

External Quality Assessment Scheme

## Angiotensin convertase (ACE), Round 1, 2023

### Specimens

Please find enclosed 2 human serum samples S001 and S002, each 1 mL. Sample S001 is liquid and sample S002 is lyophilized.

### 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

ACE

### Storage and use

Sample S001 is ready for use. Please analyse the liquid sample as soon as possible, within a day of the sample arrival (store at +2 ... +8 °C). If you analyse the sample later, please divide the serum into parts for the determinations and freeze.

Store the lyophilized sample S002 at +2 ... +8 °C before reconstitution. Add 1.0 mL of reagent grade water into sample 002. Replace the stopper and swirl gently. Allow the bottle to stand for 5 minutes. Swirl the contents until homogeneous and control the solution. Do not let the sample foam. Let the sample reach the room temperature before analysis.

The reconstituted sample can be stored one week in the refrigerator.

### Result reporting

Please enter the results and methods via LabScala (www.labscala.com). If you cannot find your instrument or reagent from the registry, please contact the EQA Coordinator.

S001



S002



2023-05-15

### INSTRUCTIONS

Product no. 2210  
LQ750223011-012/FI, DE

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

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The results should be reported no later than  
**June 12, 2023.**

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### Inquiries

EQA Coordinator  
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### Labquality Oy

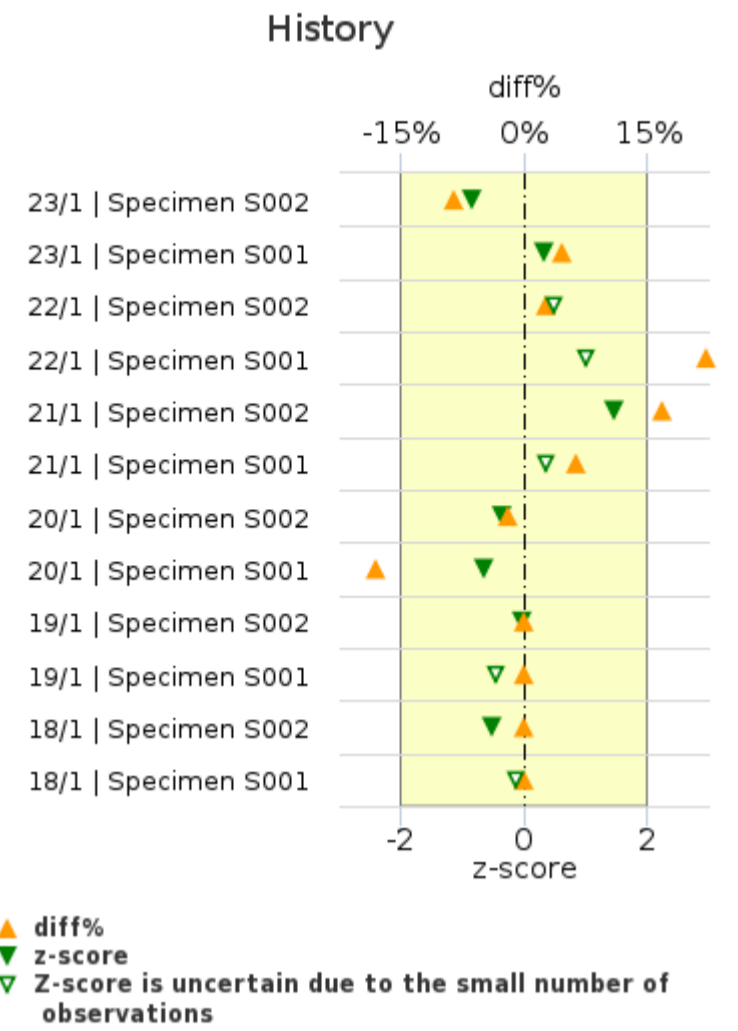
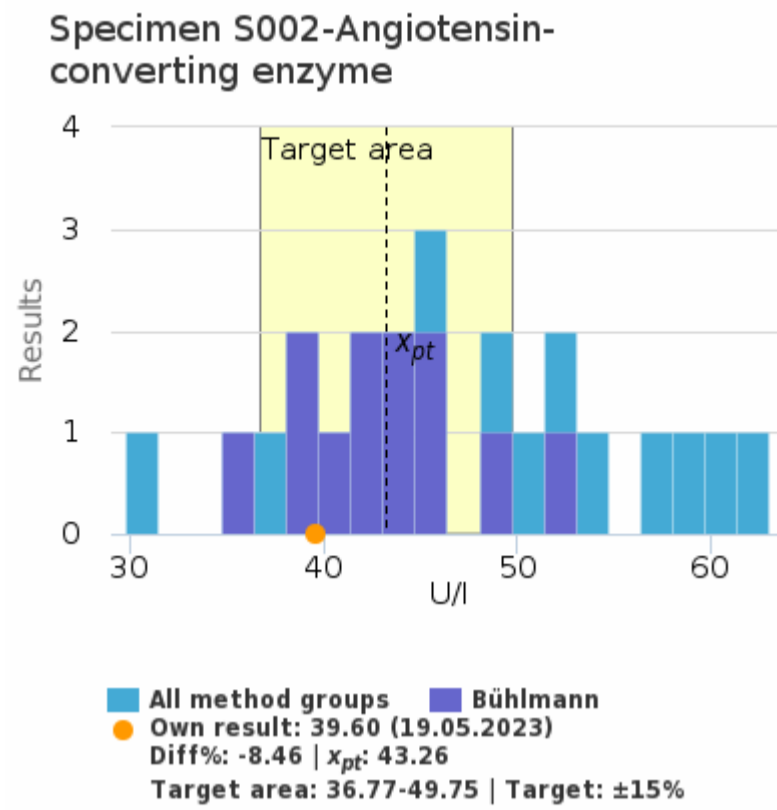
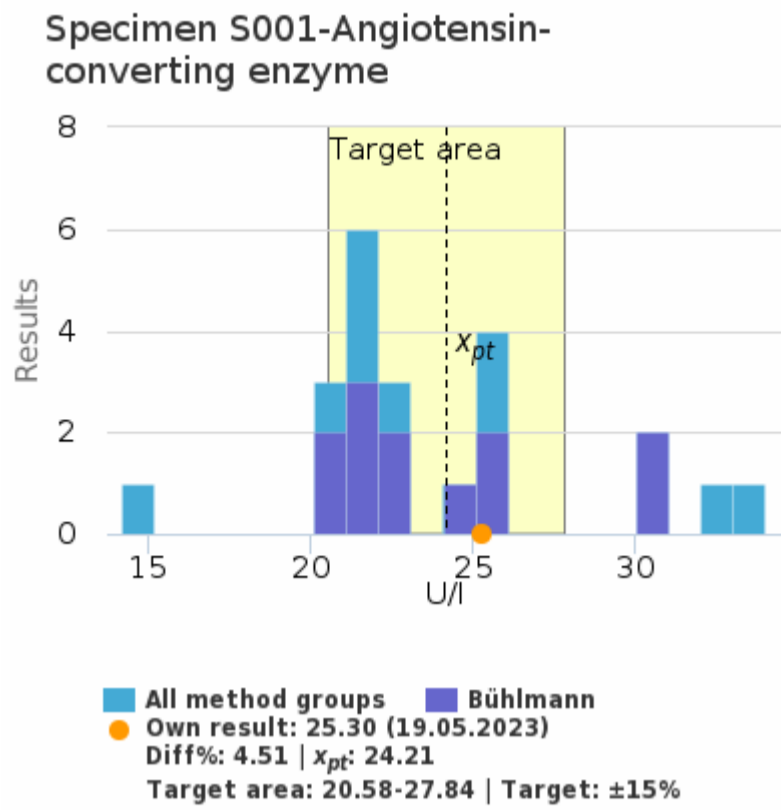
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Angiotensin-converting enzyme | ROCHE cobas c501



