LABQUALITY

External Quality Assessment Scheme

# Haemoglobin 3-level samples, POC Round 1, 2022

**Specimens**
Please find enclosed 3 commercial hemolyzed animal-based samples S001,S002 and S003, each 1 mL. Samples are ready to use.

**Caution**
Quality control specimens are bovine based, and they do not carry biohazards for man, such as HBsAg or HIVAb but they shall be handled with same care as patient samples, i.e. as potential transmitters of serious diseases.

**Examinations**
Hb

**Storage and use**
The sample is stored at +2 … +8 °C. It is stable until the round closing date. Allow the specimen to stand at room temperature for about 30 minutes. Invert the vial several times, until the suspension appears homogenous. Do not mix too vigorously. Avoid foam forming in the sample. The determination should be carried out in the same way as for patient blood.

**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


S003


**2022-09-06**

**INSTRUCTIONS**

Product no. 2112
LQ747222011-013/NL

If the kit is incomplete or contains damaged specimens, please report immediately to info@labquality.fi.

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The results should be reported no later than **September 22, 2022**.

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**Inquiries**
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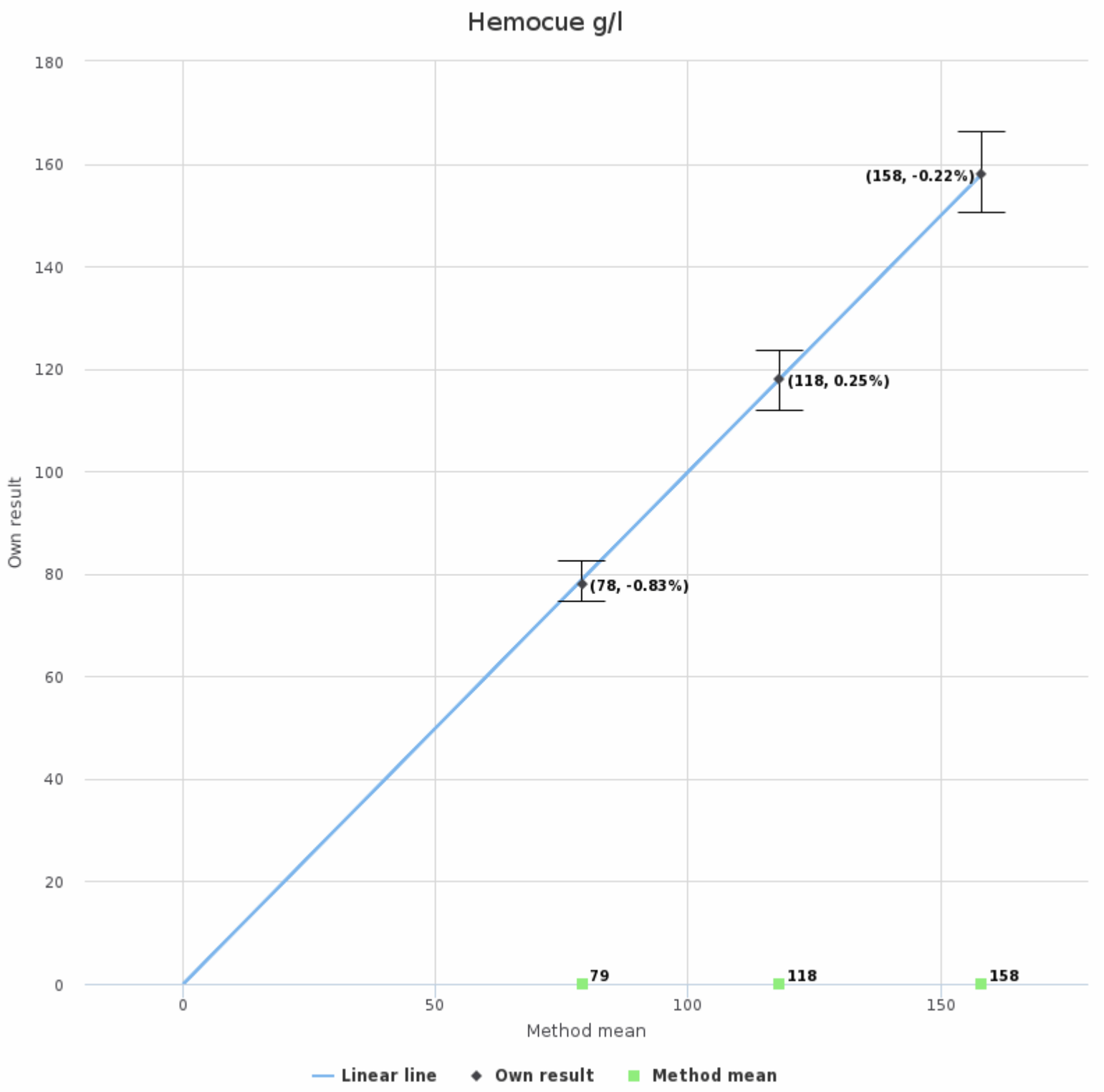
**Hemoglobin |006**




