

Summary statistics - quantitative results

(Groups: measurement principle, manufacturer of kit)

Filter: minimal size of groups n = 5

EQA round: E13/18 - Hormones 1

Dead line: 07.08.2018

Test		Comparability						Traceability												
		AV	U _{AV}	D _{max}	LL	UL	N _{eva}	N _{suc}	S _{rel}	AV	U _{AV}	D _{max}	LL	UL	N _{eva}	N _{suc}	S _{rel}			
RoM = robust average SD = standard deviation CV = coefficient of variation N _{tot} = total number of participants N _{out} = number of results excluded before calculation		AV = assigned value CRV = certified reference value RV = reference value CVE = consensus value from experts CVP = consensus value from all participants CVPG = consensus value from participants groups U _{AV} = expanded uncertainty of the assigned value (k = 2)						D _{max} = acceptable percent difference LL = lower limit UL = upper limit N _{eva} = number of evaluated participants N _{suc} = number of successful participants S _{rel} = success (relative)												
[unit]		RoM	SD	CV [%]	N _{tot}	N _{out}														
(121) Total T3								122	114					93%						
Samples and groups		136												136 104 76%						
Sample A		4,13	0,51	12	136		122	120	98%	CRV	4,167	0,044	20%	3,33	5,01	136	122	90%		
(4) LIA (CLIA, CMIA, ECLIA); (1) Abbott		3,67	0,19	5,3	20	0	CVPG	3,67	0,11	15%	3,11	4,23				20				
(4) LIA (CLIA, CMIA, ECLIA); (12) Beckman Coulter		3,39	0,31	9,2	13	0	CVPG	3,39	0,21	15%	2,88	3,9				13				
(4) LIA (CLIA, CMIA, ECLIA); (29) Siemens (DPC)		3,53	0,51	15	8	0	CVPG	3,53	0,39	15%	3	4,06				8				
(4) LIA (CLIA, CMIA, ECLIA); (60) Roche		4,35	0,19	4,5	59	0	CVPG	4,35	0,062	15%	3,69	5,01				59				
(4) LIA (CLIA, CMIA, ECLIA); (179) Siemens (Bayer)		4,52	0,24	5,4	22	0	CVPG	4,52	0,13	15%	3,84	5,2				22				
Other		14 0						0						14						
		2x 1/36, 1x 1/179, 1x 2/26, 1x 2/66, 2x 3/15, 1x 3/82, 1x 4/40, 1x 4/98, 2x 4/149, 2x 4/164						2x 1/36, 1x 1/179, 1x 2/26, 1x 2/66, 2x 3/15, 1x 3/82, 1x 4/40, 1x 4/98, 2x 4/149, 2x 4/164												
Sample B		2,04	0,34	17	136		122	116	95%	CRV	2,049	0,020	20%	1,63	2,46	136	107	79%		
(4) LIA (CLIA, CMIA, ECLIA); (1) Abbott		1,66	0,10	6,1	20	0	CVPG	1,66	0,056	15%	1,41	1,91				20				
(4) LIA (CLIA, CMIA, ECLIA); (12) Beckman Coulter		1,65	0,18	11	13	0	CVPG	1,65	0,12	15%	1,4	1,9				13				
(4) LIA (CLIA, CMIA, ECLIA); (29) Siemens (DPC)		1,57	0,20	13	8	0	CVPG	1,57	0,15	15%	1,33	1,81				8				
(4) LIA (CLIA, CMIA, ECLIA); (60) Roche		2,21	0,12	5,6	59	0	CVPG	2,21	0,040	15%	1,87	2,55				59				
(4) LIA (CLIA, CMIA, ECLIA); (179) Siemens (Bayer)		2,29	0,19	8,2	22	0	CVPG	2,29	0,099	15%	1,94	2,64				22				
Other		14 0						0						14						
		2x 1/36, 1x 1/179, 1x 2/26, 1x 2/66, 2x 3/15, 1x 3/82, 1x 4/40, 1x 4/98, 2x 4/149, 2x 4/164						2x 1/36, 1x 1/179, 1x 2/26, 1x 2/66, 2x 3/15, 1x 3/82, 1x 4/40, 1x 4/98, 2x 4/149, 2x 4/164												
(122) Total T4								95	88					93%						
Samples and groups		110												110 101 92%						
Sample A		136	9,5	7,0	110		95	91	96%	CRV	144,4	1,4	17%	119	169	110	105	95%		
(4) LIA (CLIA, CMIA, ECLIA); (1) Abbott		136	7,0	5,1	15	0	CVPG	136	4,4	13%	118	154				15				
(4) LIA (CLIA, CMIA, ECLIA); (12) Beckman Coulter		125	11	8,9	14	0	CVPG	125	7,3	13%	108	142				14				
(4) LIA (CLIA, CMIA, ECLIA); (29) Siemens (DPC)		133	16	12	7	0	CVPG	133	16	13%	115	151				7				
(4) LIA (CLIA, CMIA, ECLIA); (60) Roche		137	6,9	5,1	43	0	CVPG	137	2,6	13%	119	155				43				
(4) LIA (CLIA, CMIA, ECLIA); (179) Siemens (Bayer)		139	4,8	3,5	16	0	CVPG	139	3,0	13%	120	158				16				
Other		15 0						0						15						
		2x 1/36, 1x 1/60, 1x 2/26, 1x 2/66, 1x 2/149, 1x 3/1, 2x 3/15, 1x 3/82, 1x 4/40, 1x 4/98, 1x 4/149, 2x 4/164						2x 1/36, 1x 1/60, 1x 2/26, 1x 2/66, 1x 2/149, 1x 3/1, 2x 3/15, 1x 3/82, 1x 4/40, 1x 4/98, 1x 4/149, 2x 4/164												
Sample B		250	22	8,9	110		95	89	94%	CRV	261,2	2,9	17%	216	306	110	104	95%		
(4) LIA (CLIA, CMIA, ECLIA); (1) Abbott		264	22	8,2	15	0	CVPG	264	14	13%	229	299				15				

