

Report guidance for "HIL-index and interference" no. 4131 DK

General for all rounds

Purpose

The object of this program is to examine the actual determination of hemolysis (H), icterus (I) and lipemia (L) known as the HIL index in the samples. Is it possible to compare the determination of the HIL index between the instrument groups?

Moreover, the object of the EQA scheme is to examine the interference caused by elevated either H-, I- or L-index. This is done by comparison of the analysis results of the six components between the two different samples, the normal sample A and sample B, which is the same as sample A, except for added hemoglobin, bilirubin or Intralipid.

About interference

Interference can occur in three different ways.

The concentration of a component can be higher in the erythrocytes than in plasma, which is why the concentration of the component will be shown as false elevated in a hemolyzed samples, as e.g. potassium.

The red or yellow color can spectrophotometrically be like the color used in the analysis for detection of the concentration of the component in question. In the same way an unclear sample caused by lipids, can interfere with a turbidimetric detection.

The component in question, hemoglobin, bilirubin or lipid, can react with the components in the reagents for the analysis.

Statistics

Target values and accept intervals

Used accept intervals

Component	Accept interval, %	Reference
Bilirubin (conjugated)	10	Sygehus Lillebælts laboratorievejledning
Calcium	6	Sygehus Lillebælts laboratorievejledning
Cholesterol	5	Labquality, Almen klinisk Biokemi, Serum B og C
Creatinin	8	Sygehus Lillebælts laboratorievejledning
Ferritin	15	Labquality, Almen klinisk Biokemi, Serum B og C
Immunglobulin G	8	Labquality, Almen klinisk Biokemi, Serum B og C
Lactatdehydrogenase	11,4	Ricos C. et al Scand J Clin Lab Invest 1999;59:491-500
Phosphat	6	Labquality, Almen klinisk Biokemi, Serum B og C
Potassium	5,6	Ricos C. et al Scand J Clin Lab Invest 1999;59:491-500
Hæmoglobin, H-indeks	5	Labquality, EQA-program for hæmoglobin
Bilirubin, I-indeks	12	Labquality, EQA-program for bilirubin
Lipid, L-indeks	15	Labquality, EQA-program for triglyceride

As target value in the graphic part of the report, the consensus mean of all the participants' results for Sample A are used. The target value is marked with an "M"

For Sample B the target value is the same as for Sample A and the target value is therefore marked with "R".

Units and intervals for H-, I- and L-index

When results have been reported with a < or as an arbitrary index, the middle of the range is used as a quantitative result.

All results for the H, I and L indices are converted into the same unit for comparison.

"g/L" was chosen as a common unit for all results of the H index and L index, as it is easy to recognize results originally stated in mg/dL.

" $\mu\text{mol/L}$ " was chosen as a common unit for all results of the icteric index.

