / integrity	Intact
Type of test	Out of competition
Special analysis	EPO

The sample has been analysed according to the 2014 Prohibited List of the World Anti-Doping-Agency (WADA). Analyses are based on accredited mass spectrometric and/or immunological methods.

Adverse analytical finding

Substance:
recombinant erythropoietin
(S2. Peptide Hormones, Growth Factors and Related Substances)

SOP:
Detection of various erythropoiesis stimulating agents (ESAs) in human urine and blood by isoelectric focussing and immunoblotting.

Detection of various erythropoiesis stimulating agents (ESAs) in human urine and blood by SDS- and SAR-PAGE respectivly and immunoblotting.

Dr. H. Geyer
(Deputy Head of Institute)

The results contained herein refer to the items tested.

All above mentioned samples (A+B) will be retained frozen up to 3 months after date of analytical report and will be destroyed afterwards without any further notice (WADA ISL, 5.2.2.6). If you are interested in a long-term-storage (with costs) please contact us in writing within 4 weeks (exemptions see WADA ISL, 5.2.2.8).

Results reported: WADA-AMA via ADAMS

Copy: IAAF

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Analysis Result Record / *Rapport de Résultat d'Analyse*

CONFIDENTIAL / *CONFIDENTIEL*

ISC		**ISC**	
SCA Contact:	**Una May**	**TA Contact:**	**Una May**
Address	**Top Floor, Block A West End Office Park Blanchardstown Dublin IRELAND 15**	**Address**	**Top Floor, Block A West End Office Park Blanchardstown Dublin IRELAND 15**

Test result / *Résultat du contrôle*	:	**AAF - Adverse Analytical Finding**
Sample Code / *Code d'échantillon*	:	**6050816**
Sample A/B / Échantillon A/B	:	**A**
Specific Gravity / *Gravité spécifique*	:	**1.015**
pH	:	**N/A**
Lab Reference # / *No de référence de labo*	:	**N/A**
Test Mission Code / Code de mission	:	**576-038-14**
Type of Test / *Nature du contrôle*	:	**Out competition**
Sport-Discipline / *Sport-Discipline*	:	**Athletics - Track**
Collection Date / Date du prélèvement	:	**N/A**
Collection Site / Lieu du prélèvement	:	**N/A**
Date of Receipt / *Date de réception*	:	**21-May-2014**
Sample Type / *Nature de l'échantillon*	:	**Urine**
Gender / *Sexe*	:	**M**

Additional analysis(es) performed / Analyse additionelle: **EPO (including recombinant EPO's and analogues)**

Analysis Details / Explanation / Opinion
Détails de l'analyse / Explication / Opinion:
N/A

The sample was analysed using Laboratory test method(s)/
L'échantillon a été examiné selon les méthodes d'analyse du laboratoire:
N/A

Results / Résultats:
The analysis of the sample identified above has shown the presence of /
L'analyse de l'échantillon mentionné ci-dessus par les méthodes du laboratoire a révélé la présence de:

AAF - Adverse Analytical Finding

- S2. Peptide Hormones, Growth Factors and Related Substances/erythropoietin (EPO).

Details concerning Finding:
N/A

Cc: **WADA-AMA, ISC, IAAF**

Lab results status / Etat du résultat de laboratoire: **Submitted**		Modified on / Mis à jour le: **11-Jun-2014**
Submitted by / Soumis par: **Klose, Christiane**		Printed on / Imprimé le: **20-Jun-2014**
Submitted on / Soumis le: **11-Jun-2014**		Printed by / Imprimé par : **Sagioglou, Doris**

Adams Lab Form Rev 3.0.2 01/2014