| Sample | Reference values | Target range | Own | diff% |
|---|---|---|---|---|
| Sample S01 | 79 g/l | 75-83 g/l | 78 g/l | -0.83% |
| Sample S02 | 118 g/l | 112-124 g/l | 118 g/l | 0.25% |
| Sample S03 | 158 g/l | 150-166 g/l | 158 g/l | -0.22% |

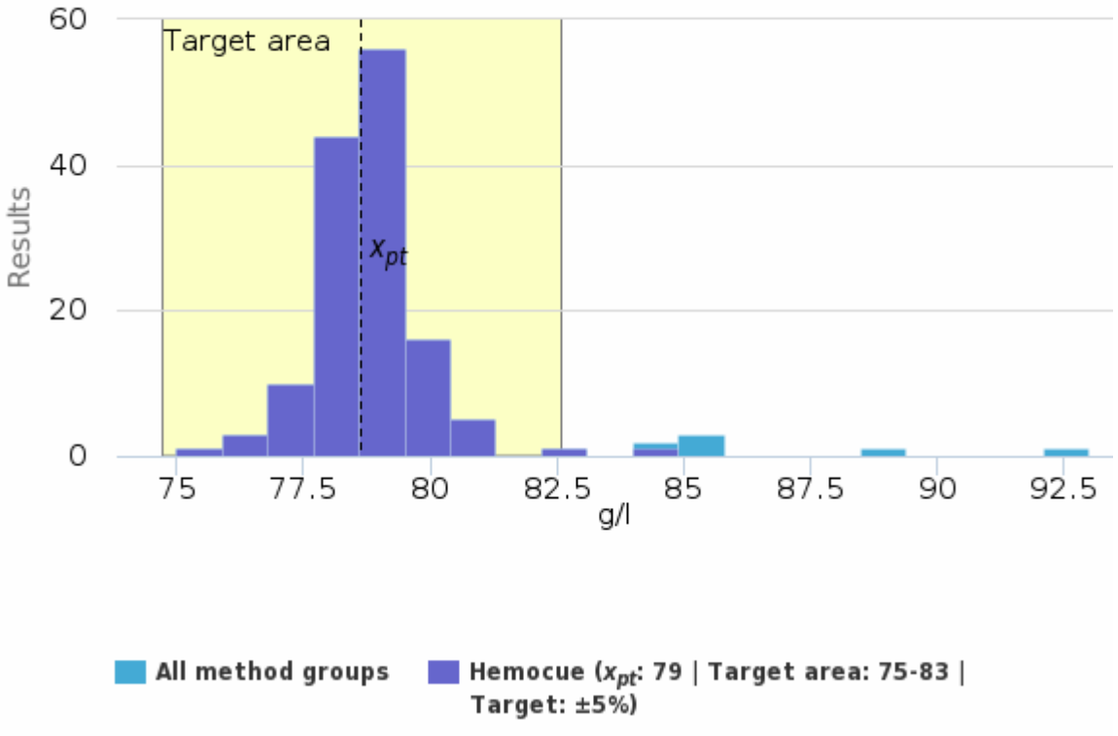
| Linearity factor | Neg. pcs (own group) | Pos. pcs (own group) |
|---|---|---|
| -3.69 | 58 | 77 |

