

# LABQUALITY

External Quality Assessment Scheme

## Hormones A: Basic analytes of hormone and immunochemistry Round 1, 2020

### Specimens

Please find enclosed 2 lyophilized samples, each 3 mL.

### Caution

Quality control specimens derived from human blood must be handled with the same care as patient samples, i.e. as potential transmitters of serious diseases. The specimens are found to be HBsAg, HCVAb and HIVAgAb negative when tested with licensed reagents, but no known test method can offer complete assurance that the specimens will not transmit these or other infectious diseases.

### Examinations

Ferritin  
Folate  
hCG total  
hCG intact  
T3  
T3 free  
T4  
T4 free  
TSH  
Vitamin B12  
Act vitamin B12

### Storage and use

Lyophilized samples are stable at +2 ...8 °C until the closing date of the round. Add 3.0 ml aqua to the samples. Ensure solubility and homogeneity. The reconstituted sample can be stored for 10 days at +2 to +8 °C (Folate for 8 days). The components of the frozen sample can be stored frozen at -20 °C for 4 weeks if the sample is frozen within 30 minutes after reconstitution. Thaw the sample shortly before analysis and mix until homogenous. Allow the sample to warm to room temperature before analysis.

### Result reporting

Please enter the results and methods via LabScala. If you can't find your instrument or reagent from the registry, please contact the coordinator.

S001: LQ732320011



S002: LQ732320012



2020-02-10

### INSTRUCTIONS

Product no. 2300, 2300S, 1300  
LQ732320011-012/NO

If the kit is incomplete or contains damaged specimens, please report immediately to [info@labquality.fi](mailto:info@labquality.fi)

The results should be reported no later than **February 27, 2020.**

### Inquiries

EQA Coordinator  
Päivi Ranta  
[paivi.ranta@labquality.fi](mailto:paivi.ranta@labquality.fi)

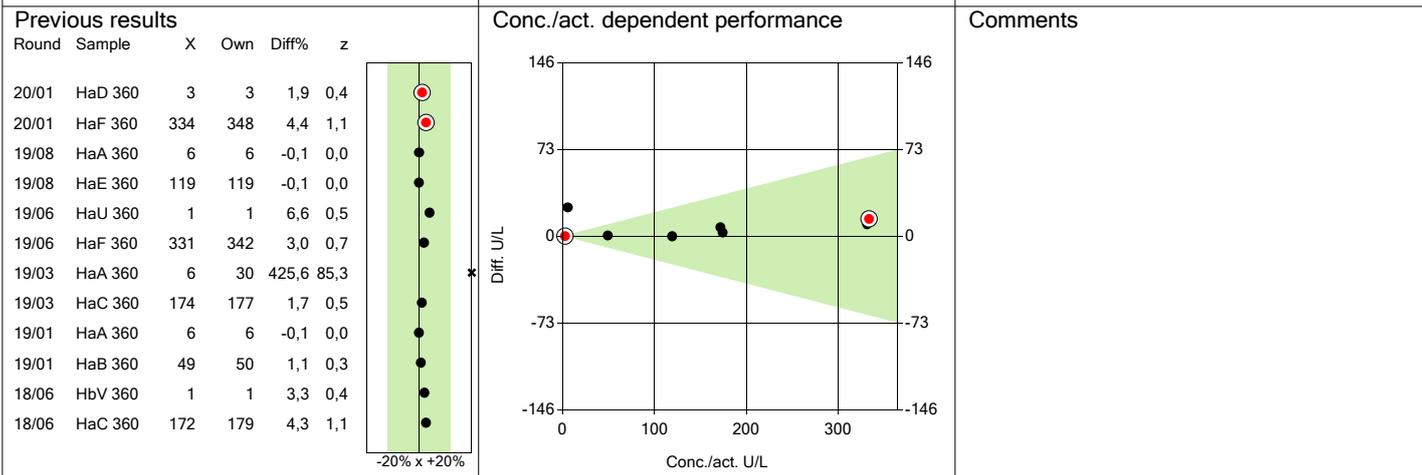
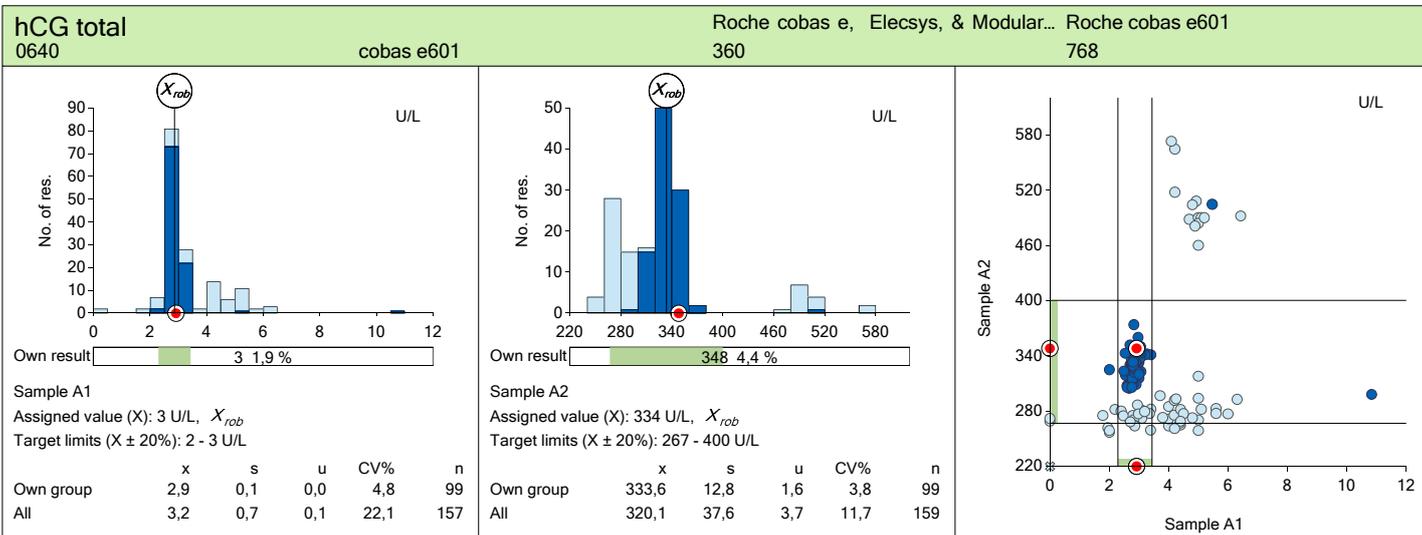
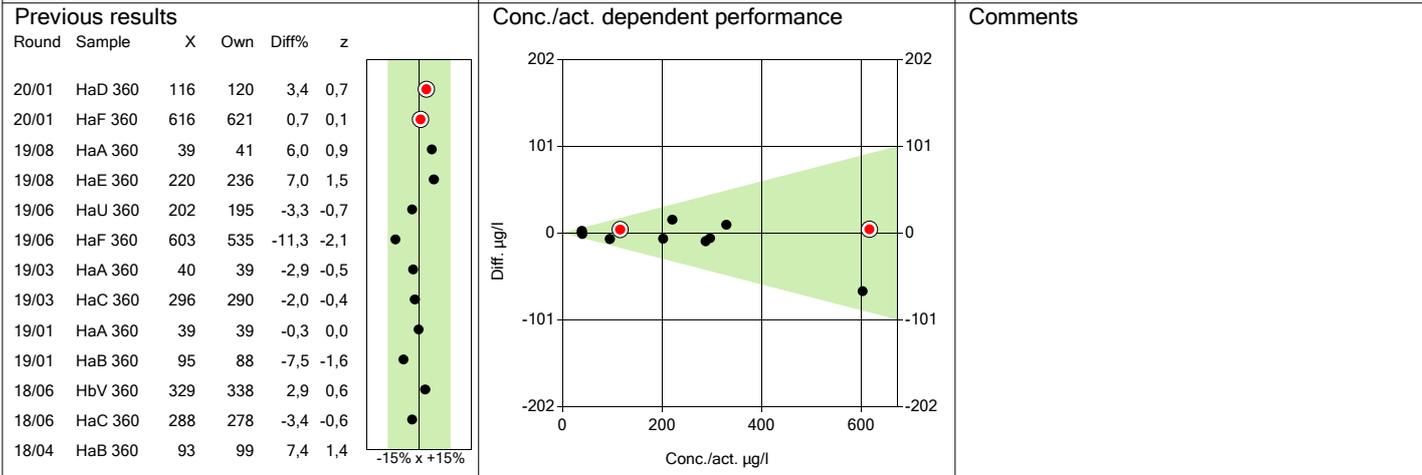
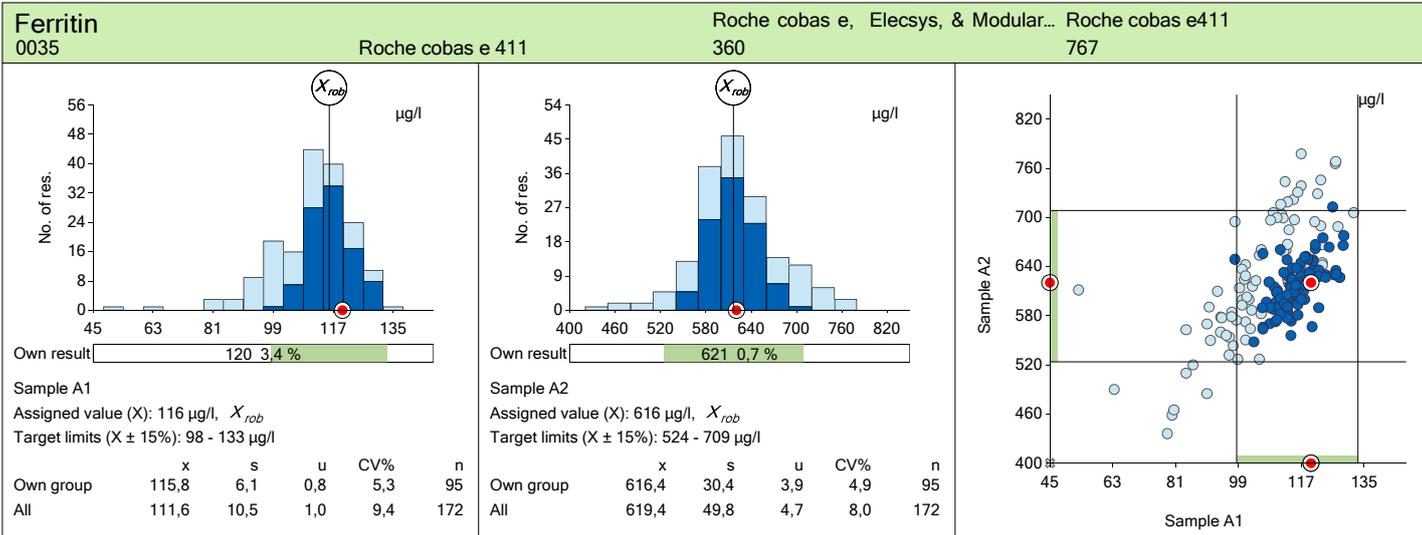
### Labquality

