LABQUALITY

External Quality Assessment Scheme

Leucocyte differential count, 3-part
Round 1, 2023

Specimens
Please find enclosed 1 human blood cell suspension S001 or S002 according to your order, each 2 mL. Sample S002 is suitable only for Sysmex analyzers.

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
B-Leuc
B-Lym
B-Mon / Sysmex-analyzers: B-MXD (B-Baso, B-Eos, B-Mo)
B-Neutr

Storage and use
After arrival, sample should be stored at +2…8 °C, do not freeze. Allow the tube to stand at room temperature for about 15 minutes. Mix the sample by gently inverting the tube several times, until the suspension appears homogeneous. Do not mix too vigorously. Don`t use mechanical blood mixers. Analyze sample S001 as patient sample. Sample S002 (Sysmex analyzers): analyze sample as a control sample from the control channel, not as a patient sample.

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. Results should be given in absolute values, not as %.

S001

S002

2023-03-06

INSTRUCTIONS

Product no. 4200-4201
LQ711423011-012/US

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

The results should be reported no later than **March 23, 2023.**

Inquiries
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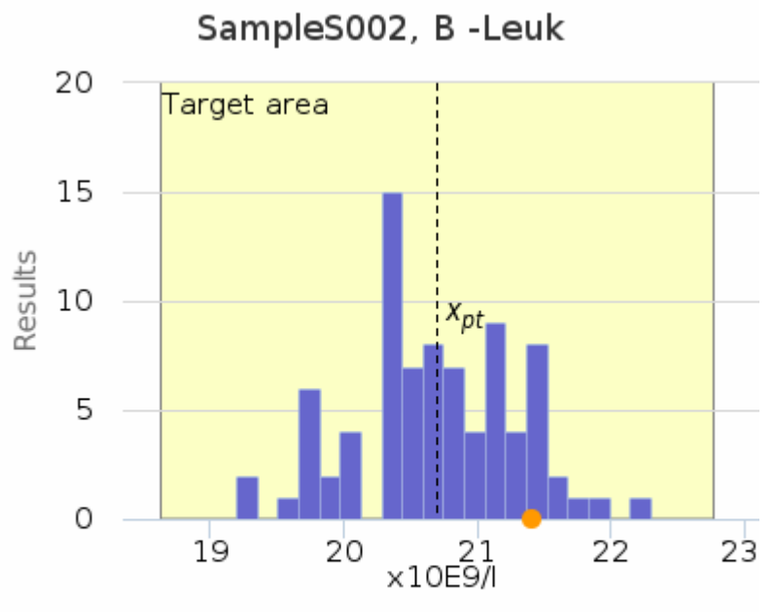
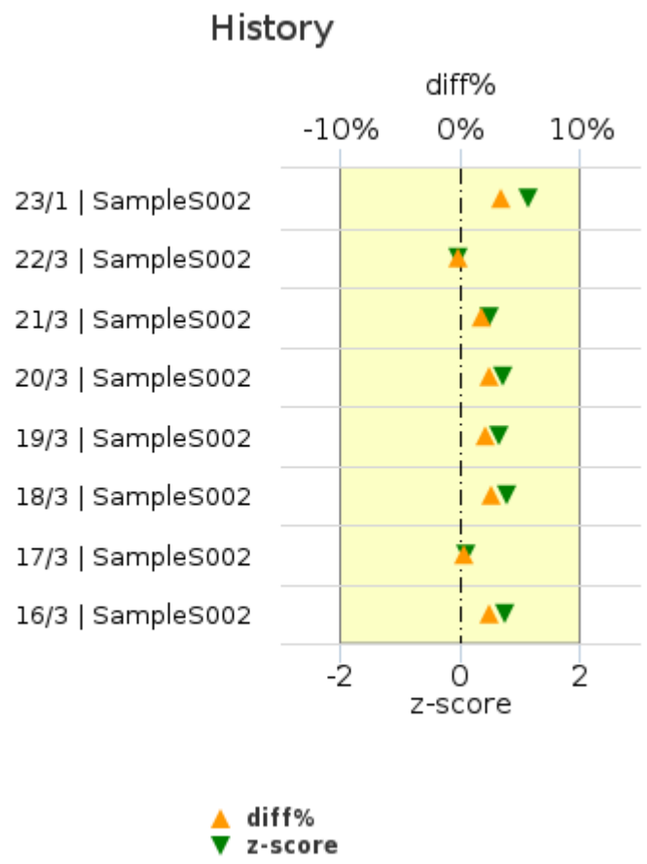
www.labquality.com

