

## Summary statistics - quantitative results

(Groups: measurement principle, manufacturer of kit)

Filter: Czech Republic, minimal size of the groups n = 5

## EQA round: E21/21 - Hormones 2

Deadline: 09.02.2021

RoM = robust average	AV = assigned value	Dmax = acceptable percent difference
SD = standard deviation	CRV = certified reference value	LL = lower limit
CV = coefficient of variation	RV = reference value	UL = upper limit
Ntot = total number of the participants	CVE = consensus value from experts	Neva = number of evaluated participants
Nout = number of results excluded before calculation	CVP = consensus value from all participants	Nsuc = number of successful participants
	CVPG = consensus value from participants groups	Srel = success (relative)
	U <sub>AV</sub> = expanded uncertainty of the assigned value (k = 2)	

Test	[unit]						Comparability							
		RoM	SD	CV [%]	N <sub>tot</sub>	N <sub>out</sub>	AV	U <sub>AV</sub>	D <sub>max</sub>	LL	UL	N <sub>eva</sub>	N <sub>suc</sub>	S <sub>rel</sub>
<b>(193) Ferritin</b>					46							44	39	89%
— Samples and groups —	[µg/L]													
<b>Sample A</b>		198	39	19	46							44	42	95%
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (1) Abbott		230	18	7,8	10	0	CVPG	236	5,9	24%	179	293	10	
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (12) Beckman Coulter		148	13	8,8	8	0	CVPG	155	5,0	24%	117	193	8	
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche		237	5,2	2,2	6	0	CVPG	228	2,2	24%	173	283	6	
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (162) Siemens (Atellica)		197	15	7,5	7	0	CVPG	193	6,5	24%	146	240	7	
Other					15	0							13	
														1x 3/25, 3x 4/29, 1x 4/149, 3x 4/179, 1x 6/1, 1x 6/12, 3x 6/58, 2x 6/60
<b>Sample B</b>		34,2	9,1	27	46							44	39	89%
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (1) Abbott		32,4	3,2	9,8	10	0	CVPG	36,3	1,4	24%	27,5	45,1	10	
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (12) Beckman Coulter		25,4	3,6	14	8	0	CVPG	28,1	1,2	24%	21,3	34,9	8	
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche		48,0	1,2	2,5	6	0	CVPG	47	0,81	24%	35,7	58,3	6	
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (162) Siemens (Atellica)		28,3	2,7	9,7	7	0	CVPG	29	1,5	24%	22	36	7	
Other					15	0							13	
														1x 3/25, 3x 4/29, 1x 4/149, 3x 4/179, 1x 6/1, 1x 6/12, 3x 6/58, 2x 6/60
<b>(320) LH</b>					41							40	38	95%
— Samples and groups —	[U/L]													
<b>Sample A</b>		20,2	3,3	16	41							40	39	98%
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (1) Abbott		17,9	1,2	6,6	9	0	CVPG	18,2	0,25	15%	15,4	21	9	
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (12) Beckman Coulter		16,7	1,2	7,1	9	0	CVPG	16,8	0,40	15%	14,2	19,4	9	
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche		23,0	0,85	3,7	9	0	CVPG	23,4	0,13	15%	19,8	27	9	
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (162) Siemens (Atellica)		22,2	1,3	5,9	6	0	CVPG	22,2	0,48	15%	18,8	25,6	6	
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (179) Siemens		22,0	0,37	1,7	5	0	CVPG	21,4	0,39	15%	18,1	24,7	5	
Other					3	0							2	
														1x 3/25, 1x 4/29, 1x 4/999
<b>Sample B</b>		7,50	1,3	18	41							40	38	95%
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (1) Abbott		6,15	0,37	6,0	9	0	CVPG	6,16	0,079	15%	5,23	7,09	9	
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (12) Beckman Coulter		8,00	0,44	5,6	9	0	CVPG	7,61	0,22	15%	6,46	8,76	9	
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche		9,41	0,58	6,1	9	0	CVPG	9,59	0,065	15%	8,15	11,1	9	
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (162) Siemens (Atellica)		6,95	0,22	3,2	6	0	CVPG	7,1	0,15	15%	6,03	8,17	6	
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (179) Siemens		6,95	0,22	3,2	5	0	CVPG	6,94	0,12	15%	5,89	7,99	5	
Other					3	0							2	
														1x 3/25, 1x 4/29, 1x 4/999
<b>(321) FSH</b>					41							40	38	95%
— Samples and groups —	[U/L]													
<b>Sample A</b>		17,1	3,1	18	41							40	39	98%
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (1) Abbott		15,6	0,52	3,3	9	0	CVPG	15,5	0,18	15%	13,1	17,9	9	
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (12) Beckman Coulter		15,1	0,89	5,9	9	0	CVPG	15,3	0,36	15%	13	17,6	9	
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche		15,6	0,67	4,3	9	0	CVPG	15,7	0,10	15%	13,3	18,1	9	
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (162) Siemens (Atellica)		21,0	0,33	1,6	6	0	CVPG	21,3	0,39	15%	18,1	24,5	6	
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (179) Siemens		22,2	0,42	1,9	5	0	CVPG	20,9	0,34	15%	17,7	24,1	5	
Other					3	0							2	
														1x 3/25, 1x 4/29, 1x 4/999
<b>Sample B</b>		15,7	1,7	11	41							40	38	95%
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (1) Abbott		14,5	0,44	3,1	9	0	CVPG	14,2	0,18	15%	12	16,4	9	
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (12) Beckman Coulter		16,0	0,74	4,6	9	0	CVPG	16	0,48	15%	13,6	18,4	9	
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche		14,6	0,56	3,8	9	0	CVPG	14,9	0,091	15%	12,6	17,2	9	
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (162) Siemens (Atellica)		17,6	1,2	6,7	6	0	CVPG	17,2	0,40	15%	14,6	19,8	6	
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (179) Siemens		17,1	1,6	9,3	5	0	CVPG	16,1	0,25	15%	13,6	18,6	5	