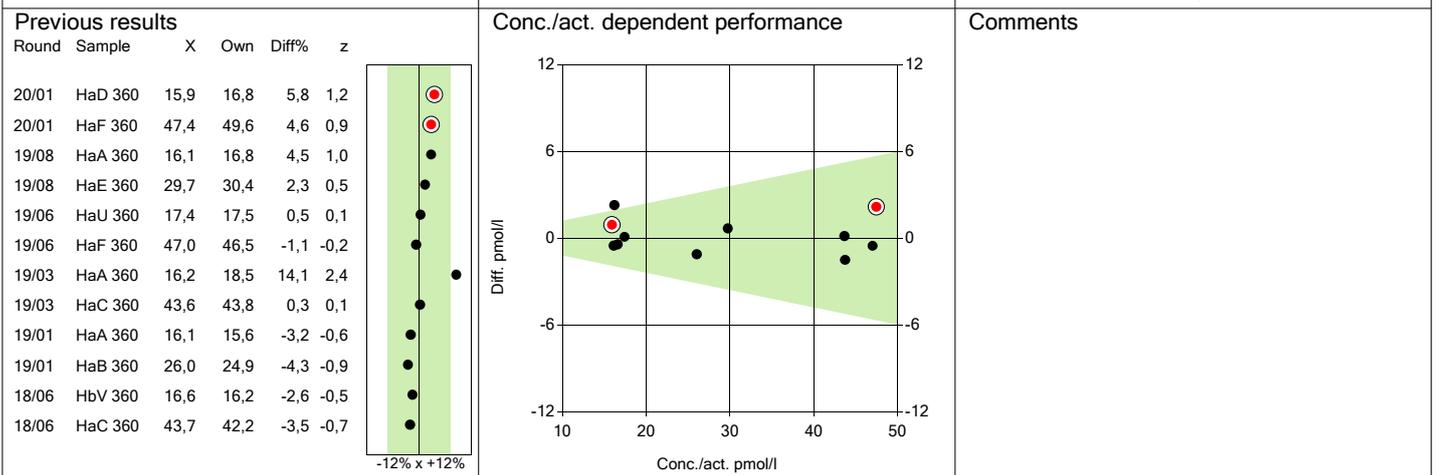
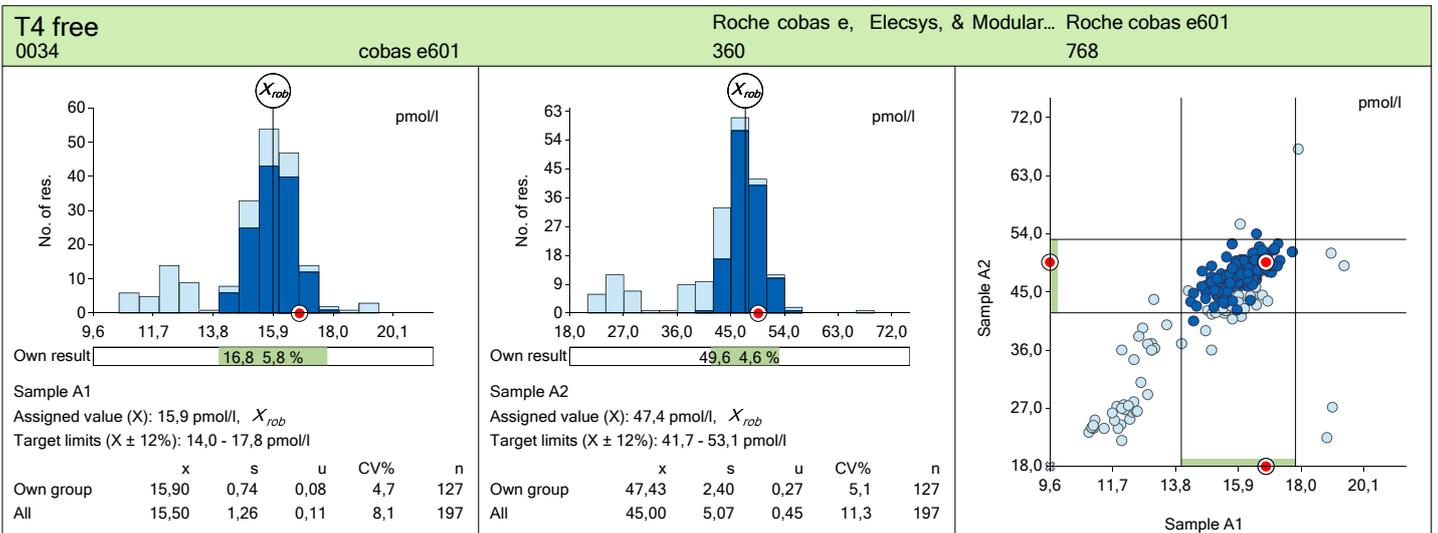
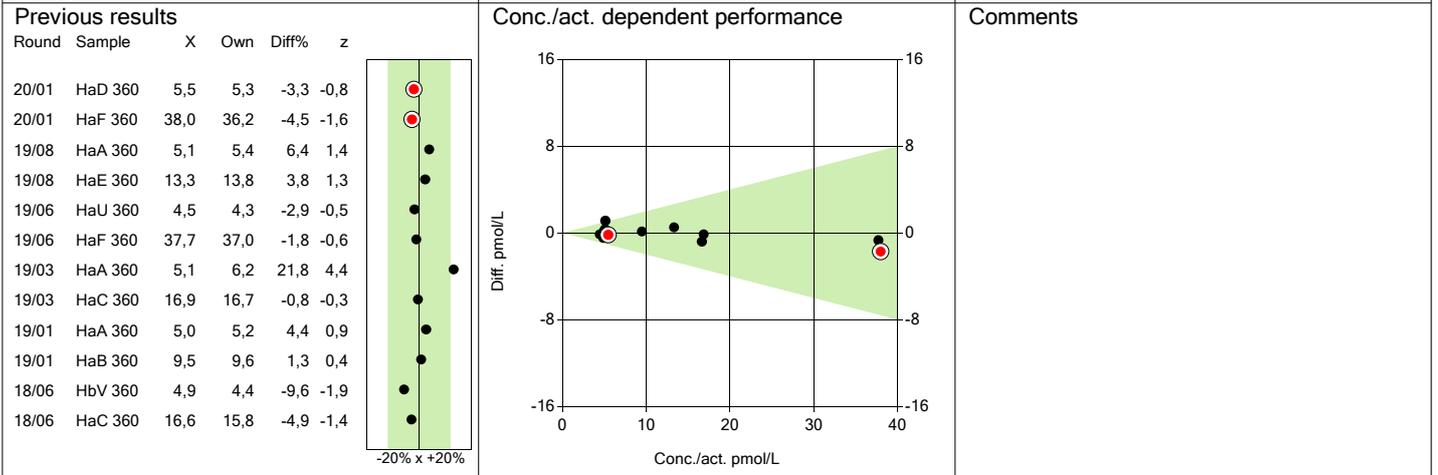
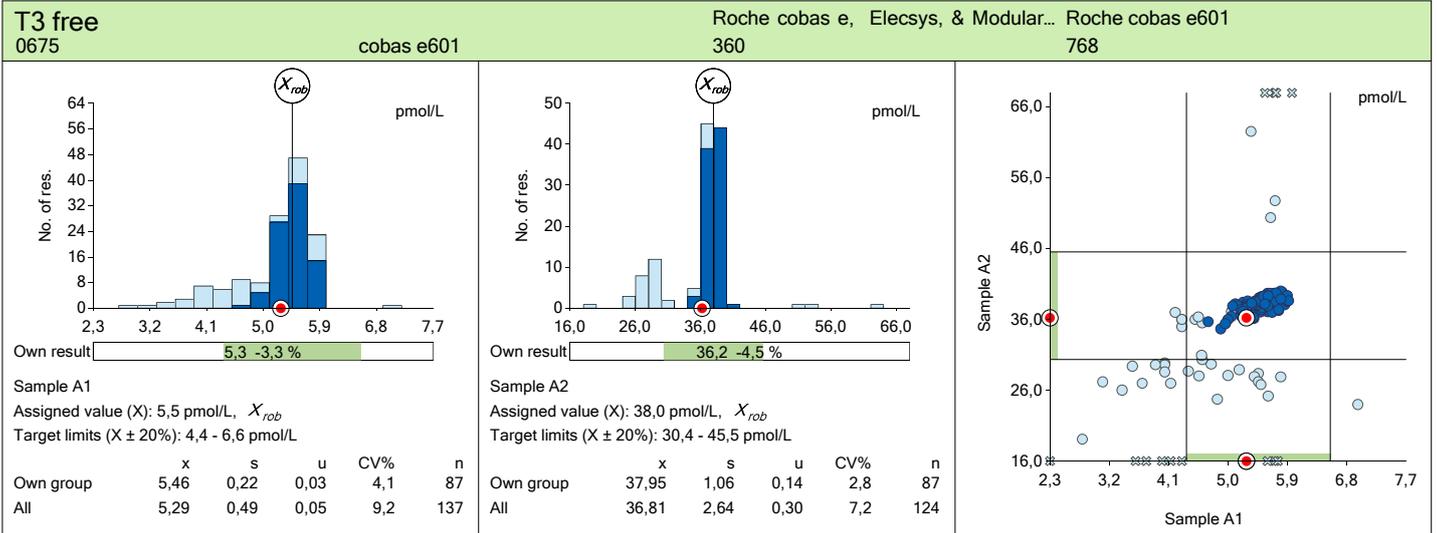
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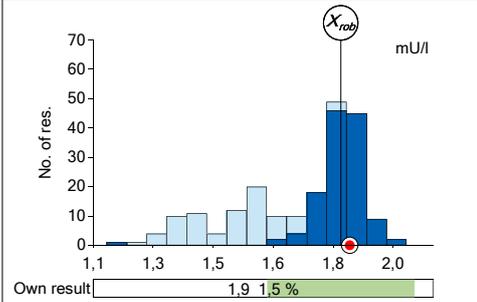
[info@labquality.fi](mailto:info@labquality.fi)  
[www.labquality.fi](http://www.labquality.fi)