Summary statistics - quantitative results

(Groups: measurement principle, manufacturer of kit)

Filter: minimal size of groups n = 5

EQA round: E13/18 - Hormones 1

Dead line: 07.08.2018

Test	[unit]	Comparability					Traceability																	
		RoM	SD	CV [%]	N _{tot}	N _{out}	AV	U _{AV}	D _{max}	LL	UL	N _{eva}	N _{suc}	S _{rel}	AV	U _{AV}	D _{max}	LL	UL	N _{eva}	N _{suc}	S _{rel}		
(122) Total T4					110							95	88	93%						110	101	92%		
--- Samples and groups ---	[nmol/L]																							
Sample B		250	22	8,9	110							95	89	94%	CRV	261,2	2,9	17%	216	306	110	104	95%	
(4) LIA (CLIA, CMIA, ECLIA); (12) Beckman Coulter		226	15	6,5	14	0	CVPG	226	9,7	13%	196	256	14									14		
(4) LIA (CLIA, CMIA, ECLIA); (29) Siemens (DPC)		256	47	18	7	0	CVPG	256	46	13%	222	290	7									7		
(4) LIA (CLIA, CMIA, ECLIA); (60) Roche		245	14	5,8	43	0	CVPG	245	5,3	13%	213	277	43									43		
(4) LIA (CLIA, CMIA, ECLIA); (179) Siemens (Bayer)		273	14	5,3	16	0	CVPG	273	8,9	13%	237	309	16									16		
Other					15	0							0									15		
								2x 1/36, 1x 1/60, 1x 2/26, 1x 2/66, 1x 2/149, 1x 3/1, 2x 3/15, 1x 3/82, 1x 4/40, 1x 4/98, 1x 4/149, 2x 4/164								2x 1/36, 1x 1/60, 1x 2/26, 1x 2/66, 1x 2/149, 1x 3/1, 2x 3/15, 1x 3/82, 1x 4/40, 1x 4/98, 1x 4/149, 2x 4/164								
(123) TSH					1508							1485	1452	98%								0		
--- Samples and groups ---	[mU/L]																							
Sample A		10,2	1,2	12	1508							1485	1463	99%								0		
(1) RIA (IRMA); (24) B.R.A.H.M.S.		14,1	0,69	4,9	34	0	CVPG	14,1	0,29	14%	12,1	16,1	34											
(1) RIA (IRMA); (36) Immunotech		9,54	0,06	0,70	5	0	CVPG	9,54	0,19	14%	8,2	10,9	5											
(1) RIA (IRMA); (87) Euroimmun		11,2	0,25	2,2	17	0	CVPG	11,2	0,15	14%	9,63	12,8	17											
(1) RIA (IRMA); (146) MEDIPAN Diagnostica		10,8	0,52	4,8	6	0	CVPG	10,8	0,72	14%	9,28	12,4	6											
(1) RIA (IRMA); (214) Demeditec		9,39	0,63	6,7	31	0	CVPG	9,39	0,28	14%	8,07	10,8	31											
(2) EIA (ELISA); (66) DRG		7,68	0,08	1,0	16	0	CVPG	7,68	0,049	14%	6,6	8,76	16											
(3) FIA (FEIA, TRACE); (15) bioMérieux		11,5	0,78	6,8	36	0	CVPG	11,5	0,32	14%	9,89	13,2	36											
(3) FIA (FEIA, TRACE); (25) TOSOH		9,50	0,84	8,8	12	0	CVPG	9,5	0,59	14%	8,17	10,9	12											
(4) LIA (CLIA, CMIA, ECLIA); (1) Abbott		8,11	0,40	4,9	191	0	CVPG	8,11	0,070	14%	6,97	9,25	191											
(4) LIA (CLIA, CMIA, ECLIA); (12) Beckman Coulter		9,25	0,44	4,8	125	0	CVPG	9,25	0,097	14%	7,95	10,6	125											
(4) LIA (CLIA, CMIA, ECLIA); (29) Siemens (DPC)		10,0	0,62	6,2	103	0	CVPG	10	0,15	14%	8,6	11,4	103											
(4) LIA (CLIA, CMIA, ECLIA); (60) Roche		10,8	0,32	3,0	646	0	CVPG	10,8	0,031	14%	9,28	12,4	646											
(4) LIA (CLIA, CMIA, ECLIA); (149) Siemens (Dade)		10,2	0,38	3,7	97	0	CVPG	10,2	0,094	14%	8,77	11,7	97											
(4) LIA (CLIA, CMIA, ECLIA); (164) DiaSorin		12,1	0,83	6,8	22	0	CVPG	12,1	0,43	14%	10,4	13,8	22											
(4) LIA (CLIA, CMIA, ECLIA); (179) Siemens (Bayer)		9,31	0,40	4,3	102	0	CVPG	9,31	0,097	14%	8	10,7	102											
(4) LIA (CLIA, CMIA, ECLIA); (257) Siemens (Bayer) (2)		13,0	0,52	4,0	42	0	CVPG	13	0,20	14%	11,1	14,9	42											
Other					23	0							0											
								1x 1/12, 1x 1/47, 1x 1/59, 1x 1/60, 1x 2/25, 1x 2/26, 1x 2/32, 2x 2/149, 3x 3/1, 1x 3/14, 1x 3/82, 2x 4/24, 4x 4/40, 1x 4/58, 2x 4/98																
Sample B		5,21	0,65	12	1508							1485	1466	99%								0		
(1) RIA (IRMA); (24) B.R.A.H.M.S.		7,37	0,27	3,6	34	0	CVPG	7,37	0,11	14%	6,33	8,41	34											
(1) RIA (IRMA); (36) Immunotech		4,69	0,16	3,5	5	0	CVPG	4,69	0,46	14%	4,03	5,35	5											
(1) RIA (IRMA); (87) Euroimmun		5,76	0,21	3,7	17	0	CVPG	5,76	0,13	14%	4,95	6,57	17											
(1) RIA (IRMA); (146) MEDIPAN Diagnostica		5,66	0,08	1,6	6	0	CVPG	5,66	0,12	14%	4,86	6,46	6											
(1) RIA (IRMA); (214) Demeditec		4,62	0,31	6,6	31	0	CVPG	4,62	0,13	14%	3,97	5,27	31											
(2) EIA (ELISA); (66) DRG		4,22	0,05	1,3	16	0	CVPG	4,22	0,033	14%	3,62	4,82	16											