	$x_{pt}$	sd	SEM	CV%	n
Bühlmann	24.21 U/l	3.44	0.99	14.2	12
All methods	24.21 U/l	4.56	0.97	18.8	22

	$x_{pt}$	sd	SEM	CV%	n
Bühlmann	43.26 U/l	4.42	1.28	10.2	12
All methods	46.80 U/l	8.42	1.76	18.0	23

Round	Sample	$x_{pt}$	Result	diff%	z-score
23/1	Specimen S002	43.26	39.60	-8.46%	-0.83
23/1	Specimen S001	24.21	25.30	4.51%	0.32
22/1	Specimen S002	91.54	94.00	2.69%	0.49
22/1	Specimen S001	10.02	14.00	39.75%	1.01
21/1	Specimen S002	84.54	98.70	16.75%	1.47
21/1	Specimen S001	8.83	9.40	6.43%	0.37
20/1	Specimen S002	100.34	98.30	-2.04%	-0.35
20/1	Specimen S001	9.38	7.70	-17.95%	-0.65
19/1	Specimen S002	106.96	106.80	-0.15%	-0.03
19/1	Specimen S001	10.68	9.50	-11.08%	-0.46
18/1	Specimen S002	108.73	105.20	-3.25%	-0.51
18/1	Specimen S001	13.02	12.70	-2.49%	-0.12

Report info

Participants

25 participants from 12 countries.