FINAS
Finnish Accreditation Service
PT02 (EN ISO/IEC 17043)

Quality Management
ISO 9001:2015

B -Leuk |XP-300

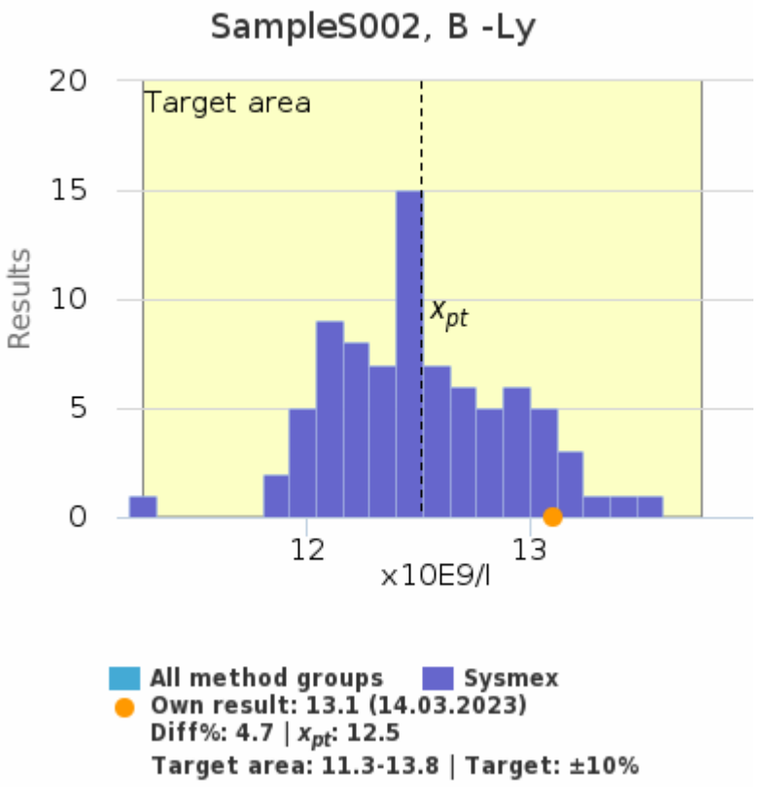


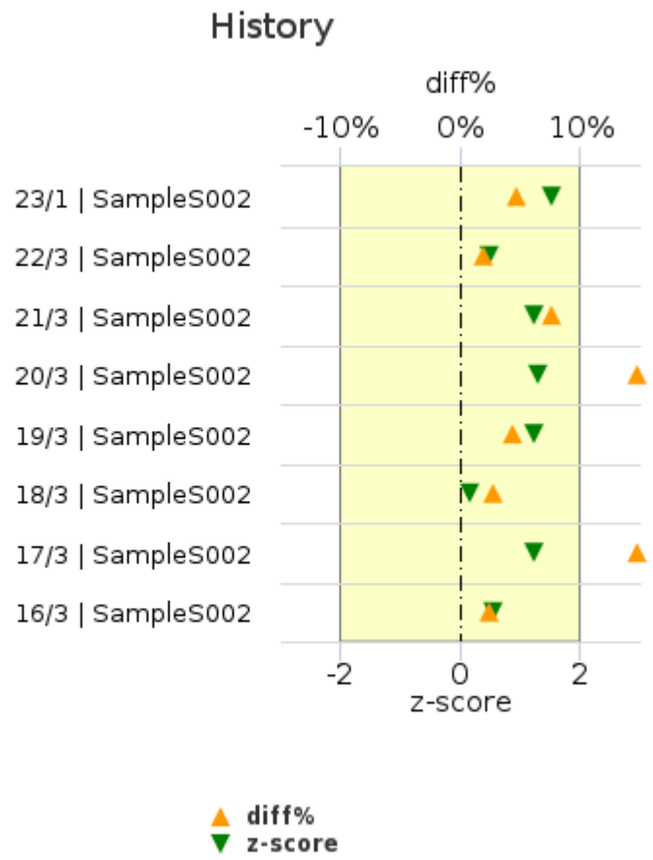


	x_{pt}	sd	SEM	CV%	n
Sysmex	20.7 x10E9/l	0.6	<0.1	3.0	82
All methods	20.7 x10E9/l	0.6	<0.1	3.0	82