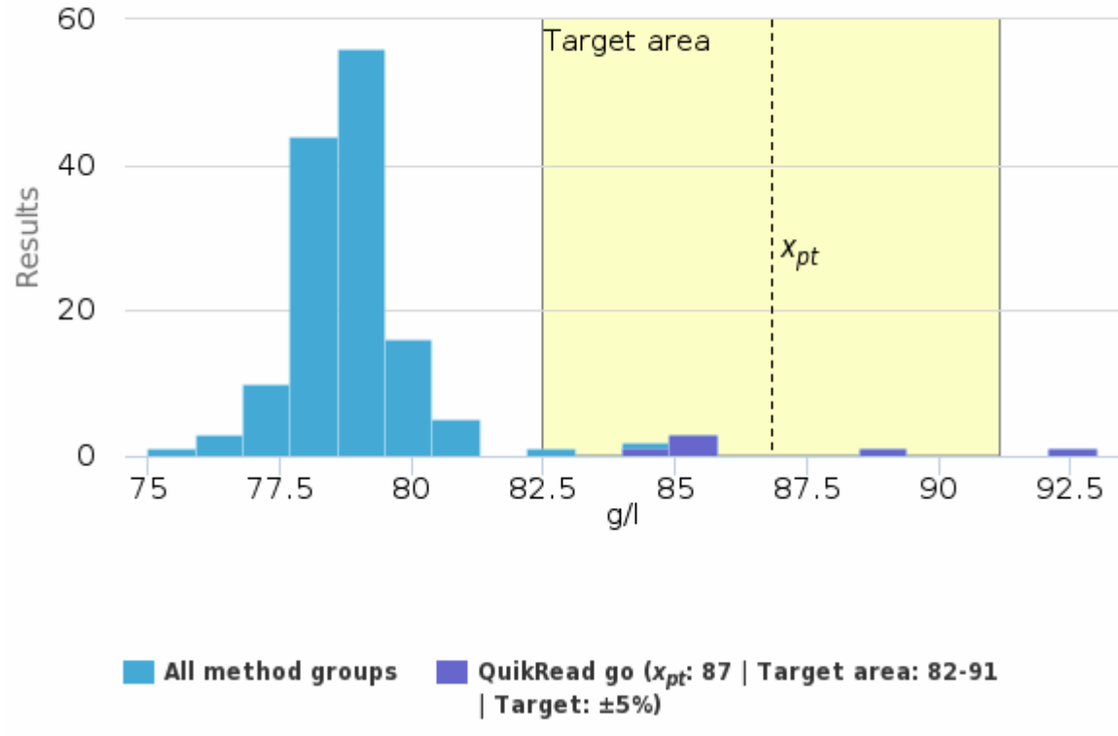
# Haemoglobin, 3-level samples, POCT, September, 1-2022

## Sample S01 | Hemoglobin, g/l

| Methodics | $x_{pt}$ | Median | sd | CV% | SEM | min | max | Outliers | n |
|---|---|---|---|---|---|---|---|---|---|
| Hemocue | 79 | 79 | <1 | 1.3 | <1 | 76 | 81 | 3 | 137 |
| QuikRead go | 87 | 85 | 3 | 4.0 | 1 | 84 | 93 | - | 6 |
| **All** | **79** | **79** | **2** | **2.0** | **<1** | **75** | **85** | **2** | **143** |