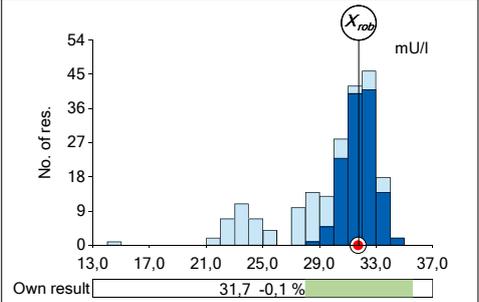


TSH 0033 cobas e601 Roche cobas e, Elecsys, & Modular... Roche cobas e601 360 768



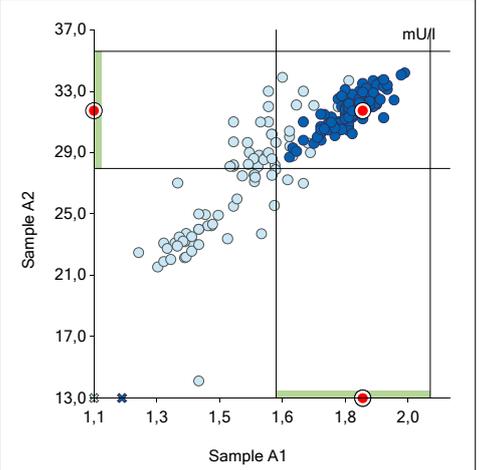
Sample A1  
Assigned value (X): 1,8 mU/l,  $X_{rob}$   
Target limits (X ± 12%): 1,6 - 2,1 mU/l

	x	s	u	CV%	n
Own group	1,84	0,06	0,01	3,2	127
All	1,73	0,18	0,02	10,6	206



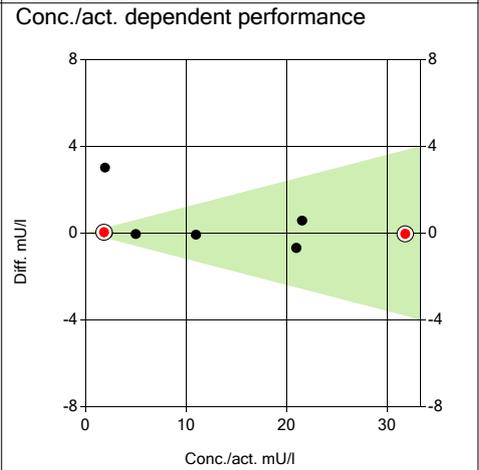
Sample A2  
Assigned value (X): 31,8 mU/l,  $X_{rob}$   
Target limits (X ± 12%): 28,0 - 35,6 mU/l

	x	s	u	CV%	n
Own group	31,78	1,06	0,12	3,3	126
All	30,43	2,57	0,22	8,4	205



Previous results

Round	Sample	X	Own	Diff%	z
20/01	HaD 360	1,8	1,9	1,5	0,5
20/01	HaF 360	31,8	31,7	-0,1	0,0
19/08	HaA 360	2,0	1,9	-3,4	-1,0
19/08	HaE 360	11,0	10,9	-0,8	-0,2
19/06	HaU 360	2,2	2,2	-0,8	-0,2
19/06	HaF 360	32,0	31,9	-0,4	-0,1
19/03	HaA 360	1,9	5,0	154,8	37,1
19/03	HaC 360	21,5	22,1	2,6	0,6
19/01	HaA 360	1,9	1,9	1,0	0,3
19/01	HaB 360	5,0	5,0	-1,1	-0,4
18/06	HbV 360	1,8	1,8	-0,9	-0,3
18/06	HaC 360	21,0	20,3	-3,3	-1,1



Comments

## Participants

175 participants from 13 countries.

## Report info

Assigned value (target value) calculation and its uncertainty

Your own result should be compared to others using the same method.

The assigned values ( $X_{rob}$ ) are calculated according to the robust procedure described in the standard ISO 13528 (Statistical methods for use in proficiency testing by interlaboratory comparisons, Annex C, Algorithm A).

The standard uncertainty of the assigned value is expressed as  $1.25 \times$  the standard error of mean (SEM) and marked as "u" in numerical summary. Due to its iterative mode algorithm A adds the uncertainty of the assigned value and with this factor we want to adjust uncertainty accordingly.

In case there are 2-12 results in a method group, the robust calculation is not used but assigned values ( $X_{pt}$ ) are means of the results where results deviating more than  $\pm 3 \times$  standard deviation from the median are removed. The standard uncertainty (u) of the assigned value is reported as standard error of the mean (SEM). Additionally, if the measurement uncertainty of the target value is too large ( $u > 0.1 \times$  maximum allowable error) an automatic text is printed on the report: "The uncertainty of the assigned value is not negligible, and evaluations could be affected."

Please notice also that for groups that have only 1 result only the client's own result is shown. No target value (except for reference method values) is calculated, no target areas are shown.

### Z score

In case there are 2-5 results in a method group, no z-score is calculated, and a text is printed on the report: "Due to the small number of results, the z score is not calculated." In case there are 6-12 results, the report has a text: "Z score is uncertain due to the small number of observations."