Round	Sample	x_{pt}	Result	diff%	z-score
23/1	Sample S002	20.7	21.4	3.4%	1.14
22/3	Sample S002	8.3	8.3	-0.1%	-0.02
21/3	Sample S002	8.0	8.1	1.8%	0.50
20/3	Sample S002	2.9	3.0	2.4%	0.71
19/3	Sample S002	21.1	21.5	2.1%	0.66
18/3	Sample S002	2.8	2.9	2.6%	0.79
17/3	Sample S002	3.0	3.0	0.4%	0.11
16/3	Sample S002	21.0	21.5	2.4%	0.74

B -Ly |XP-300

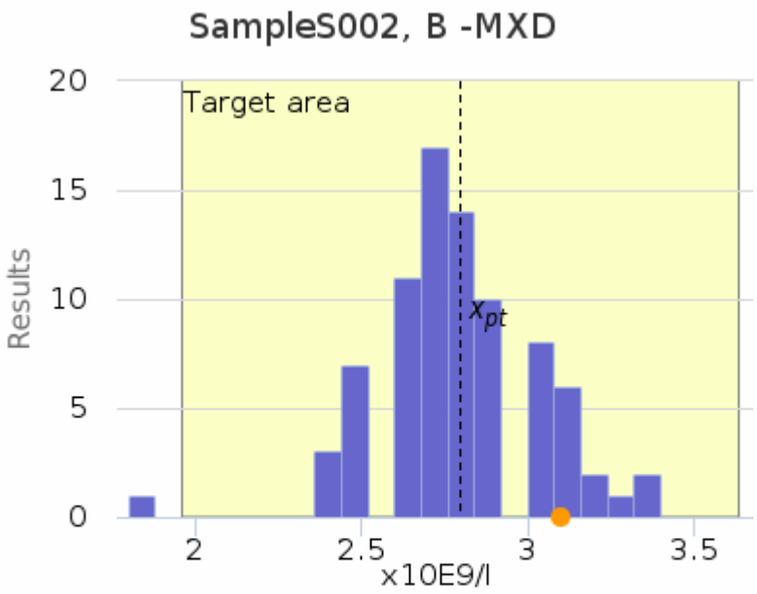


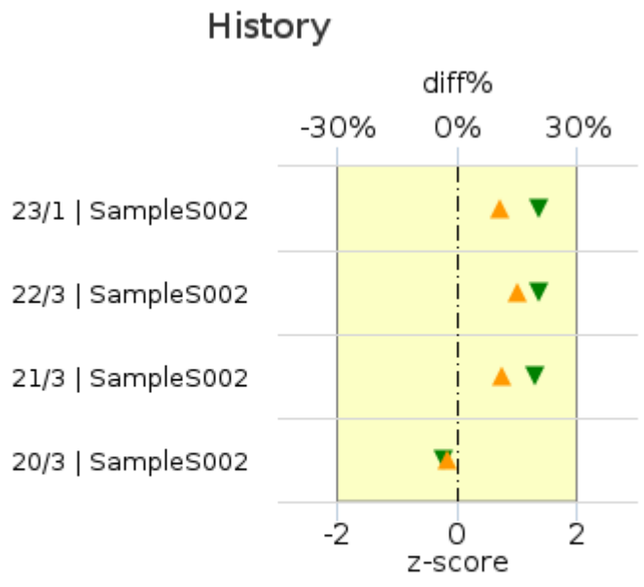


	x_{pt}	sd	SEM	CV%	n
Sysmex	12.5 x10E9/l	0.4	<0.1	3.1	82
All methods	12.5 x10E9/l	0.4	<0.1	3.1	82