## Sample S01 | Hemoglobin, g/l| histogram summaries in LabScala

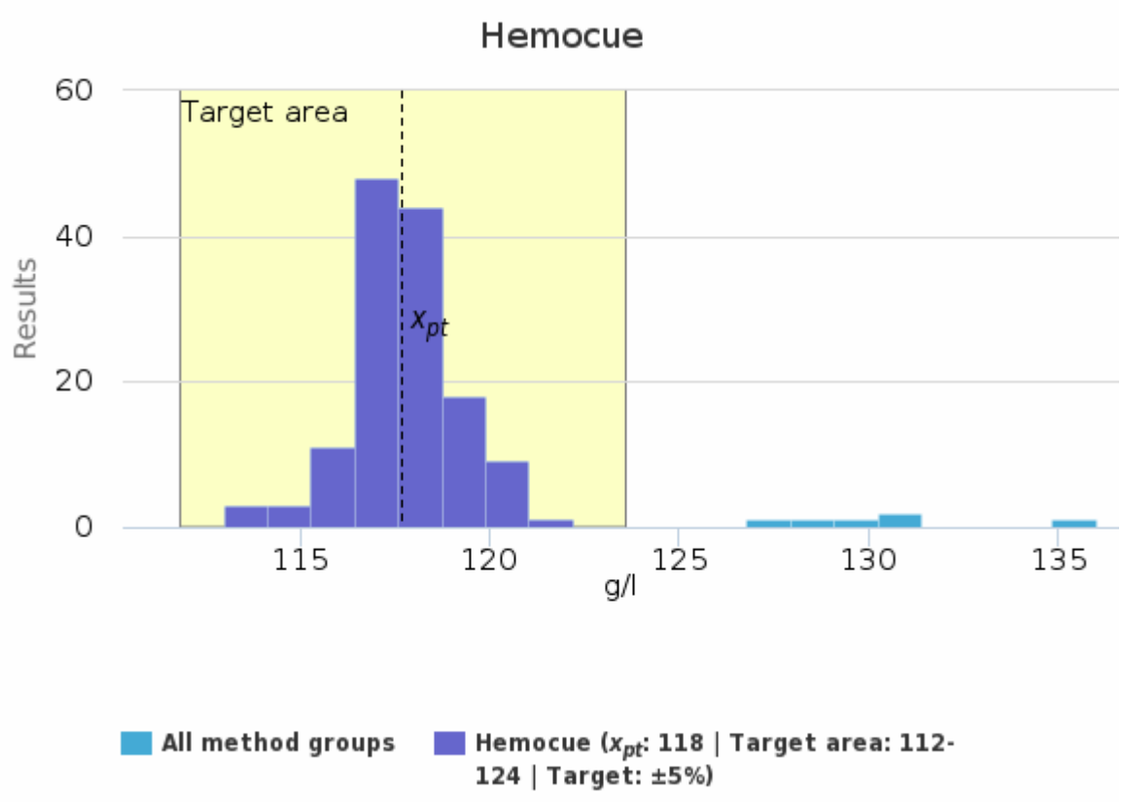


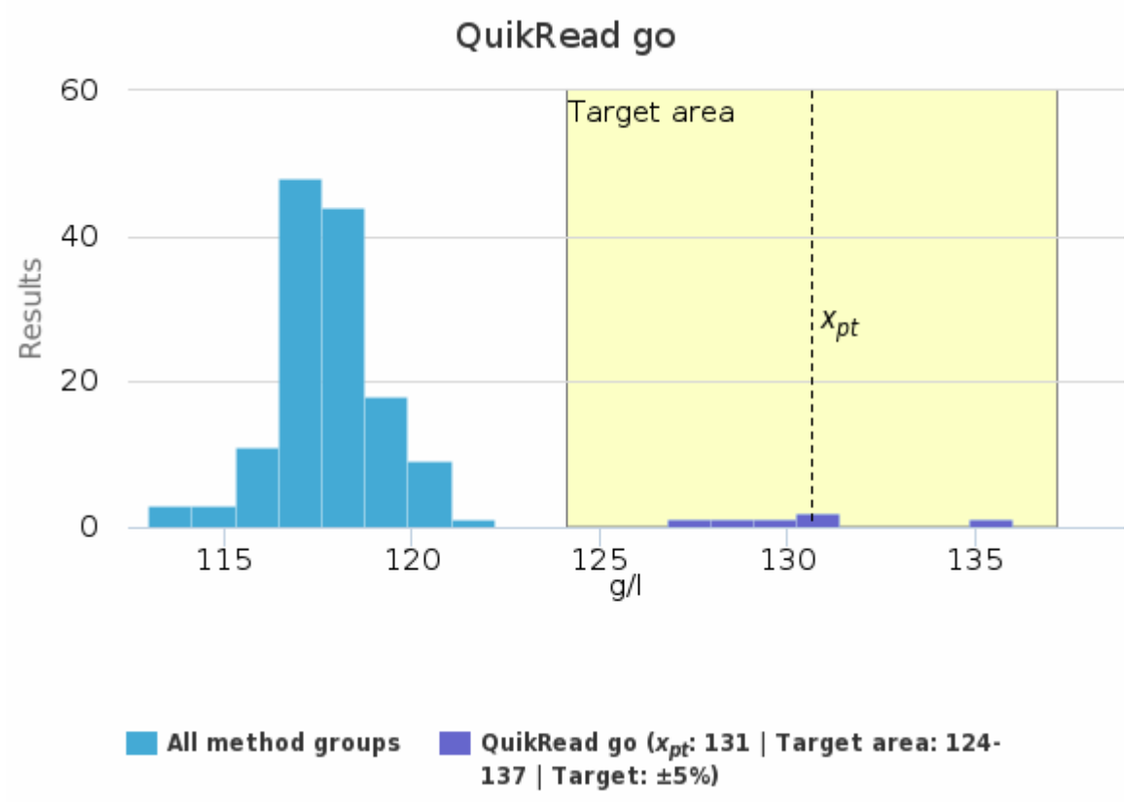



## Sample S02 | Hemoglobin, g/l

| Methodics | $x_{pt}$ | Median | sd | CV% | SEM | min | max | Outliers | n |
|---|---|---|---|---|---|---|---|---|---|
| Hemocue | 118 | 118 | 1 | 1.1 | <1 | 114 | 122 | 2 | 137 |
| QuikRead go | 131 | 131 | 3 | 2.3 | 1 | 127 | 136 | - | 6 |
| **All** | **118** | **118** | **1** | **1.2** | **<1** | **113** | **122** | **6** | **143** |