Summary statistics - quantitative results

(Groups: measurement principle, manufacturer of kit)

Filter: minimal size of groups n = 5

EQA round: E13/18 - Hormones 1

Dead line: 07.08.2018

Test	[unit]	Comparability					Traceability																	
		RoM	SD	CV [%]	N _{tot}	N _{out}	AV	U _{AV}	D _{max}	LL	UL	N _{eva}	N _{suc}	S _{rel}	AV	U _{AV}	D _{max}	LL	UL	N _{eva}	N _{suc}	S _{rel}		
(123) TSH	[mU/L]				1508							1485	1452	98%									0	
Samples and groups																								
Sample B		5,21	0,65	12	1508							1485	1466	99%									0	
(3) FIA (FEIA, TRACE); (15) bioMérieux		5,65	0,40	7,1	36	0	CVPG	5,65	0,16	14%	4,85	6,45		36										
(3) FIA (FEIA, TRACE); (25) TOSOH		4,83	0,41	8,5	12	0	CVPG	4,83	0,29	14%	4,15	5,51		12										
(4) LIA (CLIA, CMIA, ECLIA); (1) Abbott		4,21	0,24	5,6	191	0	CVPG	4,21	0,042	14%	3,62	4,8		191										
(4) LIA (CLIA, CMIA, ECLIA); (12) Beckman Coulter		4,67	0,21	4,5	125	0	CVPG	4,67	0,046	14%	4,01	5,33		125										
(4) LIA (CLIA, CMIA, ECLIA); (29) Siemens (DPC)		5,22	0,33	6,2	103	0	CVPG	5,22	0,078	14%	4,48	5,96		103										
(4) LIA (CLIA, CMIA, ECLIA); (60) Roche		5,54	0,16	3,0	646	0	CVPG	5,54	0,016	14%	4,76	6,32		646										
(4) LIA (CLIA, CMIA, ECLIA); (149) Siemens (Dade)		5,08	0,22	4,4	97	0	CVPG	5,08	0,055	14%	4,36	5,8		97										
(4) LIA (CLIA, CMIA, ECLIA); (164) DiaSorin		6,25	0,50	8,0	22	0	CVPG	6,25	0,26	14%	5,37	7,13		22										
(4) LIA (CLIA, CMIA, ECLIA); (179) Siemens (Bayer)		4,76	0,22	4,5	102	0	CVPG	4,76	0,053	14%	4,09	5,43		102										
(4) LIA (CLIA, CMIA, ECLIA); (257) Siemens (Bayer) (2)		6,70	0,27	4,0	42	0	CVPG	6,7	0,10	14%	5,76	7,64		42										
Other					23	0								0										
								1x 1/12, 1x 1/47, 1x 1/59, 1x 1/60, 1x 2/25, 1x 2/26, 1x 2/32, 2x 2/149, 3x 3/1, 1x 3/14, 1x 3/82, 2x 4/24, 4x 4/40, 1x 4/58, 2x 4/98																
(124) Free T4	[pmol/L]				1315							1300	1245	96%									0	
Samples and groups																								
Sample A		24,7	3,4	14	1315							1300	1286	99%									0	
(1) RIA (IRMA); (24) B.R.A.H.M.S.		25,4	1,2	4,7	39	0	CVPG	25,4	0,46	13%	22	28,8		39										
(1) RIA (IRMA); (36) Immunotech		23,1	0,74	3,2	6	0	CVPG	23,1	1,0	13%	20	26,2		6										
(1) RIA (IRMA); (87) Euroimmun		23,4	0,59	2,5	17	0	CVPG	23,4	0,35	13%	20,3	26,5		17										
(1) RIA (IRMA); (146) MEDIPAN Diagnostica		22,7	0,59	2,6	7	0	CVPG	22,7	0,57	13%	19,7	25,7		7										
(1) RIA (IRMA); (214) Demeditec		23,8	0,74	3,1	32	0	CVPG	23,8	0,32	13%	20,7	26,9		32										
(3) FIA (FEIA, TRACE); (15) bioMérieux		28,9	1,3	4,6	26	0	CVPG	28,9	0,64	13%	25,1	32,7		26										
(3) FIA (FEIA, TRACE); (25) TOSOH		27,7	2,2	7,9	8	0	CVPG	27,7	1,7	13%	24	31,4		8										
(4) LIA (CLIA, CMIA, ECLIA); (1) Abbott		19,1	0,94	4,9	174	0	CVPG	19,1	0,17	13%	16,6	21,6		174										
(4) LIA (CLIA, CMIA, ECLIA); (12) Beckman Coulter		21,5	1,0	4,8	107	0	CVPG	21,5	0,24	13%	18,7	24,3		107										
(4) LIA (CLIA, CMIA, ECLIA); (29) Siemens (DPC)		27,3	1,2	4,6	86	0	CVPG	27,3	0,33	13%	23,7	30,9		86										
(4) LIA (CLIA, CMIA, ECLIA); (40) Ortho Clinical Diagnostics		28,4	0,82	2,9	5	0	CVPG	28,4	2,3	13%	24,7	32,1		5										
(4) LIA (CLIA, CMIA, ECLIA); (60) Roche		26,8	1,2	4,6	570	0	CVPG	26,8	0,13	13%	23,3	30,3		570										
(4) LIA (CLIA, CMIA, ECLIA); (149) Siemens (Dade)		21,5	0,74	3,5	71	0	CVPG	21,5	0,22	13%	18,7	24,3		71										
(4) LIA (CLIA, CMIA, ECLIA); (164) DiaSorin		25,4	1,6	6,5	23	0	CVPG	25,4	0,84	13%	22	28,8		23										
(4) LIA (CLIA, CMIA, ECLIA); (179) Siemens (Bayer)		23,8	1,4	5,8	129	0	CVPG	23,8	0,30	13%	20,7	26,9		129										
Other					15	0								0										
								1x 1/59, 1x 1/60, 1x 2/26, 1x 2/32, 3x 2/66, 1x 2/134, 1x 2/149, 1x 3/14, 1x 3/82, 1x 4/58, 3x 4/98																
Sample B		58,0	11	19	1315							1300	1253	96%									0	