Results reported with  $< \text{tai} >$  -signs cannot be included in the statistics.

For information on report interpretation and performance evaluation, please see the "EQAS Interpretation guidelines" in LabScala User instructions (top right corner ?Help link).

**NUMERICAL SUMMARY**      **Hormone Determinations A 2020/01**

Analyte	Method group	x	med	s	CV%	u	Min	Max	Number
<b>Sample A1</b>									
<b>Ferritin, µg/l</b>									
Abbott Alinity		117,9	118	6,1	5,2	1,9	109	127	10
Abbott Architect		113,7	113	5,5	4,9	1,5	98	128	20
Beckman Coulter Access & Unicel		90,7	81	19,4	21,4	11,2	79	113	3
bioMerieux Vidas		63,4	63	-	-	-	-	-	1
Roche cobas e, Elecsys, & Modular E		115,8	116	6,1	5,3	0,8	98	129	95
Roche Cobas Integra		123,0	123	0,0	0,0	0,0	123	123	2
Roche Tina-quant		132,0	132	-	-	-	-	-	1
Siemens Advia Centaur & Atellica		99,3	100	4,9	4,9	1,1	84	109	30
Siemens Dimension & Vista		87,5	91	15,1	17,3	5,4	53	101	8
Siemens Immulite 1000, 2000, 2500		96,3	96	-	-	-	-	-	1
Tosoh AIA		80,0	80	-	-	-	-	-	1
<b>All</b>		<b>111,6</b>	<b>113</b>	<b>10,5</b>	<b>9,4</b>	<b>0,8</b>	<b>53</b>	<b>132</b>	<b>172</b>
<b>Folate, nmol/l</b>									
Abbott Alinity		15,14	14,0	3,49	23,1	1,43	11,0	20,7	6
Abbott Architect		10,72	10,8	1,21	11,3	0,32	7,2	13,0	22
Beckman Coulter Access		8,53	8,5	-	-	-	-	-	1
Beckman Coulter UniCel		10,45	10,5	0,64	6,1	0,45	10,0	10,9	2
Roche Folate III restandardized		7,19	7,1	0,96	13,4	0,13	4,7	14,8	89
Siemens Advia Centaur & Atellica		8,58	8,5	0,82	9,6	0,20	7,3	10,0	25
Siemens Dimension & Vista		5,14	5,0	0,37	7,3	0,12	4,6	5,9	10
Siemens Immulite 1000, 2000, 2500		8,06	8,1	-	-	-	-	-	1
Tosoh AIA		8,33	8,3	-	-	-	-	-	1
<b>All</b>		<b>7,94</b>	<b>7,7</b>	<b>1,86</b>	<b>23,5</b>	<b>0,15</b>	<b>4,6</b>	<b>20,7</b>	<b>157</b>
<b>hCG intact, U/L</b>									
Roche cobas e, Elecsys, & Modular E		2,7	3	0,1	2,8	0,0	3	3	3
Tosoh AIA		4,1	4	-	-	-	-	-	1
<b>All</b>		<b>3,1</b>	<b>3</b>	<b>0,8</b>	<b>25,2</b>	<b>0,4</b>	<b>3</b>	<b>4</b>	<b>4</b>
<b>hCG total, U/L</b>									
Abbott Alinity		3,1	3	0,2	5,9	0,1	3	3	4
Abbott Architect		2,6	3	0,5	19,3	0,2	2	3	14
Beckman Coulter Access & Unicel		3,2	3	-	-	-	-	-	1
bioMerieux Vidas		4,2	4	0,0	0,0	0,0	4	4	2
Roche cobas e, Elecsys, & Modular E		2,9	3	0,1	4,8	0,0	2	11	99
Siemens Advia Centaur & Atellica		4,5	4	0,8	16,8	0,2	2	6	26
Siemens Dimension & Vista		5,0	5	0,1	2,5	0,0	5	5	8
Siemens Immulite 1000, 2000, 2500		5,3	5	1,7	31,5	1,2	4	6	2
Tosoh AIA		4,7	5	-	-	-	-	-	1
<b>All</b>		<b>3,2</b>	<b>3</b>	<b>0,7</b>	<b>22,1</b>	<b>0,1</b>	<b>2</b>	<b>11</b>	<b>157</b>
<b>Holotranscobalamin, pmol/l</b>									
Abbott Alinity		71,2	71	5,1	7,2	3,6	68	75	2
Abbott Architect		63,6	65	7,1	11,2	3,2	56	72	5
Roche cobas e, Elecsys, & Modular E		72,9	73	1,4	1,9	0,4	66	76	16
Siemens Advia Centaur & Atellica		94,2	87	14,4	15,2	6,4	81	113	5
<b>All</b>		<b>73,1</b>	<b>73</b>	<b>6,0</b>	<b>8,2</b>	<b>1,1</b>	<b>56</b>	<b>113</b>	<b>28</b>
<b>T3, nmol/l</b>									
Abbott Alinity		1,43	1,4	-	-	-	-	-	1
Abbott Architect		1,39	1,4	0,12	8,7	0,08	1,3	1,5	2
Beckman Coulter Access & Unicel		1,60	1,6	-	-	-	-	-	1
Perkin Elmer Delfia/Auto Delfia		1,95	2,0	-	-	-	-	-	1