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## EQA round: E21/21 - Hormones 2

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Test	[unit]						Comparability									
		RoM	SD	CV [%]	N <sub>tot</sub>	N <sub>out</sub>	AV	U <sub>AV</sub>	D <sub>max</sub>	LL	UL	N <sub>eva</sub>	N <sub>suc</sub>	S <sub>rel</sub>		
<b>(321) FSH</b>	[U/L]				41							40	38	95%		
Samples and groups																
<b>Sample B</b>		15,7	1,7	11	41							40	38	95%		
Other					3	0							2			
							1x 3/25, 1x 4/29, 1x 4/999									
<b>(322) Prolactin</b>	[mU/L]				43							42	42	100%		
Samples and groups																
<b>Sample A</b>		558	66	12	43							42	42	100%		
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (1) Abbott		597	24	4,0	11	0	CVPG	598	8,9	16%	502	694	11			
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (12) Beckman Coulter		523	11	2,1	9	0	CVPG	526	12	16%	441	611	9			
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche		629	29	4,6	9	0	CVPG	613	4,2	16%	514	712	9			
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (162) Siemens (Atellica)		494	39	7,8	6	0	CVPG	495	14	16%	415	575	6			
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (179) Siemens		496	8,9	1,8	5	0	CVPG	490	8,5	16%	411	569	5			
Other					3	0								2		
							1x 3/25, 1x 4/29, 1x 4/999									
<b>Sample B</b>		207	33	16	43							42	42	100%		
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (1) Abbott		227	10	4,5	11	0	CVPG	226	3,3	16%	189	263	11			
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (12) Beckman Coulter		191	13	6,7	9	0	CVPG	192	4,2	16%	161	223	9			
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche		245	8,0	3,3	9	0	CVPG	243	1,5	16%	204	282	9			
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (162) Siemens (Atellica)		171	7,4	4,3	6	0	CVPG	172	3,1	16%	144	200	6			
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (179) Siemens		171	4,7	2,7	5	0	CVPG	171	2,0	16%	143	199	5			
Other					3	0								2		
							1x 3/25, 1x 4/29, 1x 4/999									
<b>(325) Insulin</b>	[mU/L]				14							14	14	100%		
Samples and groups																
<b>Sample A</b>		60,7	9,0	15	14							14	14	100%		
Other					14	0							14			
							3x 4/1, 2x 4/12, 4x 4/60, 4x 4/162, 1x 4/179									
<b>Sample B</b>		17,0	1,8	11	14							14	14	100%		
Other					14	0							14			
							3x 4/1, 2x 4/12, 4x 4/60, 4x 4/162, 1x 4/179									
<b>(326) Folate</b>	[nmol/L]				44							44	41	93%		
Samples and groups																
<b>Sample A</b>		18,8	3,4	18	44							44	42	95%		
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (1) Abbott		21,2	3,4	16	14	0	CVPG	21	0,47	27%	15,3	26,7	14			
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (12) Beckman Coulter		19,8	1,5	7,4	11	0	CVPG	19,8	0,47	27%	14,4	25,2	11			
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche		14,3	2,0	14	9	0	CVPG	14,5	0,19	27%	10,5	18,5	9			
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (162) Siemens (Atellica)		20,1	1,7	8,5	6	0	CVPG	18,9	0,88	27%	13,7	24,1	6			
Other					4	0								4		
							1x 4/29, 1x 4/149, 2x 4/179									
<b>Sample B</b>		10,8	1,8	17	44							44	41	93%		
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (1) Abbott		12,2	2,3	19	14	0	CVPG	11,7	0,30	27%	8,54	14,9	14			
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (12) Beckman Coulter		11,5	0,63	5,5	11	0	CVPG	11,4	0,25	27%	8,32	14,5	11			
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche		8,98	1,8	20	9	0	CVPG	8,84	0,15	27%	6,45	11,3	9			
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (162) Siemens (Atellica)		10,3	0,82	8,0	6	0	CVPG	9,7	0,40	27%	7,08	12,4	6			
Other					4	0								4		
							1x 4/29, 1x 4/149, 2x 4/179									
<b>(327) Vitamin B12</b>	[pmol/L]				41							41	38	93%		
Samples and groups																
<b>Sample A</b>		286	46	16	41							41	39	95%		
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (1) Abbott		300	10	3,3	12	0	CVPG	304	4,9	20%	243	365	12			
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (12) Beckman Coulter		234	18	7,5	12	0	CVPG	229	5,5	20%	183	275	12			
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche		329	13	3,8	7	0	CVPG	334	2,3	20%	267	401	7			
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (162) Siemens (Atellica)		318	17	5,4	5	0	CVPG	327	16	20%	261	393	5			
Other					5	0								5		
							3x 4/29, 1x 4/149, 1x 4/179									
<b>Sample B</b>		232	44	19	41							41	39	95%		
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (1) Abbott		252	6,2	2,5	12	0	CVPG	254	4,3	20%	203	305	12			
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (12) Beckman Coulter		182	19	10	12	0	CVPG	171	6,0	20%	136	206	12			