## Sample S02 | Hemoglobin, g/l| histogram summaries in LabScala

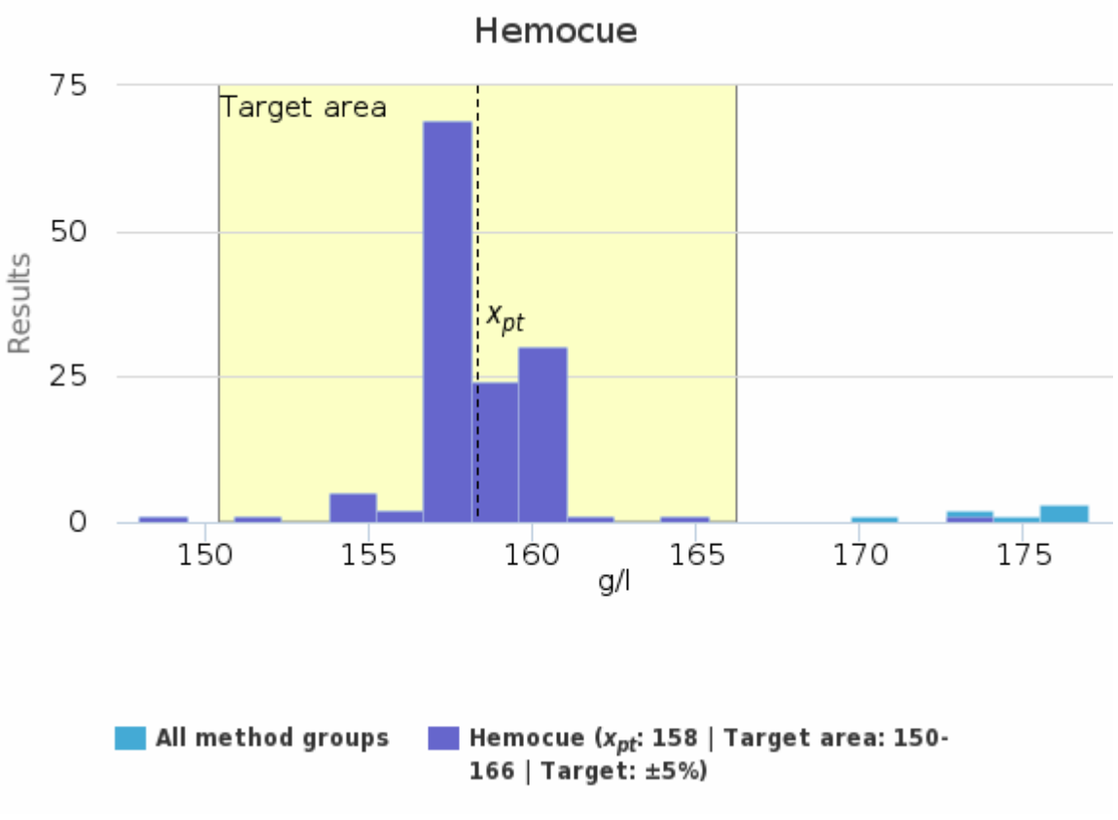


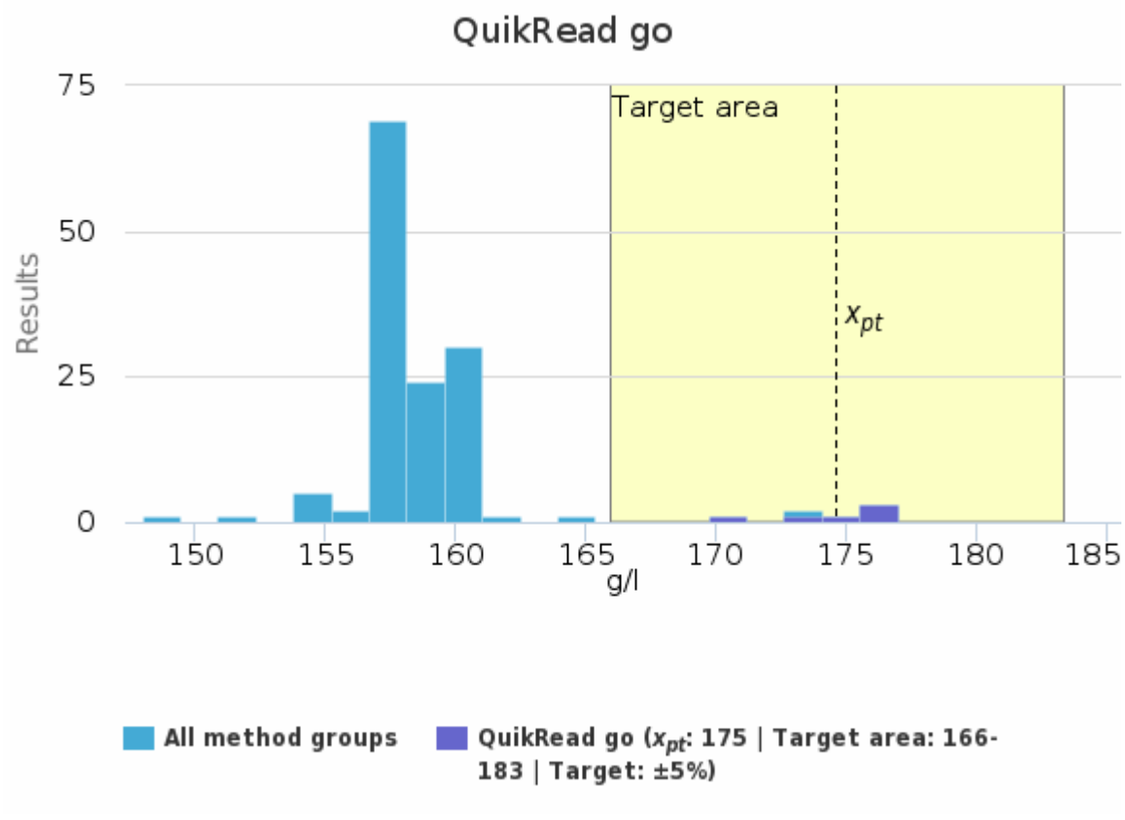



## Sample S03 | Hemoglobin, g/l

| Methodics | $x_{pt}$ | Median | sd | CV% | SEM | min | max | Outliers | n |
|---|---|---|---|---|---|---|---|---|---|
| Hemocue | 158 | 158 | 1 | 0.9 | <1 | 152 | 162 | 3 | 135 |
| QuikRead go | 175 | 176 | 3 | 1.6 | 1 | 170 | 177 | - | 6 |
| **All** | **158** | **158** | **2** | **1.1** | **<1** | **148** | **165** | **7** | **141** |

## Sample S03 | Hemoglobin, g/l| histogram summaries in LabScala



## Report info

### Participants

62 participants from 6 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).