**NUMERICAL SUMMARY**      **Hormone Determinations A 2020/01, Sample A1**

Analyte	Method group	x	med	s	CV%	u	Min	Max	Number
<b>T3, nmol/l</b>									
Roche cobas e, Elecsys, & Modular E		1,81	1,8	0,09	5,2	0,03	1,7	1,9	14
Siemens Advia Centaur & Atellica		1,83	1,8	0,16	8,6	0,05	1,7	2,1	11
Siemens Immulite 1000, 2000, 2500		1,34	1,3	-	-	-	-	-	1
<b>All</b>		<b>1,77</b>	<b>1,8</b>	<b>0,16</b>	<b>9,0</b>	<b>0,03</b>	<b>1,3</b>	<b>2,1</b>	<b>31</b>
<b>T3 free, pmol/L</b>									
Abbott Alinity		4,08	4,1	0,48	11,7	0,18	3,4	4,7	7
Abbott Architect		3,97	4,0	0,55	13,9	0,20	2,8	4,6	12
Beckman Coulter Access & Unicel		4,84	4,8	-	-	-	-	-	1
bioMerieux Vidas		4,56	4,6	-	-	-	-	-	1
Roche cobas e, Elecsys, & Modular E		5,46	5,4	0,22	4,1	0,03	4,7	5,9	87
Siemens Advia Centaur & Atellica		5,59	5,6	0,21	3,8	0,06	5,0	6,0	18
Siemens Dimension & Vista		4,48	4,4	0,27	6,1	0,10	4,2	5,1	8
Siemens Immulite 1000, 2000, 2500		6,29	6,3	0,96	15,3	0,68	5,6	7,0	2
Tosoh AIA		3,55	3,6	-	-	-	-	-	1
<b>All</b>		<b>5,29</b>	<b>5,4</b>	<b>0,49</b>	<b>9,2</b>	<b>0,04</b>	<b>2,8</b>	<b>7,0</b>	<b>137</b>
<b>T4, nmol/l</b>									
Abbott Alinity		82,0	82	-	-	-	-	-	1
Abbott Architect		76,1	77	1,0	1,3	0,6	75	77	3
Perkin Elmer Delfia/Auto Delfia		79,4	79	-	-	-	-	-	1
Roche cobas e, Elecsys, & Modular E		81,8	82	2,6	3,1	0,9	79	86	13
Siemens Advia Centaur & Atellica		78,1	80	3,6	4,6	1,1	71	82	10
Siemens Immulite 1000, 2000, 2500		79,7	80	-	-	-	-	-	1
<b>All</b>		<b>80,0</b>	<b>80</b>	<b>3,0</b>	<b>3,8</b>	<b>0,6</b>	<b>71</b>	<b>86</b>	<b>29</b>
<b>T4 free, pmol/l</b>									
Abbott Alinity		11,82	12,0	0,51	4,3	0,72	10,9	18,9	9
Abbott Architect		11,96	12,0	0,80	6,7	0,25	11,0	19,0	16
Beckman Coulter Access & Unicel		12,96	12,9	0,42	3,2	0,21	12,6	13,5	4
bioMerieux Vidas		15,96	16,0	-	-	-	-	-	1
Perkin Elmer Delfia/Auto Delfia		17,90	17,9	-	-	-	-	-	1
Roche cobas e, Elecsys, & Modular E		15,90	15,9	0,74	4,7	0,08	14,3	17,7	127
Siemens Advia Centaur & Atellica		15,76	15,8	0,67	4,2	0,16	14,8	16,9	26
Siemens Dimension & Vista		12,92	13,0	0,58	4,5	0,20	12,0	14,0	8
Siemens Immulite 1000, 2000, 2500		18,48	19,0	1,30	7,0	0,75	17,0	19,4	3
Tosoh AIA		14,22	14,2	-	-	-	-	-	1
<b>All</b>		<b>15,50</b>	<b>15,7</b>	<b>1,26</b>	<b>8,1</b>	<b>0,09</b>	<b>10,9</b>	<b>19,4</b>	<b>197</b>
<b>TSH, mU/l</b>									
Abbott Alinity		1,37	1,4	0,04	3,1	0,01	1,3	1,5	10
Abbott Architect		1,38	1,4	0,07	5,4	0,02	1,2	1,5	18
Beckman Coulter Access & Unicel		1,53	1,5	0,04	2,4	0,02	1,5	1,6	4
bioMerieux Vidas		1,67	1,7	0,08	5,1	0,06	1,6	1,7	2
Perkin Elmer Delfia/Auto Delfia		1,83	1,8	-	-	-	-	-	1
Roche cobas e, Elecsys, & Modular E		1,84	1,8	0,06	3,2	0,01	1,2	2,0	127
Siemens Advia Centaur & Atellica		1,59	1,6	0,07	4,5	0,02	1,3	1,8	32
Siemens Dimension & Vista		1,59	1,6	0,06	3,8	0,02	1,5	1,7	8
Siemens Immulite 1000, 2000, 2500		1,75	1,7	0,09	5,1	0,05	1,7	1,9	3
Tosoh AIA		1,61	1,6	-	-	-	-	-	1
<b>All</b>		<b>1,73</b>	<b>1,8</b>	<b>0,18</b>	<b>10,6</b>	<b>0,01</b>	<b>1,2</b>	<b>2,0</b>	<b>206</b>
<b>Vit-B12, pmol/l</b>									
Abbott Alinity		265,2	258	30,6	11,6	11,6	233	306	7
Abbott Architect		234,5	236	12,6	5,4	3,7	210	251	18
Beckman Coulter Access		227,1	227	-	-	-	-	-	1

**NUMERICAL SUMMARY**
**Hormone Determinations A 2020/01, Sample A1**

Analyte	Method group	x	med	s	CV%	u	Min	Max	Number
<b>Vit-B12, pmol/l</b>									
	Beckman Coulter UniCel	179,5	180	24,7	13,8	17,5	162	197	2
	Roche cobas e, Elecsys, & Modular E	266,7	269	15,7	5,9	2,0	159	370	94
	Siemens Advia Centaur & Atellica	245,0	243	21,4	8,7	5,2	202	293	26
	Siemens Dimension & Vista	231,8	230	19,0	8,2	6,3	210	273	9
	Siemens Immulite 2000	223,4	223	20,6	9,2	14,6	209	238	2
	Tosoh AIA	215,4	215	-	-	-	-	-	1
	<b>All</b>	<b>255,5</b>	<b>257</b>	<b>24,7</b>	<b>9,7</b>	<b>2,0</b>	<b>159</b>	<b>370</b>	<b>160</b>

**Sample A2**

<b>Ferritin, µg/l</b>									
	Abbott Alinity	717,1	714	29,9	4,2	9,4	667	766	10
	Abbott Architect	691,1	695	44,0	6,4	12,3	592	778	20
	Beckman Coulter Access & Unicel	508,5	465	101,5	20,0	58,6	436	625	3
	bioMerieux Vidas	490,0	490	-	-	-	-	-	1
	Roche cobas e, Elecsys, & Modular E	616,4	618	30,4	4,9	3,9	548	713	95
	Roche Cobas Integra	643,5	644	2,1	0,3	1,5	642	645	2
	Roche Tina-quant	706,0	706	-	-	-	-	-	1
	Siemens Advia Centaur & Atellica	585,1	584	38,8	6,6	8,9	485	654	30
	Siemens Dimension & Vista	566,9	574	37,4	6,6	13,2	510	612	8
	Siemens Immulite 1000, 2000, 2500	532,0	532	-	-	-	-	-	1
	Tosoh AIA	458,7	459	-	-	-	-	-	1
	<b>All</b>	<b>619,4</b>	<b>618</b>	<b>49,8</b>	<b>8,0</b>	<b>3,8</b>	<b>436</b>	<b>778</b>	<b>172</b>