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## EQA round: E21/21 - Hormones 2

Deadline: 09.02.2021

Test	[unit]						Comparability							
		RoM	SD	CV [%]	N <sub>tot</sub>	N <sub>out</sub>	AV	U <sub>AV</sub>	D <sub>max</sub>	LL	UL	N <sub>eva</sub>	N <sub>suc</sub>	S <sub>rel</sub>
<b>(327) Vitamin B12</b>					41							41	38	93%
Samples and groups	[pmol/L]													
<b>Sample B</b>		232	44	19	41							41	39	95%
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche		270	8,9	3,3	7	0	CVPG	270	2,4	20%	216	324		7
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (162) Siemens (Atellica)		251	27	11	5	0	CVPG	258	13	20%	206	310		5
Other					5	0								5
								3x 4/29, 1x 4/149, 1x 4/179						
<b>(319) Vitamin B12 (active)</b>					8									0
Samples and groups	[pmol/L]													
<b>Sample A</b>		122	13	10	8									0
Other					8	0								0
								4x 4/1, 1x 4/60, 2x 4/162, 1x 4/179						
<b>Sample B</b>		82,7	12	15	8									0
Other					8	0								0
								4x 4/1, 1x 4/60, 2x 4/162, 1x 4/179						
<b>(328) hGH</b>					12									12 11 92%
Samples and groups	[mU/L]													
<b>Sample A</b>		6,89	0,64	9,4	12									12 11 92%
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (29) Siemens (Immulin)		7,05	0,31	4,4	6	0	CVPG	7,17	0,14	±1,54	5,63	8,71		6
Other					6	0								6
								2x 1/36, 1x 4/12, 2x 4/60, 1x 4/183						
<b>Sample B</b>		3,13	0,62	20	12									12 12 100%
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (29) Siemens (Immulin)		3,41	0,067	2,0	6	0	CVPG	3,37	0,060	±1,54	1,83	4,91		6
Other					6	0								6
								2x 1/36, 1x 4/12, 2x 4/60, 1x 4/183						
<b>(329) IGF-1</b>					13									13 13 100%
Samples and groups	[µg/L]													
<b>Sample A</b>		169	16	9,4	13									13 13 100%
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (29) Siemens (Immulin)		164	16	9,5	7	0	CVPG	158	2,9	22%	123	193		7
Other					6	0								6
								2x 4/60, 3x 4/164, 1x 4/183						
<b>Sample B</b>		138	21	15	13									13 13 100%
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (29) Siemens (Immulin)		147	5,9	4,0	7	0	CVPG	146	2,7	22%	113	179		7
Other					6	0								6
								2x 4/60, 3x 4/164, 1x 4/183						
<b>(390) Renin</b>					9									8 7 88%
Samples and groups	[ng/L]													
<b>Sample A</b>		42,6	7,1	17	9									8 8 100%
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (164) DiaSorin		35,3	4,1	12	5	0	CVPG	35,5	0,64	20%	28,4	42,6		5
Other					4	0								3
								1x 1/36, 3x 4/183						
<b>Sample B</b>		47,0	12	25	9									8 7 88%
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (164) DiaSorin		38,1	4,1	11	5	0	CVPG	35,1	0,63	20%	28	42,2		5
Other					4	0								3
								1x 1/36, 3x 4/183						
<b>(392) IGF-BP3</b>					4									4 4 100%
Samples and groups	[µg/L]													
<b>Sample A</b>		3960	290	7,4	4									4 4 100%
Other					4	0								4
								1x 1/36, 3x 4/29						
<b>Sample B</b>		3950	420	11	4									4 4 100%
Other					4	0								4
								1x 1/36, 3x 4/29						
<b>(393) C-peptide</b>					39									33 31 94%
Samples and groups	[pmol/L]													
<b>Sample A</b>		254	63	25	39									33 32 97%
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (1) Abbott		237	6,7	2,8	11	0	CVPG	239	5,6	20%	191	287		11
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche		311	15	5,0	15	0	CVPG	313	8,5	20%	250	376		15
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (162) Siemens (Atellica)		196	11	5,5	5	0	CVPG	196	31	20%	156	236		5
Other					8	0								2
								1x 3/25, 1x 4/12, 3x 4/29, 1x 4/164, 2x 4/179						
<b>Sample B</b>		587	120	20	39									33 31 94%
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (1) Abbott		558	18	3,2	11	0	CVPG	559	12	20%	447	671		11
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche		690	37	5,3	15	0	CVPG	690	18	20%	552	828		15
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (162) Siemens (Atellica)		466	42	9,1	5	0	CVPG	466	120	20%	372	560		5