Summary statistics - quantitative results

(Groups: measurement principle, manufacturer of kit)

Filter: minimal size of groups n = 5

EQA round: E13/18 - Hormones 1

Dead line: 07.08.2018

Test	[unit]	Comparability					Traceability																
		RoM	SD	CV [%]	N _{tot}	N _{out}	AV	U _{AV}	D _{max}	LL	UL	N _{eva}	N _{suc}	S _{rel}	AV	U _{AV}	D _{max}	LL	UL	N _{eva}	N _{suc}	S _{rel}	
(125) Free T3					1241							1231	1183	96%									0
Samples and groups	[pmol/L]																						
Sample A		12,8	2,1	16	1241							1231	1199	97%									0
(4) LIA (CLIA, CMIA, ECLIA); (164) DiaSorin		12,2	0,79	6,5	26	0	CVPG	12,2	0,38	15%	10,3	14,1		26									
(4) LIA (CLIA, CMIA, ECLIA); (179) Siemens (Bayer)		11,9	0,39	3,3	127	0	CVPG	11,9	0,085	15%	10,1	13,7		127									
Other					10	0								0									
								1x 1/29, 1x 1/60, 1x 2/26, 3x 2/66, 1x 2/134, 1x 4/58, 2x 4/98															
Sample B		7,51	0,97	13	1241							1231	1200	97%									0
(1) RIA (IRMA); (24) B.R.A.H.M.S.		11,4	0,75	6,6	38	0	CVPG	11,4	0,30	15%	9,69	13,2		38									
(1) RIA (IRMA); (36) Immunotech		9,39	0,80	8,5	5	0	CVPG	9,39	2,3	15%	7,98	10,8		5									
(1) RIA (IRMA); (87) Euroimmun		8,07	0,44	5,5	14	0	CVPG	8,07	0,29	15%	6,85	9,29		14									
(1) RIA (IRMA); (146) MEDIPAN Diagnostica		9,11	0,19	2,1	7	0	CVPG	9,11	0,19	15%	7,74	10,5		7									
(1) RIA (IRMA); (214) Demeditec		10,2	0,67	6,5	32	0	CVPG	10,2	0,29	15%	8,67	11,8		32									
(3) FIA (FEIA, TRACE); (15) bioMérieux		7,67	0,46	6,0	25	0	CVPG	7,67	0,23	15%	6,51	8,83		25									
(3) FIA (FEIA, TRACE); (25) TOSOH		6,78	0,52	7,7	8	0	CVPG	6,78	0,40	15%	5,76	7,8		8									
(4) LIA (CLIA, CMIA, ECLIA); (1) Abbott		5,87	0,41	6,9	160	0	CVPG	5,87	0,079	15%	4,98	6,76		160									
(4) LIA (CLIA, CMIA, ECLIA); (12) Beckman Coulter		6,13	0,37	6,0	102	0	CVPG	6,13	0,089	15%	5,21	7,05		102									
(4) LIA (CLIA, CMIA, ECLIA); (29) Siemens (DPC)		8,53	0,91	11	83	0	CVPG	8,53	0,25	15%	7,25	9,81		83									
(4) LIA (CLIA, CMIA, ECLIA); (40) Ortho Clinical Diagnostics		8,31	0,45	5,4	5	0	CVPG	8,31	1,3	15%	7,06	9,56		5									
(4) LIA (CLIA, CMIA, ECLIA); (60) Roche		7,72	0,35	4,5	544	0	CVPG	7,72	0,037	15%	6,56	8,88		544									
(4) LIA (CLIA, CMIA, ECLIA); (149) Siemens (Dade)		7,52	0,27	3,6	55	0	CVPG	7,52	0,089	15%	6,39	8,65		55									
(4) LIA (CLIA, CMIA, ECLIA); (164) DiaSorin		7,44	0,37	4,9	26	0	CVPG	7,44	0,18	15%	6,32	8,56		26									
(4) LIA (CLIA, CMIA, ECLIA); (179) Siemens (Bayer)		7,83	0,24	3,1	127	0	CVPG	7,83	0,052	15%	6,65	9,01		127									
Other					10	0								0									
								1x 1/29, 1x 1/60, 1x 2/26, 3x 2/66, 1x 2/134, 1x 4/58, 2x 4/98															
(200) Ferritin					802							774	680	88%									0
Samples and groups	[µg/L]																						
Sample A		610	110	18	802							774	756	98%									0
(3) FIA (FEIA, TRACE); (15) bioMérieux		541	43	8,0	17	0	CVPG	541	26	24%	411	671		17									
(3) FIA (FEIA, TRACE); (25) TOSOH		490	28	5,7	5	0	CVPG	490	80	24%	372	608		5									
(4) LIA (CLIA, CMIA, ECLIA); (1) Abbott		791	50	6,4	99	2	CVPG	791	13	24%	601	981		99									
(4) LIA (CLIA, CMIA, ECLIA); (12) Beckman Coulter		498	43	8,7	66	0	CVPG	498	13	24%	378	618		66									
(4) LIA (CLIA, CMIA, ECLIA); (29) Siemens (DPC)		573	49	8,6	35	0	CVPG	573	20	24%	435	711		35									
(4) LIA (CLIA, CMIA, ECLIA); (60) Roche		655	54	8,2	252	0	CVPG	655	8,3	24%	497	813		252									
(4) LIA (CLIA, CMIA, ECLIA); (149) Siemens (Dade)		581	17	2,9	16	0	CVPG	581	10	24%	441	721		16									
(4) LIA (CLIA, CMIA, ECLIA); (164) DiaSorin		661	80	12	8	0	CVPG	661	61	24%	502	820		8									