LABQUALITY

External Quality Assessment Scheme

# Haemoglobin, 3-level samples, POC Round 1, 2022

**Specimens**
Samples S001 (LQ747222011), S002 (LQ747222012) and S003 (LQ747222013) were commercial animal based hemolyzed 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.

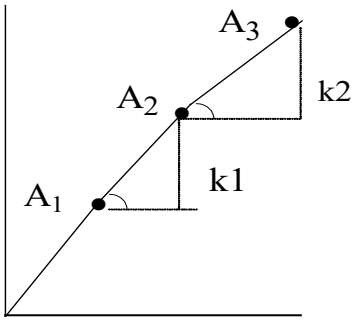
**Report info**
Please see the description of the data analysis on the last page of the laboratory-specific report and Numerical Summary reports. It is important to read the Final report first, because it contains important information of the samples and results in each round.

Assigned values
Assigned values are the mean of respective output group.

Results
The reports were generated in LabScala. The results are given in a graphical presentation. The name of your own method group is printed on top of the y-axis. The assigned values are given on the x-axis in the graph, the laboratory's own results on the y-axis. The straight line in the graph represents x=y. The laboratory's own haemoglobin results are shown as black squares, with the haemoglobin concentration and deviation from the reference values (Diff %) in brackets. The vertical lines show the target limits. Results from methods used by one laboratory or if the method has not been reported, are grouped in the method group "Other".

Linearity
The deviation from linearity (linearity coefficient, %), is calculated from the relative difference of two slopes (k2-k1)/k1, see Fig 1.

Fig. 1.




Trueness
To estimate the trueness of own results the assigned values +/- 5% are used. Own result should lie within target limits which means that the Diff% should be less than 5 %.

**2022-10-10**

**FINAL REPORT**

Product no. 2112

| | |
|---|---|
| Samples sent | 2022-09-06 |
| Round closed | 2022-09-22 |
| Final report | 2022-10-10 |

**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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**Expert**
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**Comments - EQA coordinator**
The round had results from two different instrument types; Hemocue (N = 137) and QuikRead Go (N = 6). The global report has a different number of results for the samples, as some incorrectly answered results have been excluded from the calculation manually. The result level of Quikread Go is 8 g/L higher than Hemocue in sample S001 and about 15 g/L higher in samples S002 and S003. Hemocue had a few out-of-target results in samples S001 and S003, QuikRead Go only in sample S001. There were 130/140 linearity coefficients within the acceptable limits (± 10). The extreme deviations of the acceptable linearity coefficients were -17.13 % and 35.35 %. The linearity coefficient is given only if all three results are met. Otherwise, the report only shows a deviation from the target value.

**Comments - Expert**
The accuracy of the hemoglobin meters participating in the round was good. Only a couple of devices yielded results outside the target range (assigned value +/- 5%).

The linearity of the hemoglobin results was also good. A clear non-linearity was observed in ten meters. Linearity factor of these meters was greater than 10%.

The condition and calibration of the meter should be checked if there is a large deviation in either trueness (accuracy) or linearity.

**End of report**

**Annex**
If the result is outside the acceptable limits, please:

- Read the meter and strip instructions.
- Check that the strips / reagents included in the device are correct and the device is in working order. Check your measurement technique.
- Check and replace strips / reagents that are outdated, wetted, or stored, for example, at the wrong temperature.
- The device's own or unit's internal controls should be used regularly as instructed by the meter manufacturer / laboratory.
- Contact the person in charge at the support laboratory or the device manufacturer.