Report info

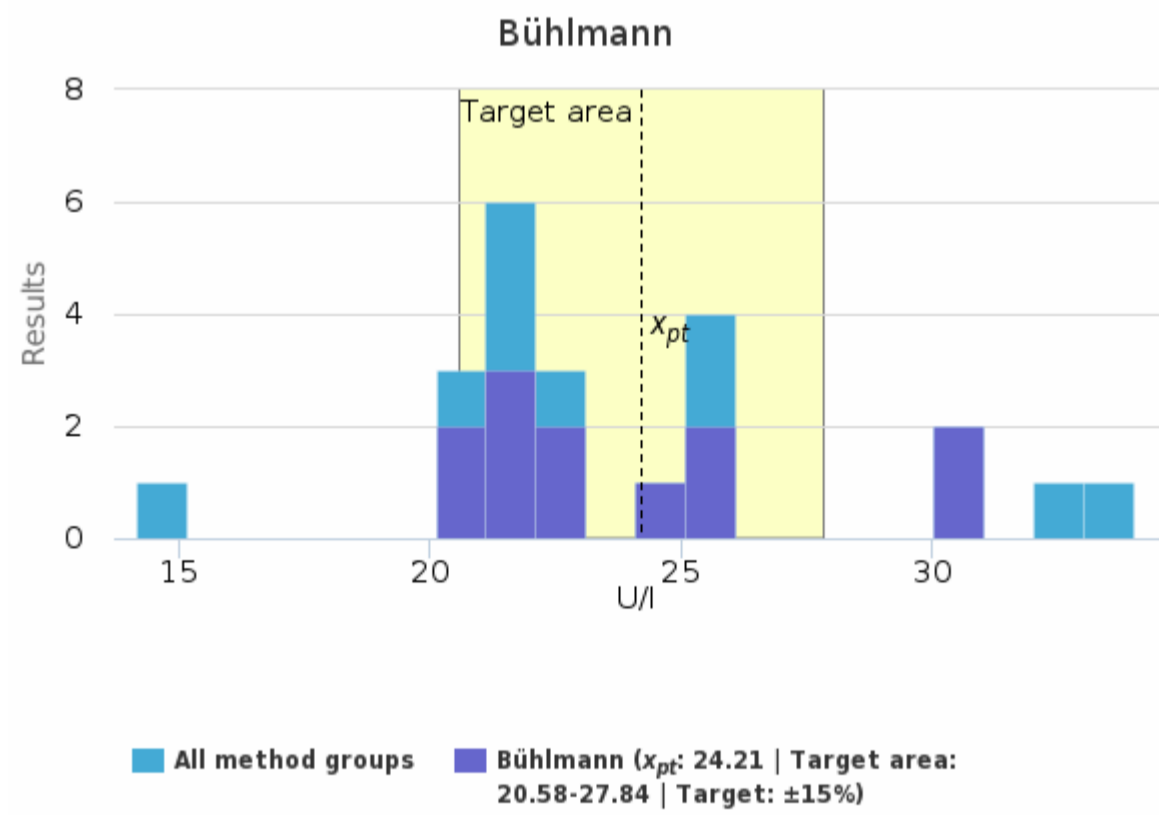
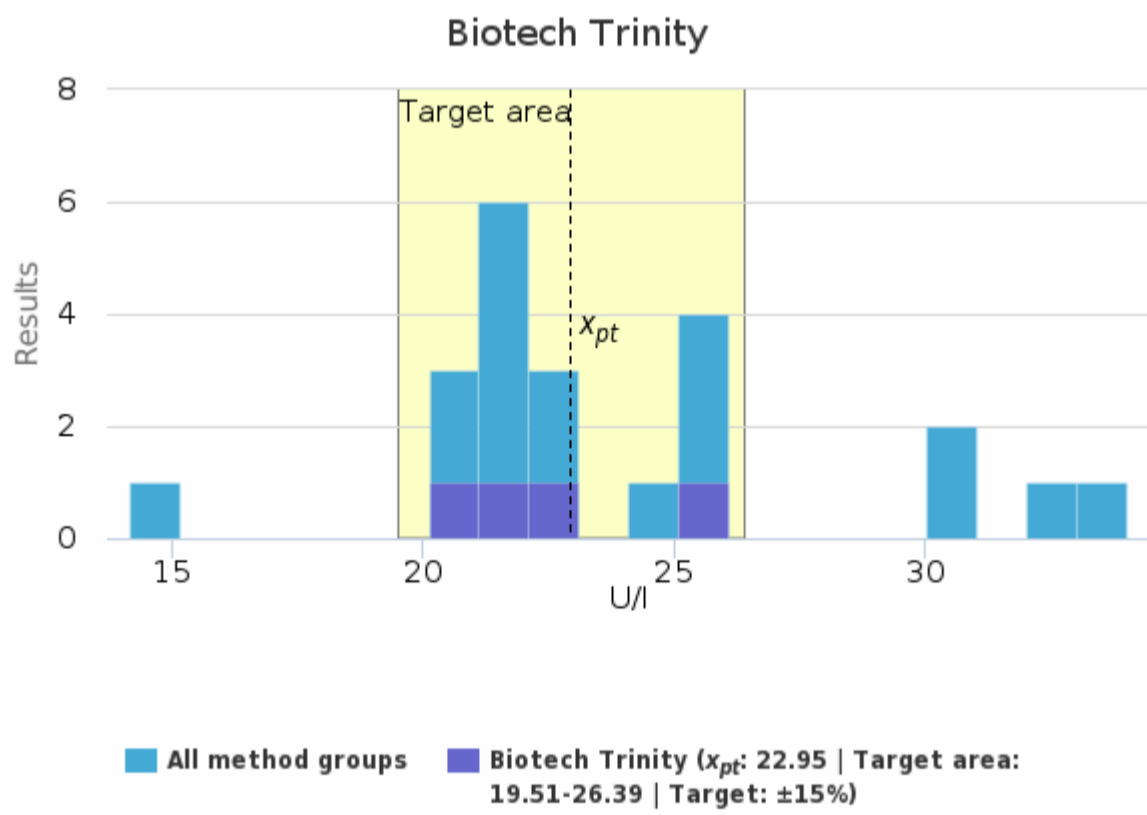
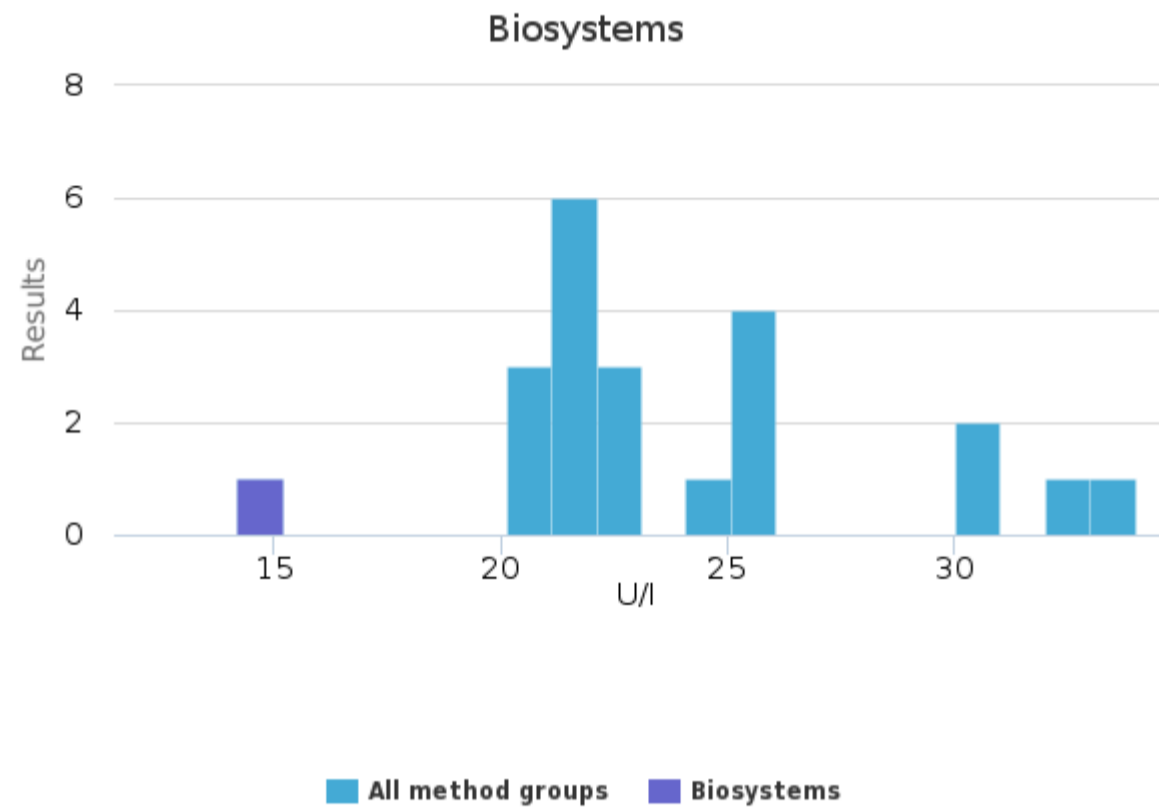
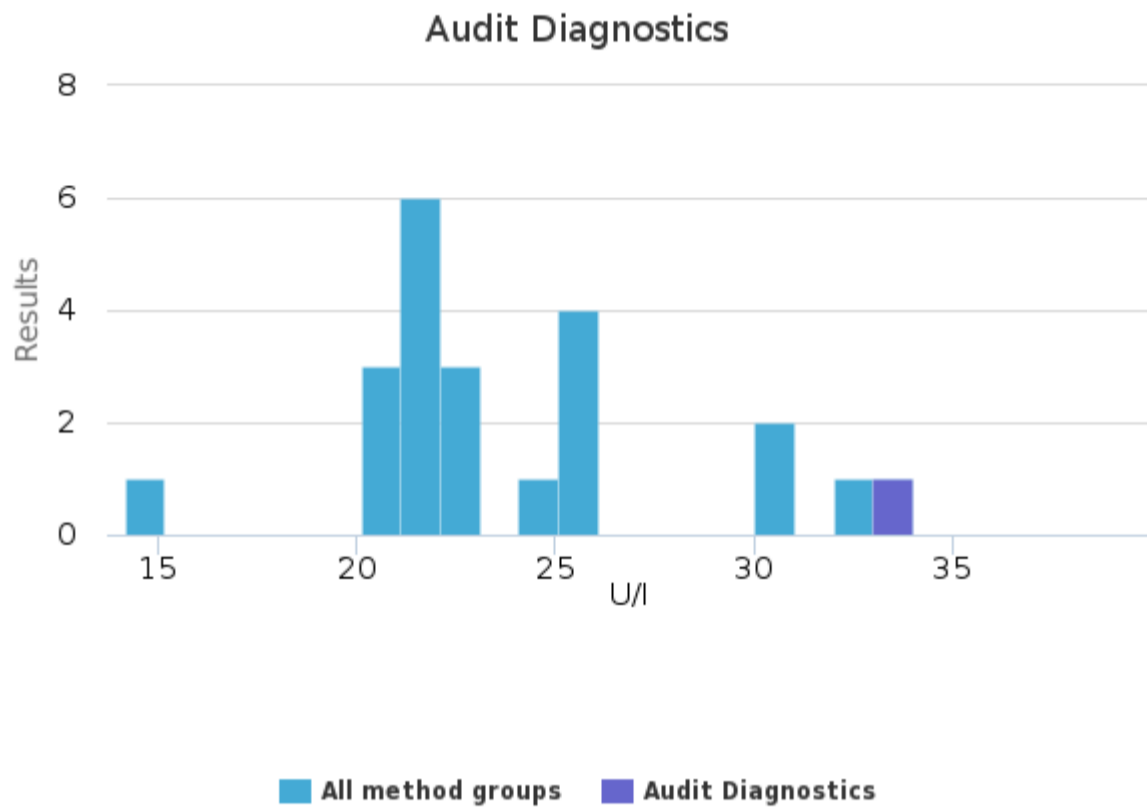
Your own result should be compared to others using the same method. Assigned values ( $x_{pt}$ , target values) are means of the results where results deviating more than +/- 3\*standard deviation from the median are removed. The standard uncertainty (u) of the assigned value is reported as standard error of the mean (SEM). Additionally, if the measurement uncertainty of the target value is large an automatic text is printed on the report: "The uncertainty of the assigned value is not negligible, and evaluations could be affected." In case the client's result is the only one in the method group, no assigned value will be calculated, no target area shown, and no statistics calculated. In case there are only a few results in the client's own method group, the result can be compared to all method mean or to a group that is similar to the own method. Results reported with < or > -signs cannot be included in the statistics.