Round	Sample	x_{pt}	Result	diff%	z-score
23/1	Sample S002	12.5	13.1	4.7%	1.52
22/3	Sample S002	2.6	2.6	2.0%	0.48
21/3	Sample S002	2.2	2.4	7.6%	1.23
20/3	Sample S002	0.3	0.4	21.6%	1.29
19/3	Sample S002	13.2	13.8	4.4%	1.22
18/3	Sample S002	0.3	0.3	2.7%	0.16
17/3	Sample S002	0.3	0.4	17.8%	1.22
16/3	Sample S002	12.2	12.5	2.4%	0.56

B -MXD |XP-300





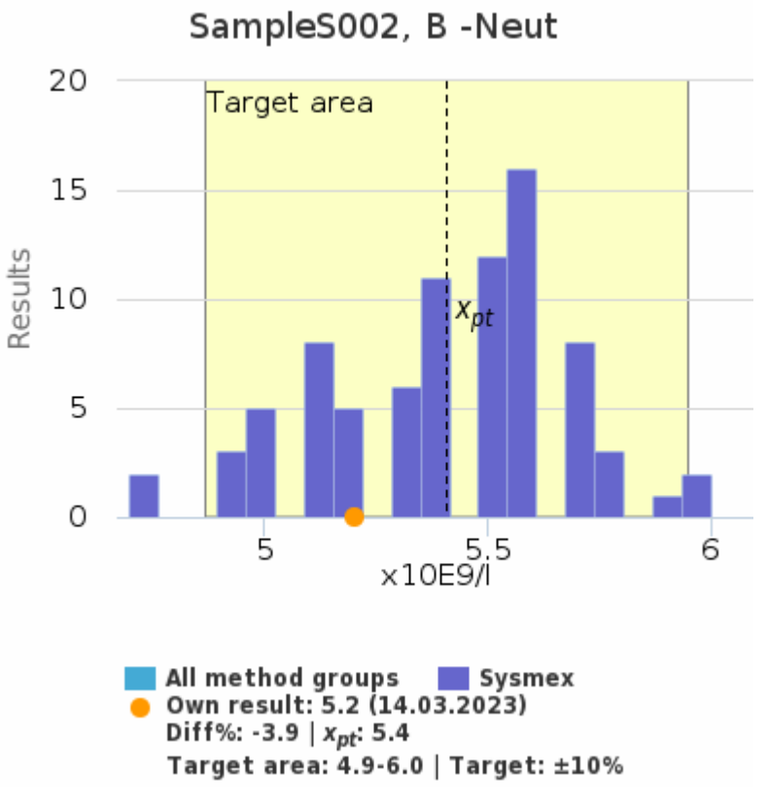
All method groups Sysmex
Own result: 3.1 (14.03.2023)
Diff%: 10.9 | x_{pt}: 2.8
Target area: 2.0-3.6 | Target: ±30%