Summary statistics - quantitative results

(Groups: measurement principle, manufacturer of kit)

Filter: minimal size of groups n = 5

EQA round: E13/18 - Hormones 1

Dead line: 07.08.2018

Test	[unit]	Comparability					Traceability																	
		RoM	SD	CV [%]	N _{tot}	N _{out}	AV	U _{AV}	D _{max}	LL	UL	N _{eva}	N _{suc}	S _{rel}	AV	U _{AV}	D _{max}	LL	UL	N _{eva}	N _{suc}	S _{rel}		
(301) Cortisol	[nmol/L]				516							502	476	95%							516	490	95%	
Samples and groups																								
Sample B		295	29	9,7	516							502	487	97% CRV	305,9	3,7	22%	238	374	516	499	97%		
(1) RIA (IRMA); (36) Immunotech		333	38	11	5	0	CVPG	333	110	16%	279	387	5								5			
(3) FIA (FEIA, TRACE); (15) bioMérieux		239	37	16	10	0	CVPG	239	29	16%	200	278	10								10			
(4) LIA (CLIA, CMIA, ECLIA); (1) Abbott		266	11	4,3	66	0	CVPG	266	3,5	16%	223	309	66								66			
(4) LIA (CLIA, CMIA, ECLIA); (12) Beckman Coulter		256	21	8,4	48	0	CVPG	256	7,6	16%	215	297	48								48			
(4) LIA (CLIA, CMIA, ECLIA); (29) Siemens (DPC)		298	18	6,2	83	0	CVPG	298	5,0	16%	250	346	83								83			
(4) LIA (CLIA, CMIA, ECLIA); (60) Roche		308	19	6,2	209	0	CVPG	308	3,3	16%	258	358	209								209			
(4) LIA (CLIA, CMIA, ECLIA); (179) Siemens (Bayer)		303	23	7,4	81	0	CVPG	303	6,1	16%	254	352	81								81			
Other					14	0							0								14			
								1x 1/1, 2x 1/29, 1x 1/185, 2x 2/26, 1x 2/66, 1x 2/134, 1x 2/179, 2x 2/214, 1x 3/25, 1x 4/134, 1x 4/149														1x 1/1, 2x 1/29, 1x 1/185, 2x 2/26, 1x 2/66, 1x 2/134, 1x 2/179, 2x 2/214, 1x 3/25, 1x 4/134, 1x 4/149		
(302) 17-beta-estradiol	[pmol/L]				686							672	658	98%							686	666	97%	
Samples and groups																								
Sample A		627	61	9,8	686							672	663	99% CRV	647,4	7,6	30%	453	842	686	672	98%		
(2) EIA (ELISA); (66) DRG		549	17	3,1	32	0	CVPG	549	7,5	22%	428	670	32								32			
(3) FIA (FEIA, TRACE); (15) bioMérieux		527	33	6,3	25	0	CVPG	527	16	22%	411	643	25								25			
(3) FIA (FEIA, TRACE); (25) TOSOH		556	35	6,4	5	0	CVPG	556	100	22%	433	679	5								5			
(4) LIA (CLIA, CMIA, ECLIA); (1) Abbott		611	24	3,9	83	0	CVPG	611	6,4	22%	476	746	83								83			
(4) LIA (CLIA, CMIA, ECLIA); (12) Beckman Coulter		740	84	11	55	0	CVPG	740	28	22%	577	903	55								55			
(4) LIA (CLIA, CMIA, ECLIA); (29) Siemens (DPC)		576	36	6,2	134	0	CVPG	576	7,6	22%	449	703	134								134			
(4) LIA (CLIA, CMIA, ECLIA); (60) Roche		664	27	4,0	238	0	CVPG	664	4,2	22%	517	811	238								238			
(4) LIA (CLIA, CMIA, ECLIA); (149) Siemens (Dade)		565	11	1,9	5	0	CVPG	565	31	22%	440	690	5								5			
(4) LIA (CLIA, CMIA, ECLIA); (164) DiaSorin		639	46	7,2	12	0	CVPG	639	33	22%	498	780	12								12			
(4) LIA (CLIA, CMIA, ECLIA); (179) Siemens (Bayer)		628	30	4,8	83	0	CVPG	628	8,2	22%	489	767	83								83			
Other					14	0							0								14			
								2x 1/36, 1x 1/218, 1x 2/26, 1x 2/134, 2x 2/214, 1x 3/1, 4x 4/15, 2x 4/98														2x 1/36, 1x 1/218, 1x 2/26, 1x 2/134, 2x 2/214, 1x 3/1, 4x 4/15, 2x 4/98		
Sample B		1360	150	11	686							672	665	99% CRV	1304	15	30%	912	1700	686	673	98%		
(2) EIA (ELISA); (66) DRG		1260	17	1,3	32	0	CVPG	1260	7,2	22%	982	1540	32								32			
(3) FIA (FEIA, TRACE); (15) bioMérieux		1150	75	6,5	25	0	CVPG	1150	37	22%	897	1410	25								25			
(3) FIA (FEIA, TRACE); (25) TOSOH		1370	54	4,0	5	0	CVPG	1370	150	22%	1060	1680	5								5			
(4) LIA (CLIA, CMIA, ECLIA); (1) Abbott		1240	32	2,6	83	0	CVPG	1240	8,6	22%	967	1520	83								83			
(4) LIA (CLIA, CMIA, ECLIA); (12) Beckman Coulter		1530	110	7,4	55	0	CVPG	1530	37	22%	1190	1870	55								55			
(4) LIA (CLIA, CMIA, ECLIA); (29) Siemens (DPC)		1250	61	4,9	134	0	CVPG	1250	13	22%	975	1530	134								134			
(4) LIA (CLIA, CMIA, ECLIA); (60) Roche		1470	50	3,4	238	0	CVPG	1470	8,0	22%	1140	1800	238								238			
(4) LIA (CLIA, CMIA, ECLIA); (149) Siemens (Dade)		1180	44	3,7	5	0	CVPG	1180	120	22%	920	1440	5								5			