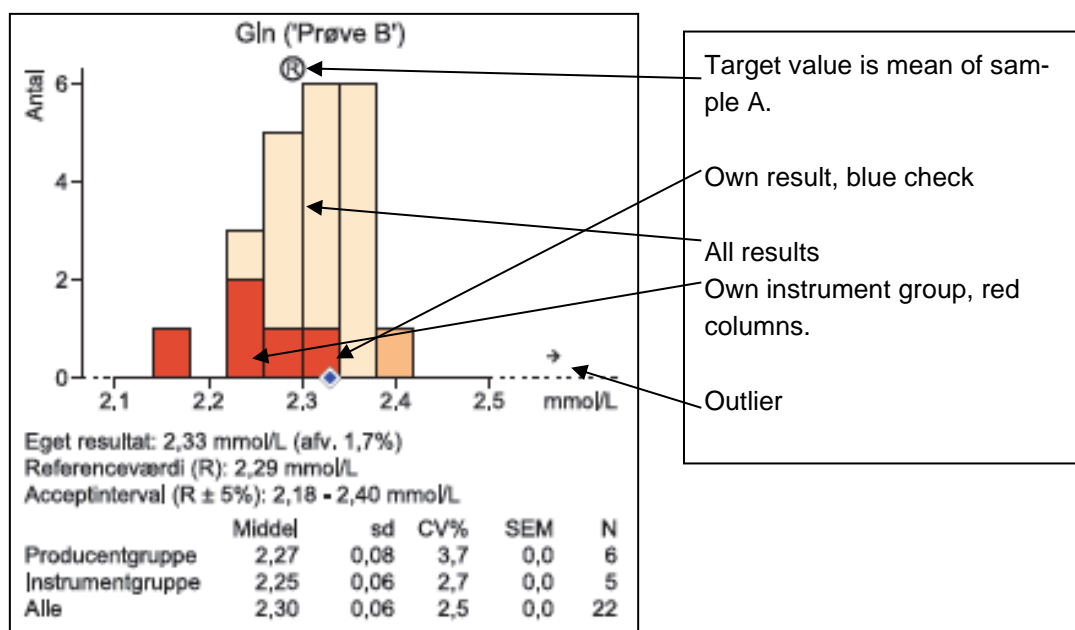
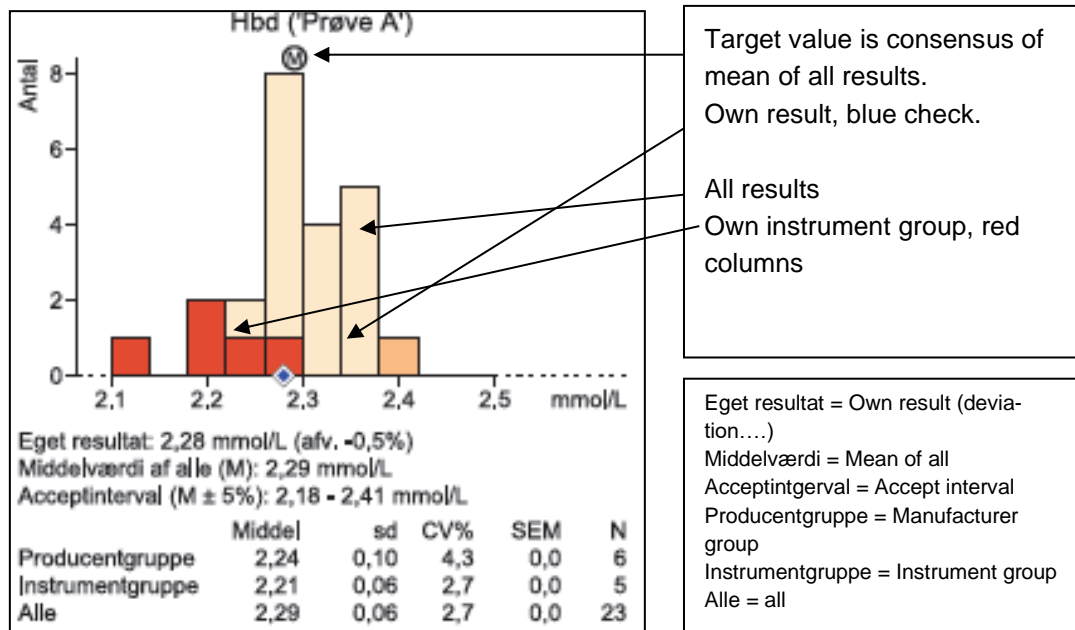
Arbitrary units are converted into SI units according to information from the manufacturer.

Guidance for interpretation of the graphic part

Component- and method heading

P-Calcium; stofk. - Instrumentgruppe: Dimension Vista	Instrument: Dimension Vista - Vista Producentgruppe: Siemens
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Histogram



The target value for Sample A is marked with an (M). This is a mean of *all results*.

The target value for Sample B is the mean of Sample A and is there for marked with an ®.

Below the histogram the text is summed up and show the reported result and the deviation for the target value in %.

In addition, you can see the accept interval and statistics for own instrument group with all the reported results.

sd is the standard deviation

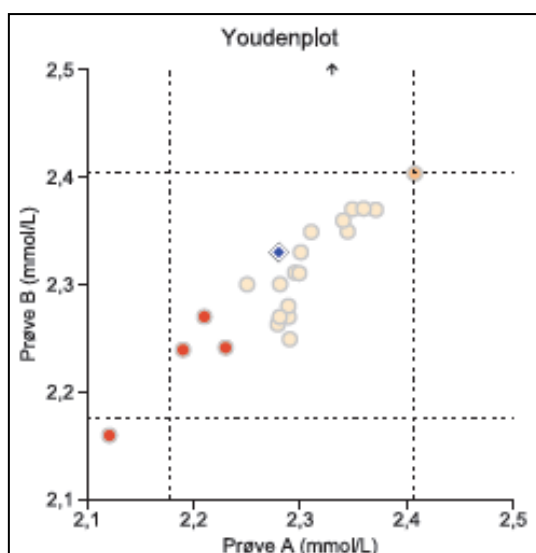
CV% is the variation coefficients, calculated as $sd/mean \cdot 100\%$.

SEM is standard error of the mean value and is calculated as sd/\sqrt{number} .

N is the number of results.

Outliers appears in the histogram and is shown by an arrow at the x-axis. Outliers in the HIL program are defined as $\pm 3,2$ sd from target.

Youden plot



The Youden plot shows the performance of the actual method for the two samples.