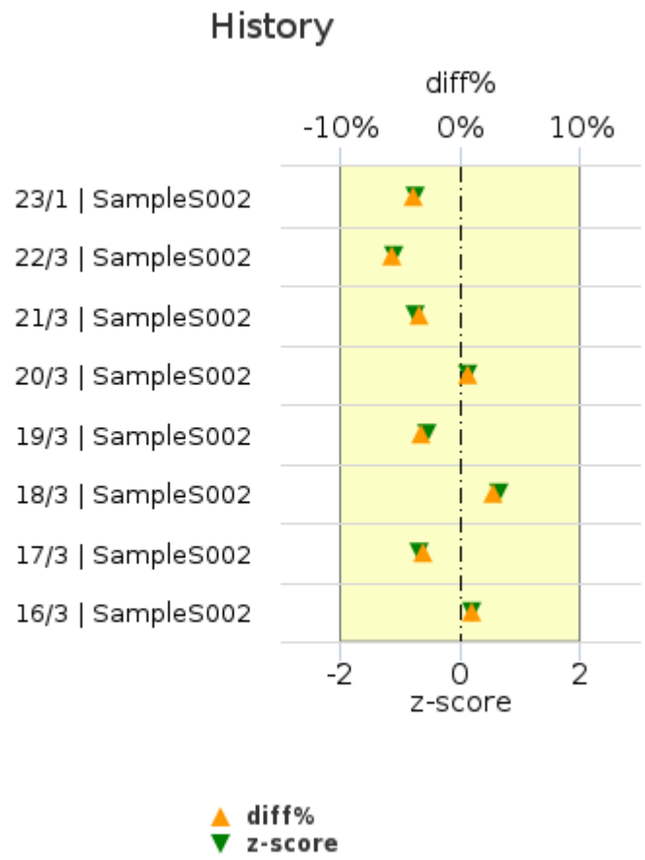
diff%
z-score

	x_{pt}	sd	SEM	CV%	n
Sysmex	2.8 x10E9/l	0.2	<0.1	8.0	82
All methods	2.8 x10E9/l	0.2	<0.1	8.0	82

Round	Sample	x_{pt}	Result	diff%	z-score
23/1	Sample S002	2.8	3.1	10.9%	1.36
22/3	Sample S002	1.3	1.5	15.1%	1.37
21/3	Sample S002	1.2	1.3	11.1%	1.30
20/3	Sample S002	0.5	0.5	-2.6%	-0.22

B -Neut |XP-300





	x_{pt}	sd	SEM	CV%	n
Sysmex	5.4 x10E9/l	0.3	<0.1	5.2	82
All methods	5.4 x10E9/l	0.3	<0.1	5.2	82

Round	Sample	x_{pt}	Result	diff%	z-score
23/1	Sample S002	5.4	5.2	-3.9%	-0.74
22/3	Sample S002	4.5	4.2	-5.7%	-1.09
21/3	Sample S002	4.6	4.4	-3.4%	-0.74
20/3	Sample S002	2.1	2.1	0.6%	0.13
19/3	Sample S002	5.2	5.0	-3.2%	-0.56
18/3	Sample S002	2.0	2.1	2.8%	0.66
17/3	Sample S002	2.1	2.0	-3.1%	-0.68
16/3	Sample S002	6.1	6.2	0.9%	0.20

Report info

Participants

134 participants from 6 countries.

Report info

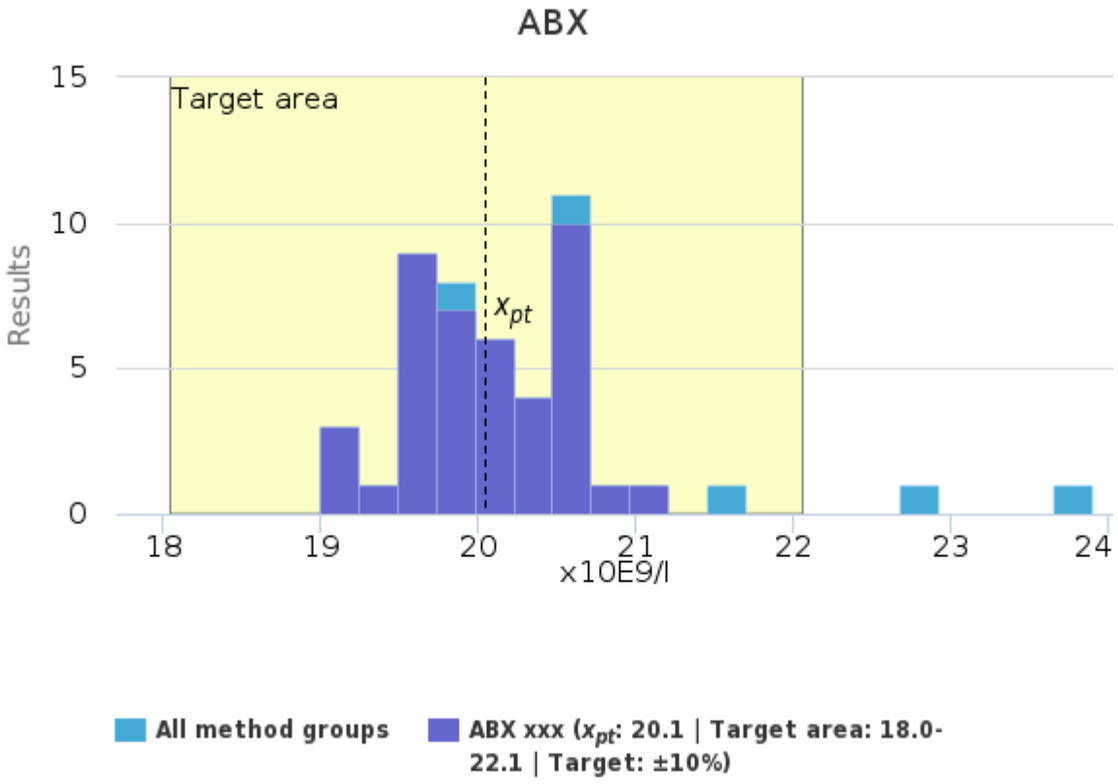
Your own result should be compared to others using the same method.
Assigned values (x_{pt}, target values) are means of the results where results deviating more than +/- 3*standard deviation from the median are removed. The standard uncertainty (u) of the assigned value is reported as standard error 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.