<b>Folate, nmol/l</b>									
	Abbott Alinity	42,21	42,5	3,20	7,6	1,30	36,7	45,8	6
	Abbott Architect	36,57	35,7	3,48	9,5	0,93	31,0	45,0	22
	Beckman Coulter Access	27,69	27,7	-	-	-	-	-	1
	Beckman Coulter UniCel	36,50	36,5	0,99	2,7	0,70	35,8	37,2	2
	Roche Folate III restandardized	25,67	25,6	1,82	7,1	0,24	22,0	68,5	90
	Siemens Advia Centaur & Atellica	27,92	28,1	2,37	8,5	0,58	24,3	54,8	26
	Siemens Dimension & Vista	16,30	16,0	1,03	6,3	0,33	15,0	18,0	10
	Siemens Immulite 1000, 2000, 2500	27,18	27,2	-	-	-	-	-	1
	Tosoh AIA	18,79	18,8	-	-	-	-	-	1
	<b>All</b>	<b>27,39</b>	<b>26,4</b>	<b>4,69</b>	<b>17,1</b>	<b>0,37</b>	<b>15,0</b>	<b>68,5</b>	<b>159</b>

<b>hCG intact, U/L</b>									
	Roche cobas e, Elecsys, & Modular E	322,0	322	0,3	0,1	0,2	322	322	3
	Tosoh AIA	504,0	504	-	-	-	-	-	1
	<b>All</b>	<b>327,6</b>	<b>322</b>	<b>12,7</b>	<b>3,9</b>	<b>6,3</b>	<b>322</b>	<b>504</b>	<b>4</b>

<b>hCG total, U/L</b>									
	Abbott Alinity	273,8	272	10,7	3,9	4,8	259	287	5
	Abbott Architect	271,7	272	7,4	2,7	2,4	259	282	15
	Beckman Coulter Access & Unicel	279,6	280	-	-	-	-	-	1
	bioMerieux Vidas	541,2	541	33,2	6,1	23,5	518	565	2
	Roche cobas e, Elecsys, & Modular E	333,6	334	12,8	3,8	1,6	298	505	99
	Siemens Advia Centaur & Atellica	277,6	277	13,6	4,9	3,3	257	318	26
	Siemens Dimension & Vista	488,4	490	14,7	3,0	5,2	460	508	8
	Siemens Immulite 1000, 2000, 2500	532,5	533	57,3	10,8	40,5	492	573	2
	Tosoh AIA	488,3	488	-	-	-	-	-	1
	<b>All</b>	<b>320,1</b>	<b>330</b>	<b>37,6</b>	<b>11,7</b>	<b>3,0</b>	<b>257</b>	<b>573</b>	<b>159</b>

<b>Holotranscobalamin, pmol/l</b>									
	Abbott Architect	276,3	264	41,6	15,1	24,0	242	323	3
	Roche cobas e, Elecsys, & Modular E	319,7	322	11,5	3,6	4,7	300	334	6

**NUMERICAL SUMMARY**      **Hormone Determinations A 2020/01, Sample A2**

Analyte	Method group	x	med	s	CV%	u	Min	Max	Number
<b>Holotranscobalamin, pmol/l</b>									
<b>All</b>		<b>307,4</b>	<b>319</b>	<b>30,5</b>	<b>9,9</b>	<b>10,2</b>	<b>242</b>	<b>334</b>	<b>9</b>
<b>T3, nmol/l</b>									
Abbott Alinity		7,09	7,1	-	-	-	-	-	1
Abbott Architect		7,20	7,2	1,70	23,6	1,20	6,0	8,4	2
Beckman Coulter Access & Unicel		8,35	8,4	-	-	-	-	-	1
Perkin Elmer Delfia/Auto Delfia		8,28	8,3	-	-	-	-	-	1
Roche cobas e, Elecsys, & Modular E		9,02	9,0	0,39	4,3	0,13	8,4	9,9	14
Siemens Advia Centaur & Atellica		9,72	9,2	2,38	24,5	0,75	7,6	16,2	10
Siemens Immulite 1000, 2000, 2500		8,04	8,0	-	-	-	-	-	1
<b>All</b>		<b>8,89</b>	<b>8,9</b>	<b>0,68</b>	<b>7,7</b>	<b>0,12</b>	<b>6,0</b>	<b>16,2</b>	<b>30</b>
<b>T3 free, pmol/L</b>									
Abbott Alinity		28,28	28,8	1,70	6,0	0,76	26,0	29,9	5
Abbott Architect		27,90	28,7	3,55	12,7	1,18	19,1	30,9	9
Beckman Coulter Access & Unicel		24,74	24,7	-	-	-	-	-	1
bioMerieux Vidas		28,03	28,0	-	-	-	-	-	1
Roche cobas e, Elecsys, & Modular E		37,95	38,0	1,06	2,8	0,14	34,7	40,0	87
Siemens Advia Centaur & Atellica		36,10	28,3	13,56	37,6	4,29	26,8	62,6	10
Siemens Dimension & Vista		36,13	36,0	0,71	2,0	0,25	35,0	37,1	8
Siemens Immulite 1000, 2000, 2500		24,60	24,6	0,85	3,4	0,60	24,0	25,2	2
Tosoh AIA		29,40	29,4	-	-	-	-	-	1
<b>All</b>		<b>36,81</b>	<b>37,5</b>	<b>2,64</b>	<b>7,2</b>	<b>0,24</b>	<b>19,1</b>	<b>62,6</b>	<b>124</b>
<b>T4, nmol/l</b>									
Abbott Alinity		183,8	184	-	-	-	-	-	1
Abbott Architect		185,1	186	7,9	4,3	4,6	177	193	3
Perkin Elmer Delfia/Auto Delfia		180,0	180	-	-	-	-	-	1
Roche cobas e, Elecsys, & Modular E		193,6	195	7,3	3,8	2,5	179	203	13
Siemens Advia Centaur & Atellica		211,6	204	29,0	13,7	9,7	176	272	9
Siemens Immulite 1000, 2000, 2500		203,0	203	-	-	-	-	-	1
<b>All</b>		<b>194,6</b>	<b>195</b>	<b>11,3</b>	<b>5,8</b>	<b>2,1</b>	<b>176</b>	<b>272</b>	<b>28</b>
<b>T4 free, pmol/l</b>									
Abbott Alinity		24,57	24,2	1,82	7,4	0,58	22,0	27,3	10
Abbott Architect		26,34	26,5	2,01	7,6	0,63	23,9	31,0	16
Beckman Coulter Access & Unicel		40,32	39,7	2,46	6,1	1,23	38,1	43,8	4
bioMerieux Vidas		55,50	55,5	-	-	-	-	-	1
Perkin Elmer Delfia/Auto Delfia		67,10	67,1	-	-	-	-	-	1
Roche cobas e, Elecsys, & Modular E		47,43	47,3	2,40	5,1	0,27	40,5	54,0	127
Siemens Advia Centaur & Atellica		42,91	42,9	1,75	4,1	0,43	36,0	45,9	26
Siemens Dimension & Vista		36,21	36,1	0,83	2,3	0,29	34,5	37,0	8
Siemens Immulite 1000, 2000, 2500		49,44	49,0	1,40	2,8	0,81	48,3	51,0	3
Tosoh AIA		45,19	45,2	-	-	-	-	-	1
<b>All</b>		<b>45,00</b>	<b>46,0</b>	<b>5,07</b>	<b>11,3</b>	<b>0,36</b>	<b>22,0</b>	<b>67,1</b>	<b>197</b>
<b>TSH, mU/l</b>									
Abbott Alinity		23,40	23,1	0,96	4,1	0,30	22,2	25,0	10
Abbott Architect		23,13	23,1	1,16	5,0	0,34	14,1	25,5	18
Beckman Coulter Access & Unicel		27,14	27,2	0,88	3,2	0,44	26,0	28,1	4
bioMerieux Vidas		29,80	29,8	3,21	10,8	2,27	27,5	32,1	2
Perkin Elmer Delfia/Auto Delfia		33,70	33,7	-	-	-	-	-	1
Roche cobas e, Elecsys, & Modular E		31,78	31,9	1,06	3,3	0,12	28,7	34,2	126
Siemens Advia Centaur & Atellica		28,53	28,6	1,37	4,8	0,30	23,7	32,0	32
Siemens Dimension & Vista		31,64	31,5	1,76	5,6	0,62	28,2	33,9	8
Siemens Immulite 1000, 2000, 2500		31,13	32,1	1,85	5,9	1,07	29,0	32,3	3