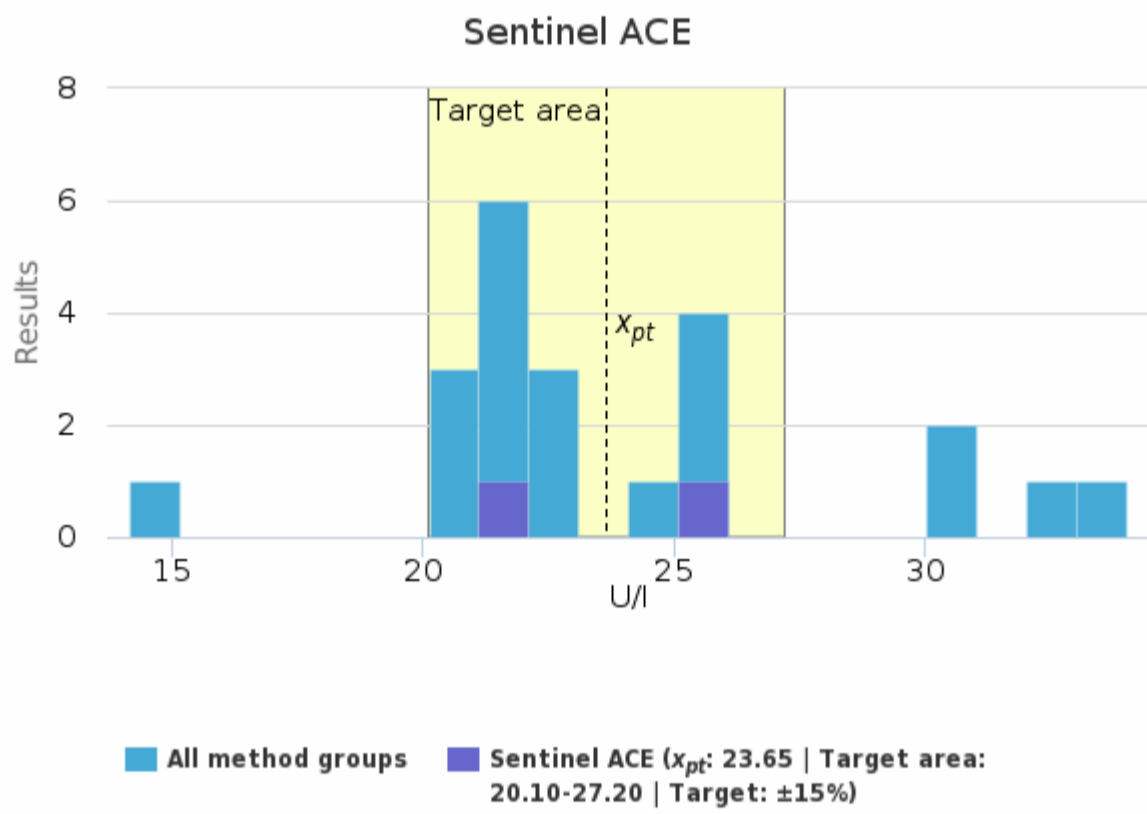
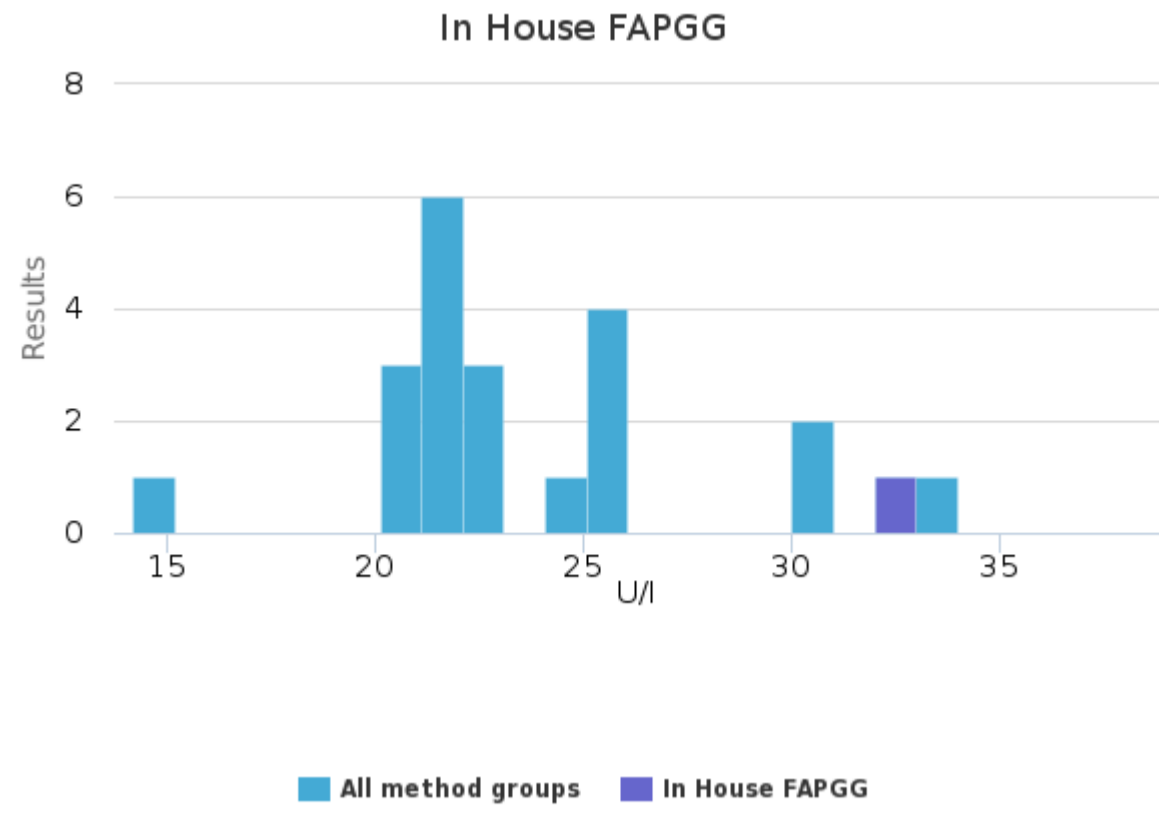
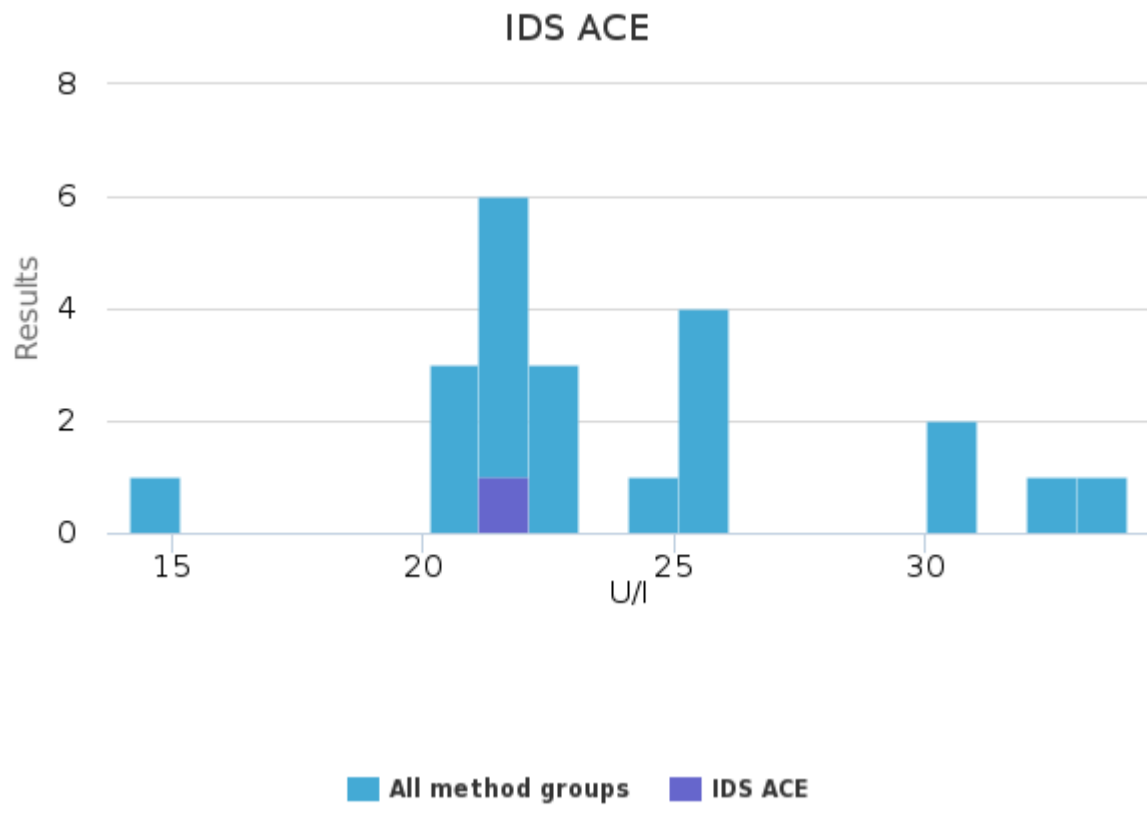
For information on report interpretation and performance evaluation, please see the " EQAS Interpretation guidelines" LabScala User instructions (top right corner ?Help link).