Summary statistics - quantitative results

(Groups: measurement principle, manufacturer of kit)

Filter: minimal size of groups n = 5

EQA round: E13/18 - Hormones 1

Dead line: 07.08.2018

Test	[unit]	Comparability					Traceability																
		RoM	SD	CV [%]	N _{tot}	N _{out}	AV	U _{AV}	D _{max}	LL	UL	N _{eva}	N _{suc}	S _{rel}	AV	U _{AV}	D _{max}	LL	UL	N _{eva}	N _{suc}	S _{rel}	
(302) 17-beta-estradiol					686							672	658	98%						686	666	97%	
--- Samples and groups ---	[pmol/L]																						
Sample B		1360	150	11	686							672	665	99%	CRV	1304	15	30%	912	1700	686	673	98%
(4) LIA (CLIA, CMIA, ECLIA); (164) DiaSorin		1240	110	9,1	12	0	CVPG	1240	80	22%	967	1520	12									12	
(4) LIA (CLIA, CMIA, ECLIA); (179) Siemens (Bayer)		1350	59	4,4	83	0	CVPG	1350	16	22%	1050	1650	83									83	
Other					14	0							0									14	

Summary statistics - quantitative results

(Groups: measurement principle, manufacturer of kit)

Filter: minimal size of groups n = 5

EQA round: E13/18 - Hormones 1

Dead line: 07.08.2018

Test	[unit]	Comparability					Traceability																			
		RoM	SD	CV [%]	N _{tot}	N _{out}	AV	U _{AV}	D _{max}	LL	UL	N _{eva}	N _{suc}	S _{rel}	AV	U _{AV}	D _{max}	LL	UL	N _{eva}	N _{suc}	S _{rel}				
(304) Progesterone					607							593	566	95%							0					
Samples and groups	[nmol/L]																									
Sample B		12,6	1,5	12	607							593	577	97%							0					
(2) EIA (ELISA); (66) DRG		15,2	0,31	2,0	31	0	CVPG	15,2	0,14	20%	12,1	18,3		31												
(3) FIA (FEIA, TRACE); (15) bioMérieux		14,0	1,4	9,7	28	0	CVPG	14	0,63	20%	11,2	16,8		28												
(4) LIA (CLIA, CMIA, ECLIA); (1) Abbott		12,1	0,55	4,6	72	0	CVPG	12,1	0,16	20%	9,68	14,6		72												
(4) LIA (CLIA, CMIA, ECLIA); (12) Beckman Coulter		11,2	1,2	11	54	0	CVPG	11,2	0,41	20%	8,96	13,5		54												
(4) LIA (CLIA, CMIA, ECLIA); (29) Siemens (DPC)		11,2	0,83	7,4	120	0	CVPG	11,2	0,19	20%	8,96	13,5		120												
(4) LIA (CLIA, CMIA, ECLIA); (60) Roche		13,5	0,63	4,7	205	0	CVPG	13,5	0,11	20%	10,8	16,2		205												
(4) LIA (CLIA, CMIA, ECLIA); (164) DiaSorin		12,7	0,97	7,6	7	0	CVPG	12,7	0,94	20%	10,1	15,3		7												
(4) LIA (CLIA, CMIA, ECLIA); (179) Siemens (Bayer)		11,8	0,76	6,4	76	0	CVPG	11,8	0,21	20%	9,44	14,2		76												
Other					14	0								0												
								3x 1/36, 1x 2/26, 1x 2/134, 1x 3/1, 1x 3/14, 3x 3/25, 1x 4/98, 3x 4/149																		
(305) Testosterone					683							671	650	97%							683	674	99%			