**NUMERICAL SUMMARY**
**Hormone Determinations A 2020/01, Sample A2**

Analyte	Method group	x	med	s	CV%	u	Min	Max	Number
<b>TSH, mU/l</b>									
	Tosoh AIA	28,60	28,6	-	-	-	-	-	1
	<b>All</b>	<b>30,43</b>	<b>31,0</b>	<b>2,57</b>	<b>8,4</b>	<b>0,18</b>	<b>14,1</b>	<b>34,2</b>	<b>205</b>
<b>Vit-B12, pmol/l</b>									
	Abbott Alinity	559,0	542	46,1	8,2	17,4	518	656	7
	Abbott Architect	526,2	523	29,7	5,6	8,7	478	573	18
	Beckman Coulter Access	522,0	522	-	-	-	-	-	1
	Beckman Coulter UniCel	424,5	425	64,3	15,2	45,5	379	470	2
	Roche cobas e, Elecsys, & Modular E	570,6	570	20,8	3,7	2,7	439	667	94
	Siemens Advia Centaur & Atellica	552,9	555	32,4	5,9	8,1	463	637	25
	Siemens Dimension & Vista	495,0	497	17,0	3,4	5,4	460	523	10
	Siemens Immulite 2000	615,9	616	34,0	5,5	24,1	592	640	2
	Tosoh AIA	500,2	500	-	-	-	-	-	1
	<b>All</b>	<b>556,9</b>	<b>560</b>	<b>34,5</b>	<b>6,2</b>	<b>2,7</b>	<b>379</b>	<b>667</b>	<b>160</b>

**Participants**

175 participants from 13 countries.

**Report info**

Assigned value (target value) calculation and its uncertainty

Your own result should be compared to others using the same method.

The assigned values ( $X_{rob}$ ) are calculated according to the robust procedure described in the standard ISO 13528 (Statistical methods for use in proficiency testing by interlaboratory comparisons, Annex C, Algorithm A).

The standard uncertainty of the assigned value is expressed as  $1.25 \times$  the standard error of mean (SEM) and marked as "u" in numerical summary. Due to its iterative mode algorithm A adds the uncertainty of the assigned value and with this factor we want to adjust uncertainty accordingly.

In case there are 2-12 results in a method group, the robust calculation is not used but assigned values ( $X_{pt}$ ) are means of the results where results deviating more than  $\pm 3 \times$  standard deviation from the median are removed. The standard uncertainty (u) of the assigned value is reported as standard error of the mean (SEM). Additionally, if the measurement uncertainty of the target value is too large ( $u > 0.1 \times$  maximum allowable error) an automatic text is printed on the report: "The uncertainty of the assigned value is not negligible, and evaluations could be affected."

Please notice also that for groups that have only 1 result only the client's own result is shown. No target value (except for reference method values) is calculated, no target areas are shown.

**Z score**

In case there are 2-5 results in a method group, no z-score is calculated, and a text is printed on the report: "Due to the small number of results, the z score is not calculated." In case there are 6-12 results, the report has a text: "Z score is uncertain due to the small number of observations."

Results reported with  $< \text{tai} >$  -signs cannot be included in the statistics.

For information on report interpretation and performance evaluation, please see the "EQAS Interpretation guidelines" in LabScala User instructions (top right corner ?Help link).

External Quality Assessment Scheme

## Hormones A: Basic analytes of hormone and immunochemistry Round 1, 2020

### Specimens

Sample S001 (LQ732320011) and sample S002 (LQ732320012) were lyophilized human serum samples.

Based on the previous tests and the results of this round, the samples are homogeneous, stable and suitable for the external quality assessment scheme.

The materials were sent without temperature control packaging.

### Report info

Please see the description of the data analysis on the last page of the laboratory-specific histogram and Global report.

### Comments

It is important to read the Final report first, because it contains important information of the samples and results in each round.

The samples have been used before on the round. The sample history can be seen in the client specific report with the histogram.

### Folate

Concentration of sample A1 was rather low (mean = 7.94 nmol/L) and because of that the variation of the results reported from different method groups was high (CV 23.1 %; n=157) 27 results were autoexcluded from calculation. Concentration of folate in sample A2 was higher (mean 27.39 nmol/L), and the variation of the results reported from different method groups was smaller. There were still a lot of excluded results (CV 7.1%; n=159) and 37 results were excluded from calculation.

### General

A small number of exceptionally high or low results were reported for some analytes. In these cases, the specimens should be re-analysed, and the calibration should be checked as well.

### End of report

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2020-03-11

### FINAL REPORT

Product no. 2300, 2300S

Samples sent	2020-02-10
Round closed	2020-02-27
Final report	2020-03-11

### Request for correction

Typing errors in laboratory's result forms are on laboratory's responsibility. Labquality accepts responsibility only for result processing. Requests must be notified by writing within three weeks from the date of this letter.

### Authorized by

EQA Coordinator  
Päivi Ranta  
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### Expert

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