Specimen S001 | Angiotensin-converting enzyme, U/l

Methodics	$x_{pt}$	Median	sd	CV%	SEM	min	max	Outliers	n
Audit Diagnostics	-	-	-	-	-	34.00	34.00	-	1
Biosystems	-	-	-	-	-	14.20	14.20	-	1
Biotech Trinity	22.95	22.50	2.07	9.0	1.03	21.00	25.80	-	4
Bühlmann	24.21	23.00	3.44	14.2	0.99	21.00	31.00	-	12
IDS ACE	-	-	-	-	-	21.80	21.80	-	1
In House FAPGG	-	-	-	-	-	33.00	33.00	-	1
Sentinel ACE	23.65	23.65	2.76	11.7	1.95	21.70	25.60	-	2
<b>All</b>	<b>24.21</b>	<b>23.00</b>	<b>4.56</b>	<b>18.8</b>	<b>0.97</b>	<b>14.20</b>	<b>34.00</b>	-	<b>22</b>

Specimen S001 | Angiotensin-converting enzyme, U/l | histogram summaries in LabScala

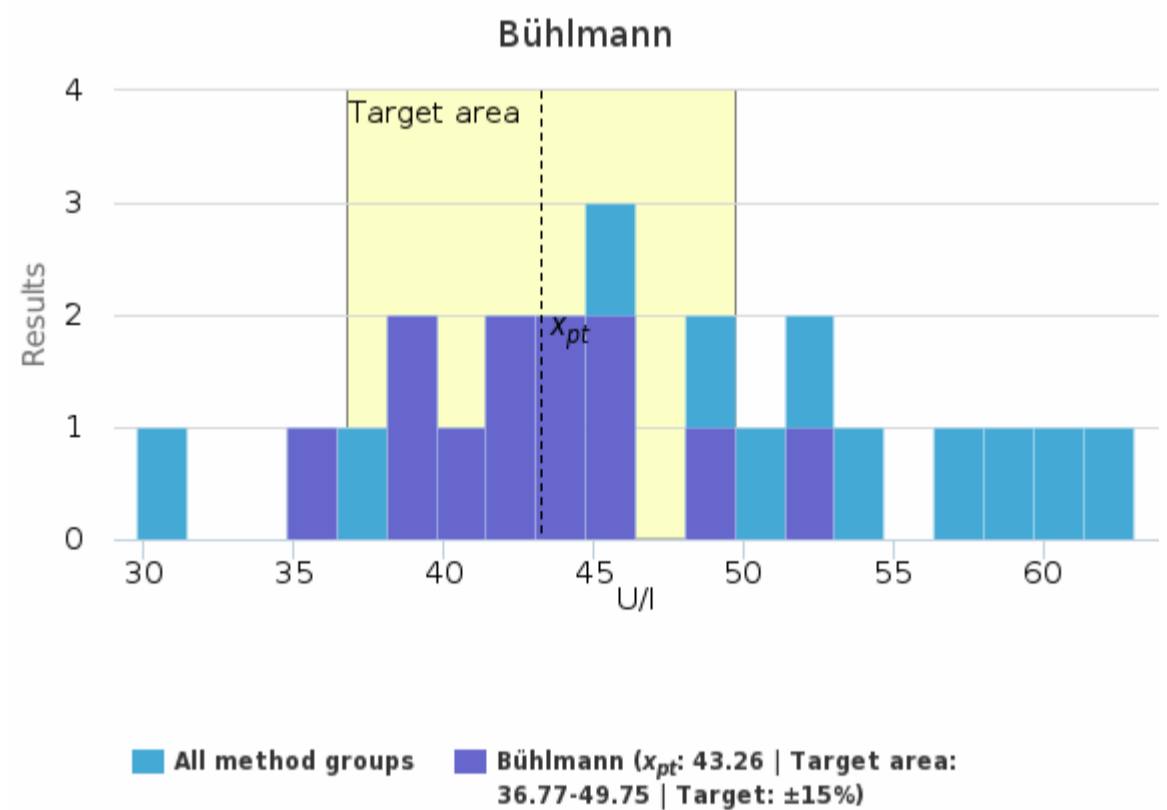
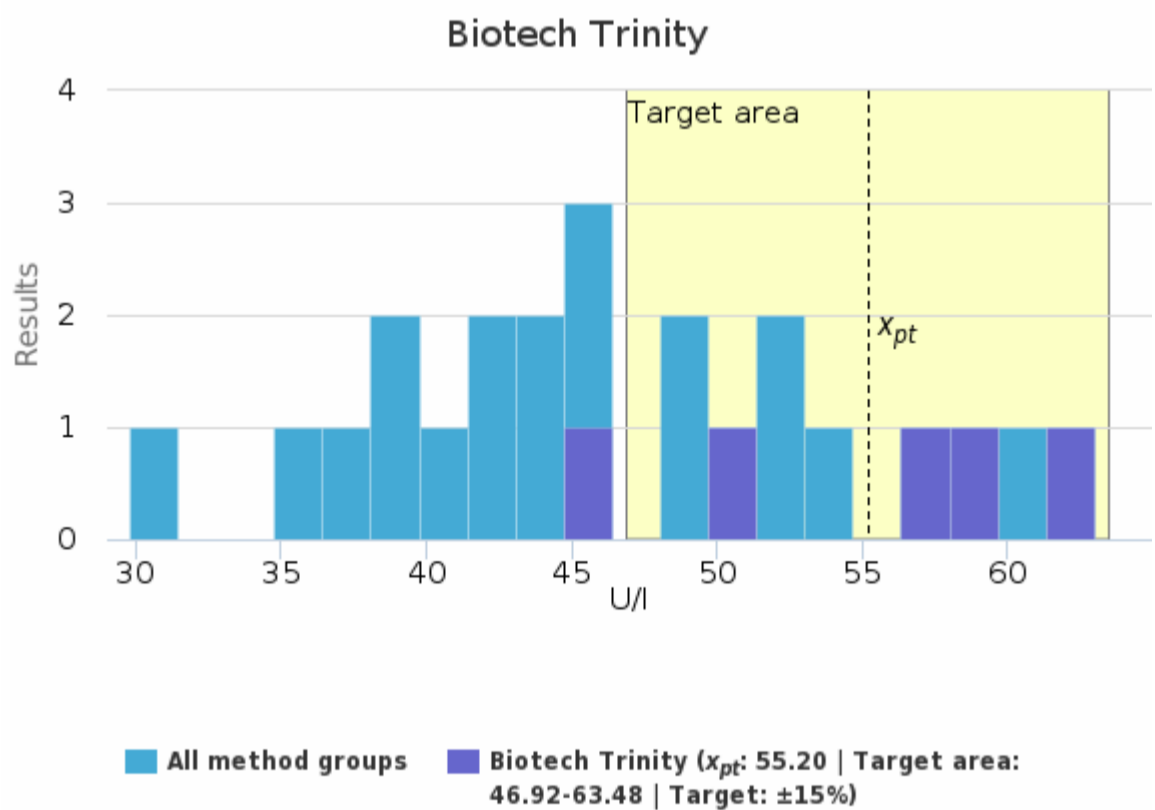
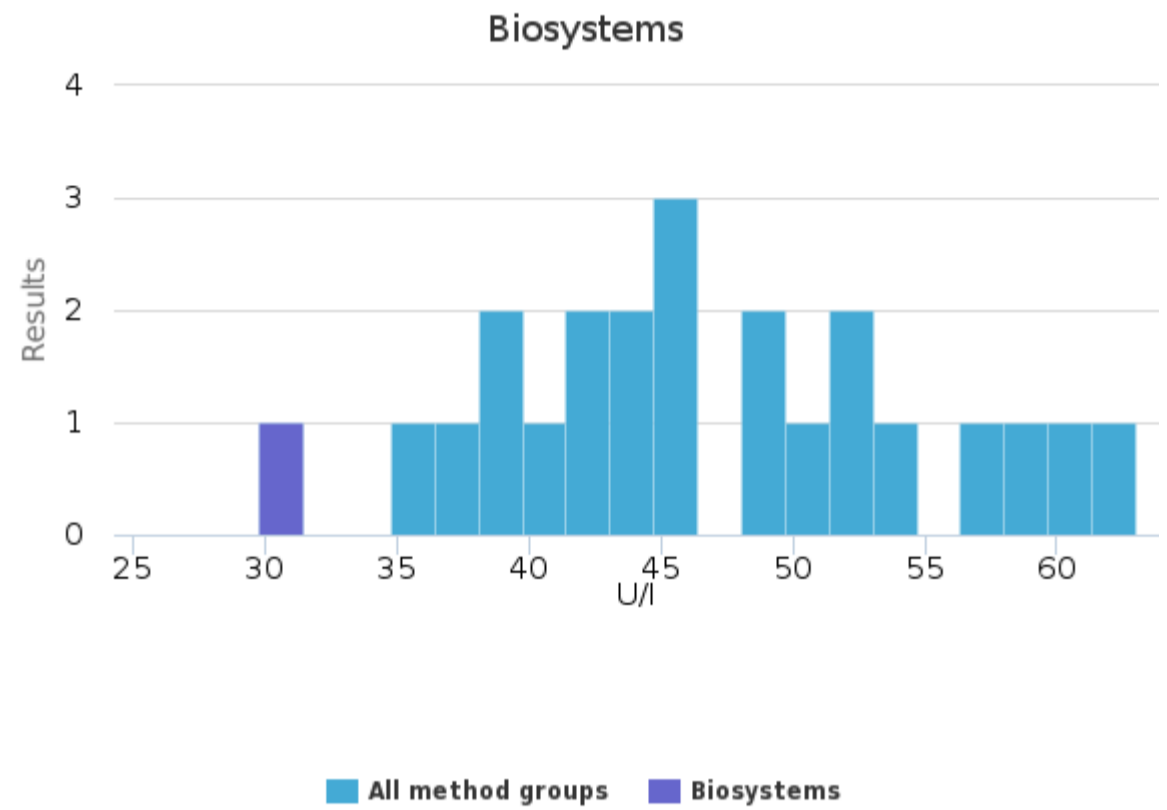
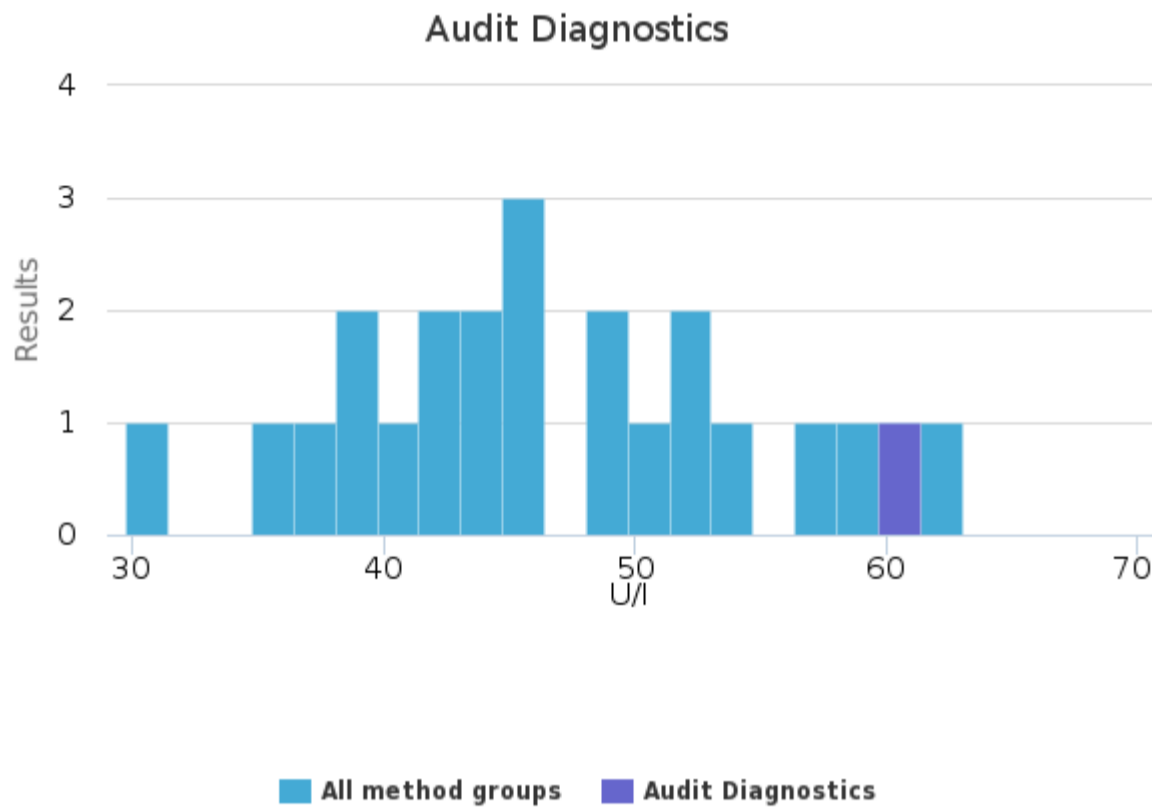