Samples and groups	[nmol/L]																									
Sample A		9,42	0,73	7,8	683							671	660	98% CRV	9,348	0,093	30%	6,54	12,2		683	678	99%			
(2) EIA (ELISA); (66) DRG		9,83	0,32	3,3	32	0	CVPG	9,83	0,14	22%	7,66	12		32												
(3) FIA (FEIA, TRACE); (25) TOSOH		9,31	0,37	3,9	14	0	CVPG	9,31	0,24	22%	7,26	11,4		14												
(4) LIA (CLIA, CMIA, ECLIA); (1) Abbott		9,57	0,48	5,0	91	0	CVPG	9,57	0,12	22%	7,46	11,7		91												
(4) LIA (CLIA, CMIA, ECLIA); (12) Beckman Coulter		8,04	0,56	7,0	73	0	CVPG	8,04	0,16	22%	6,27	9,81		73												
(4) LIA (CLIA, CMIA, ECLIA); (29) Siemens (DPC)		9,23	0,76	8,3	128	0	CVPG	9,23	0,17	22%	7,19	11,3		128												
(4) LIA (CLIA, CMIA, ECLIA); (60) Roche		9,68	0,41	4,2	248	0	CVPG	9,68	0,064	22%	7,55	11,9		248												
(4) LIA (CLIA, CMIA, ECLIA); (179) Siemens (Bayer)		9,15	1,2	13	47	0	CVPG	9,15	0,44	22%	7,13	11,2		47												
(4) LIA (CLIA, CMIA, ECLIA); (257) Siemens (Bayer) (2)		9,83	0,54	5,5	38	0	CVPG	9,83	0,21	22%	7,66	12		38												
Other					12	0								0										12		
								1x 1/36, 1x 1/66, 1x 2/26, 1x 2/214, 1x 3/1, 1x 3/14, 1x 4/47, 2x 4/98, 1x 4/149, 2x 4/183							671	658	98% CRV	4,615	0,054	30%	3,23	6		683	676	99%
Sample B		4,38	0,34	7,7	683							671	658	98% CRV	4,615	0,054	30%	3,23	6		683	676	99%			
(2) EIA (ELISA); (66) DRG		4,67	0,29	6,2	32	0	CVPG	4,67	0,13	22%	3,64	5,7		32												
(3) FIA (FEIA, TRACE); (25) TOSOH		3,84	0,39	10	14	0	CVPG	3,84	0,26	22%	2,99	4,69		14												
(4) LIA (CLIA, CMIA, ECLIA); (1) Abbott		4,38	0,26	6,0	91	0	CVPG	4,38	0,067	22%	3,41	5,35		91												
(4) LIA (CLIA, CMIA, ECLIA); (12) Beckman Coulter		4,26	0,29	6,8	73	0	CVPG	4,26	0,083	22%	3,32	5,2		73												
(4) LIA (CLIA, CMIA, ECLIA); (29) Siemens (DPC)		4,74	0,51	11	128	0	CVPG	4,74	0,11	22%	3,69	5,79		128												
(4) LIA (CLIA, CMIA, ECLIA); (60) Roche		4,32	0,21	4,9	248	0	CVPG	4,32	0,033	22%	3,36	5,28		248												
(4) LIA (CLIA, CMIA, ECLIA); (179) Siemens (Bayer)		4,25	0,40	9,5	47	0	CVPG	4,25	0,14	22%	3,31	5,19		47												
(4) LIA (CLIA, CMIA, ECLIA); (257) Siemens (Bayer) (2)		4,24	0,22	5,2	38	0	CVPG	4,24	0,088	22%	3,3	5,18		38												
Other					12	0								0										12		
								1x 1/36, 1x 1/66, 1x 2/26, 1x 2/214, 1x 3/1, 1x 3/14, 1x 4/47, 2x 4/98, 1x 4/149, 2x 4/183							671	658	98% CRV	4,615	0,054	30%	3,23	6		683	676	99%

Summary statistics - quantitative results

(Groups: measurement principle, manufacturer of kit)