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Test	[unit]						Comparability						N <sub>eva</sub>	N <sub>suc</sub>	S <sub>rel</sub>
		RoM	SD	CV [%]	N <sub>tot</sub>	N <sub>out</sub>	AV	U <sub>AV</sub>	D <sub>max</sub>	LL	UL				
<b>(393) C-peptide</b>	[pmol/L]				39								33	31	94%
--- Samples and groups ---															
<b>Sample B</b>		58,7	120	20	39							33	31	94%	
Other					8	0						2			
							1x 3/25, 1x 4/12, 3x 4/29, 1x 4/164, 2x 4/179								
<b>(394) SHBG</b>	[nmol/L]				26							25	25	100%	
--- Samples and groups ---															
<b>Sample A</b>		30,5	2,3	7,7	26							25	25	100%	
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (1) Abbott		32,5	2,1	6,6	6	0	CVPG	30,9	0,71	20%	24,7	37,1	6		
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche		30,4	1,7	5,6	7	0	CVPG	30,1	0,20	20%	24	36,2	7		
Other					13	0						12			
							1x 1/36, 3x 4/12, 3x 4/29, 4x 4/162, 2x 4/179								
<b>Sample B</b>		62,1	6,3	10	26							25	25	100%	
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (1) Abbott		64,6	1,4	2,2	6	0	CVPG	62	1,2	20%	49,6	74,4	6		
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche		66,1	5,0	7,5	7	0	CVPG	65,2	0,49	20%	52,1	78,3	7		
Other					13	0						12			
							1x 1/36, 3x 4/12, 3x 4/29, 4x 4/162, 2x 4/179								
<b>(405) Parathyroid hormone (PTH)</b>	[pmol/L]				24							24	22	92%	
--- Samples and groups ---															
<b>Sample A</b>		8,00	1,7	21	24							24	24	100%	
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (1) Abbott		10,6	0,97	9,2	6	0	CVPG	10,2	0,30	23%	7,85	12,6	6		
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (12) Beckman Coulter		7,22	0,56	7,8	7	0	CVPG	7,66	0,35	23%	5,89	9,43	7		
Other					11	0						11			
							1x 4/29, 3x 4/60, 4x 4/162, 2x 4/179, 1x 4/256								
<b>Sample B</b>		0,591	0,20	33	24							24	22	92%	
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (1) Abbott		0,819	0,18	21	6	0	CVPG	0,867	0,036 ± 0,283	0,591	1,15	6			
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (12) Beckman Coulter		0,510	0,13	26	7	0	CVPG	0,53	0,050 ± 0,276	0,254	0,806	7			
Other					11	0						11			
							1x 4/29, 3x 4/60, 4x 4/162, 2x 4/179, 1x 4/256								
<b>(407) Parathyroid hormone (PTH 1-84)</b>	[pmol/L]				11							11	11	100%	
--- Samples and groups ---															
<b>Sample A</b>		6,21	0,67	11	11							11	11	100%	
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche		6,53	0,29	4,4	9	0	CVPG	6,31	0,12	17%	5,23	7,39	9		
Other					2	0						2			
							2x 4/164								
<b>Sample B</b>		0,615	0,14	22	11							11	11	100%	
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche		0,668	0,13	19	9	0	CVPG	0,666	0,024 ± 0,204	0,462	0,87	9			
Other					2	0						2			
							2x 4/164								

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End of report

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