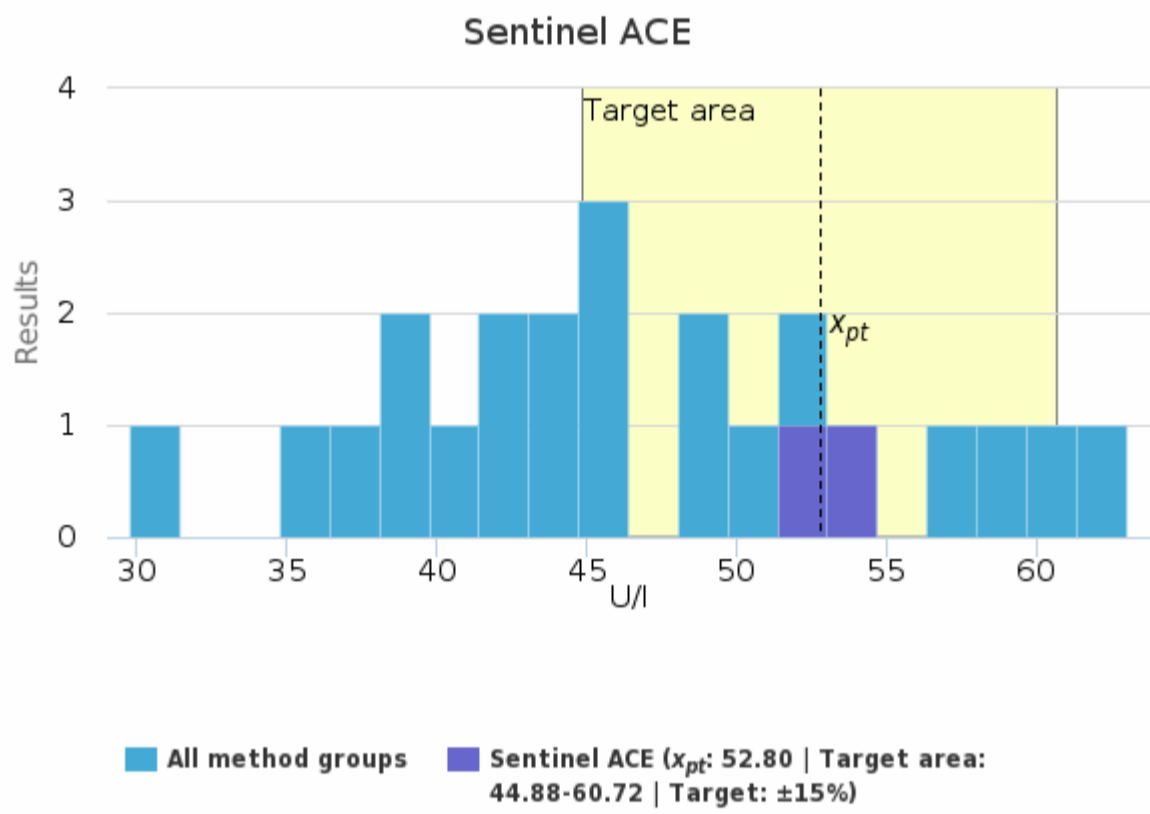
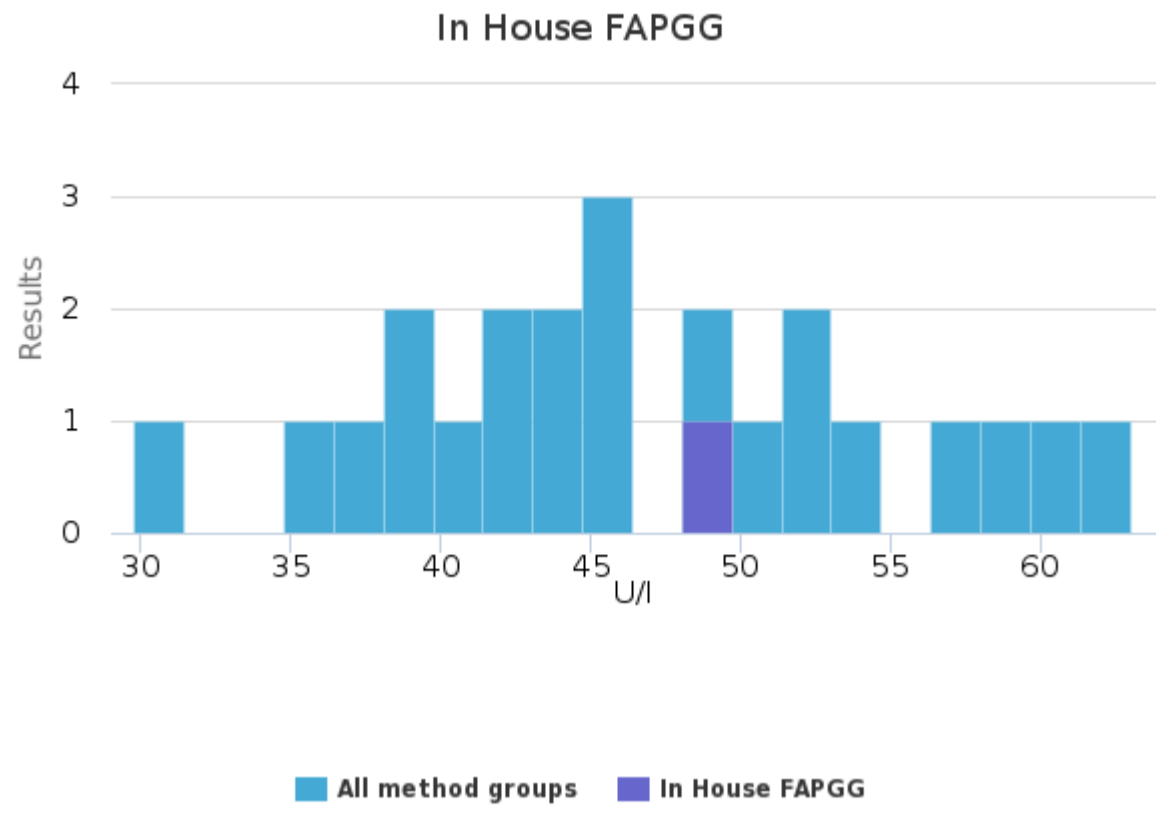
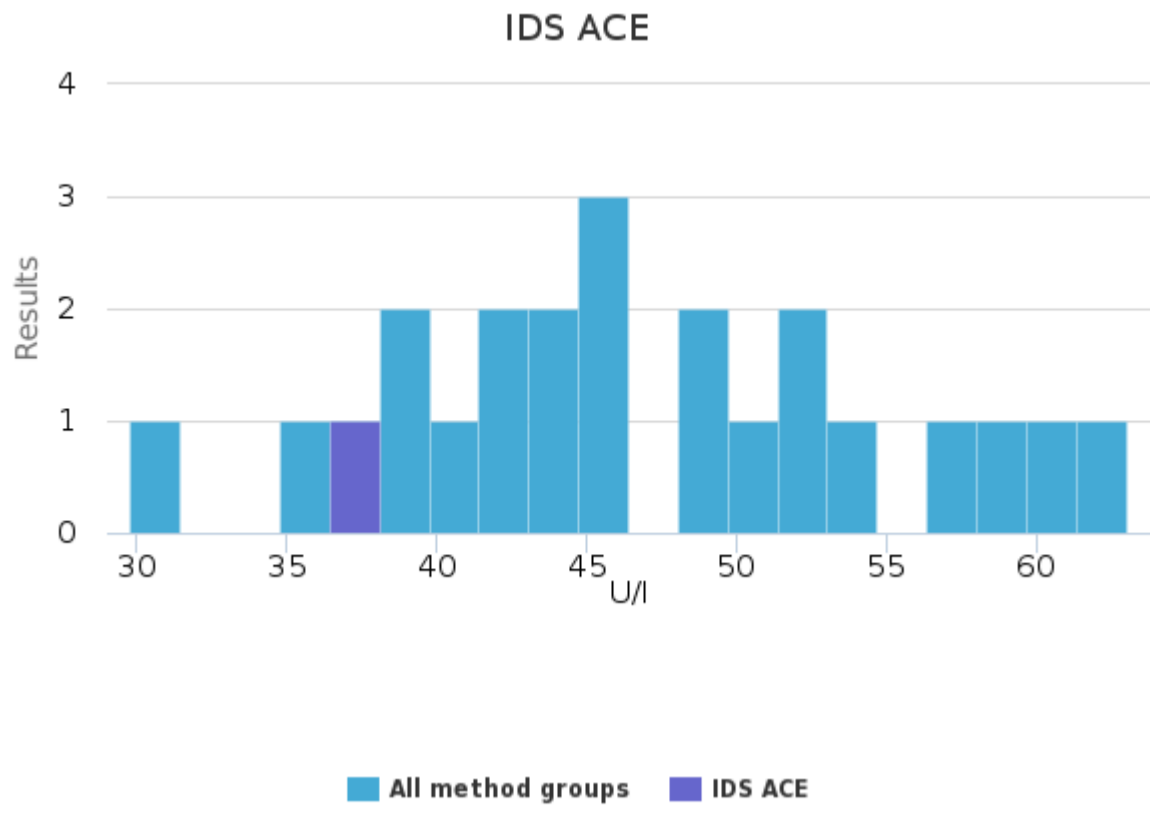