Filter: minimal size of groups n = 5

EQA round: E13/18 - Hormones 1

Dead line: 07.08.2018

Test	[unit]	Comparability					Traceability																		
		RoM	SD	CV [%]	N _{tot}	N _{out}	AV	U _{AV}	D _{max}	LL	UL	N _{eva}	N _{suc}	S _{rel}	AV	U _{AV}	D _{max}	LL	UL	N _{eva}	N _{suc}	S _{rel}			
(306) 17-OH-progesterone					120							104	100	96%							120	108	90%		
Samples and groups	[nmol/L]																								
Sample A		8,22	1,1	14	120							104	101	97%	CRV	8,275	0,083	44%	4,63	12	120	118	98%		
(1) RIA (IRMA); (36) Immuntotech		7,88	1,2	16	23	0	CVPG	7,88	0,63	33%	5,27	10,5	23								23				
(1) RIA (IRMA); (47) Biosource		10,4	0,51	4,9	7	0	CVPG	10,4	0,49	33%	6,96	13,9	7								7				
(2) EIA (ELISA); (66) DRG		8,13	0,51	6,3	11	0	CVPG	8,13	0,38	33%	5,44	10,9	11								11				
(2) EIA (ELISA); (134) IBL		8,34	0,79	9,5	48	0	CVPG	8,34	0,28	33%	5,58	11,1	48								48				
(2) EIA (ELISA); (214) Demeditec		8,53	2,3	27	7	0	CVPG	8,53	2,2	33%	5,71	11,4	7								7				
(4) LIA (CLIA, CMIA, ECLIA); (183) Immunodiagnostic Systems		7,09	0,54	7,6	8	0	CVPG	7,09	0,41	33%	4,75	9,43	8								8				
Other					16	0																16			
								2x 1/12, 1x 1/15, 1x 1/134, 2x 1/185, 1x 1/218, 2x 2/26, 2x 2/36, 1x 2/47, 1x 2/60, 1x 2/999, 1x 4/134, 1x 4/999									2x 1/12, 1x 1/15, 1x 1/134, 2x 1/185, 1x 1/218, 2x 2/26, 2x 2/36, 1x 2/47, 1x 2/60, 1x 2/999, 1x 4/134, 1x 4/999						16		
Sample B		4,54	0,79	17	120							104	102	98%	CRV	3,219	0,032	±2,641	0,579	5,86	120	110	92%		
(1) RIA (IRMA); (36) Immuntotech		3,99	0,44	11	23	0	CVPG	3,99	0,23	±1,98	2,01	5,97	23								23				
(1) RIA (IRMA); (47) Biosource		6,37	0,78	12	7	0	CVPG	6,37	0,76	33%	4,26	8,48	7								7				
(2) EIA (ELISA); (66) DRG		4,60	0,21	4,6	11	0	CVPG	4,6	0,16	±1,98	2,62	6,58	11								11				
(2) EIA (ELISA); (134) IBL		4,66	0,58	12	48	0	CVPG	4,66	0,21	±1,98	2,68	6,64	48								48				
(2) EIA (ELISA); (214) Demeditec		5,38	1,4	26	7	0	CVPG	5,38	1,4	±1,98	3,4	7,36	7								7				
(4) LIA (CLIA, CMIA, ECLIA); (183) Immunodiagnostic Systems		4,70	0,46	9,7	8	0	CVPG	4,7	0,35	±1,98	2,72	6,68	8								8				
Other					16	0																16			
								2x 1/12, 1x 1/15, 1x 1/134, 2x 1/185, 1x 1/218, 2x 2/26, 2x 2/36, 1x 2/47, 1x 2/60, 1x 2/999, 1x 4/134, 1x 4/999									2x 1/12, 1x 1/15, 1x 1/134, 2x 1/185, 1x 1/218, 2x 2/26, 2x 2/36, 1x 2/47, 1x 2/60, 1x 2/999, 1x 4/134, 1x 4/999						16		
(307) DHEA-S					433							418	406	97%									0		
Samples and groups	[µmol/L]																								
Sample A		10,5	1,5	15	433							418	413	99%									0		
(4) LIA (CLIA, CMIA, ECLIA); (1) Abbott		10,7	0,65	6,1	47	0	CVPG	10,7	0,23	21%	8,45	13	47												
(4) LIA (CLIA, CMIA, ECLIA); (12) Beckman Coulter		9,88	0,78	7,9	37	0	CVPG	9,88	0,31	21%	7,8	12	37												
(4) LIA (CLIA, CMIA, ECLIA); (29) Siemens (DPC)		9,09	0,82	9,1	108	0	CVPG	9,09	0,19	21%	7,18	11	108												
(4) LIA (CLIA, CMIA, ECLIA); (60) Roche		11,7	0,75	6,4	167	0	CVPG	11,7	0,14	21%	9,24	14,2	167												
(4) LIA (CLIA, CMIA, ECLIA); (164) DiaSorin		10,2	0,90	8,8	13	0	CVPG	10,2	0,61	21%	8,05	12,4	13												
(4) LIA (CLIA, CMIA, ECLIA); (179) Siemens (Bayer)		9,33	0,53	5,7	46	0	CVPG	9,33	0,19	21%	7,37	11,3	46												
Other					15	0																			
								1x 1/29, 4x 1/218, 1x 2/26, 4x 2/66, 2x 2/134, 1x 2/214, 1x 3/25, 1x 4/149																	
Sample B		5,71	0,98	17	433							418	408	98%									0		
(4) LIA (CLIA, CMIA, ECLIA); (1) Abbott		5,87	0,33	5,7	47	0	CVPG	5,87	0,12	21%	4,63	7,11	47												
(4) LIA (CLIA, CMIA, ECLIA); (12) Beckman Coulter		5,60	0,46	8,3	37	0	CVPG	5,6	0,19	21%	4,42	6,78	37												
(4) LIA (CLIA, CMIA, ECLIA); (29) Siemens (DPC)		4,73	0,49	10	108	0	CVPG	4,73	0,12	21%	3,73	5,73	108												
(4) LIA (CLIA, CMIA, ECLIA); (60) Roche		6,55	0,45	6,9	167	0	CVPG	6,55	0,086	21%	5,17	7,93	167												
(4) LIA (CLIA, CMIA, ECLIA); (164) DiaSorin		4,90	0,34	7,0	13	0	CVPG	4,9	0,23	21%	3,87	5,93	13												
(4) LIA (CLIA, CMIA, ECLIA); (179) Siemens (Bayer)		5,19	0,41	8,0	46	0	CVPG	5,19	0,15	21%	4,1	6,28	46												

Summary statistics - quantitative results

(Groups: measurement principle, manufacturer of kit)

Filter: minimal size of groups n = 5

EQA round: E13/18 - Hormones 1

Dead line: 07.08.2018

Test	[unit]	Comparability					Traceability																	
		RoM	SD	CV [%]	N _{tot}	N _{out}	AV	U _{AV}	D _{max}	LL	UL	N _{eva}	N _{suc}	S _{rel}	AV	U _{AV}	D _{max}	LL	UL	N _{eva}	N _{suc}	S _{rel}		
(307) DHEA-S					433							418	406	97%							0			
--- Samples and groups	[µmol/L]																							
Sample B		5,71	0,98	17	433							418	408	98%							0			
Other					15	0								0										
							1x 1/29, 4x 1/218, 1x 2/26, 4x 2/66, 2x 2/134, 1x 2/214, 1x 3/25, 1x 4/149																	

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End of report

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