### Specimen S002 | Angiotensin-converting enzyme, U/l

Methodics	$x_{pt}$	Median	sd	CV%	SEM	min	max	Outliers	n
Audit Diagnostics	-	-	-	-	-	60.00	60.00	-	1
Biosystems	-	-	-	-	-	29.80	29.80	-	1
Biotech Trinity	55.20	58.00	7.13	12.9	3.19	45.10	63.00	-	5
Bühlmann	43.26	42.95	4.42	10.2	1.28	36.10	52.00	-	12
IDS ACE	-	-	-	-	-	37.00	37.00	-	1
In House FAPGG	-	-	-	-	-	49.00	49.00	-	1
Sentinel ACE	52.80	52.80	1.70	3.2	1.20	51.60	54.00	-	2
<b>All</b>	<b>46.80</b>	<b>45.10</b>	<b>8.42</b>	<b>18.0</b>	<b>1.76</b>	<b>29.80</b>	<b>63.00</b>	-	<b>23</b>

### Specimen S002 | Angiotensin-converting enzyme, U/l | histogram summaries in LabScala





**Report info****Participants**

25 participants from 12 countries.

**Report info**

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

Assigned values ( $\bar{x}_p$ , target values) are means of the results where results deviating more than  $\pm 3$  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 large an automatic text is printed on the report: "The uncertainty of the assigned value is not negligible, and evaluations could be affected."

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Results reported with  $<$  or  $>$  -signs cannot be included in the statistics.

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External Quality Assessment Scheme

## Angiotensin convertase (ACE) Round 1, 2023

### Specimens

Sample S001 (LQ750223011) was a liquid serum sample and sample S002 (LQ750223012) was a lyophilized human serum sample.

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

### Comments – EQA Coordinator

Sample S001 was a low level soluble human serum with an ACE level in the reference range<sup>1</sup>.

One very low result was excluded from the Biotech Trinity group and one very high result from Bühlman group. However, none of the results would have led to an erroneous pathological assessment as a patient result except the high result in the Bühlman group.

Sample S002 was a lyophilized human serum sample with slightly elevated ACE level. The results varied from 29.8 U/L to 63 U/L, with intra-method variations of less than 13%.

Only in the Biotech Trinity and Bühlmann method groups  $n \geq 2$  for both samples and the assigned value could be given. All results met the quality targets, deviating from the target value by less than  $\pm 15\%$ , except four results of sample S001 and three results of sample S002. In other method groups  $n = 1$  and assigned value could not be statistically calculated.

### References

<sup>1</sup><https://www.mayocliniclabs.com/test-catalog/overview/603622#Clinical-and-Interpretive>

### End of report

2023-06-13

### FINAL REPORT

Product no. 2210

Samples sent	2023-05-15
Round closed	2023-06-12
Final report	2023-06-13

### 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

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### Labquality Oy

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