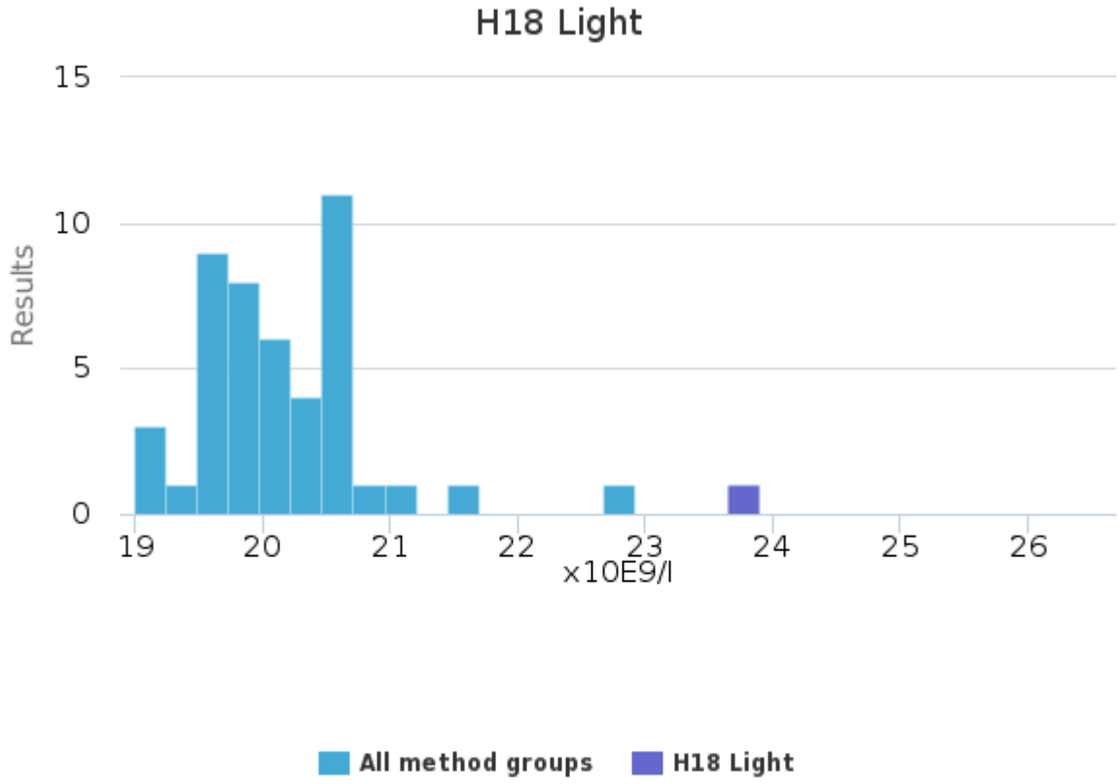
For information on report interpretation and performance evaluation, please see the " EQAS Interpretation guidelines" LabScala User instructions (top right corner ?Help link).

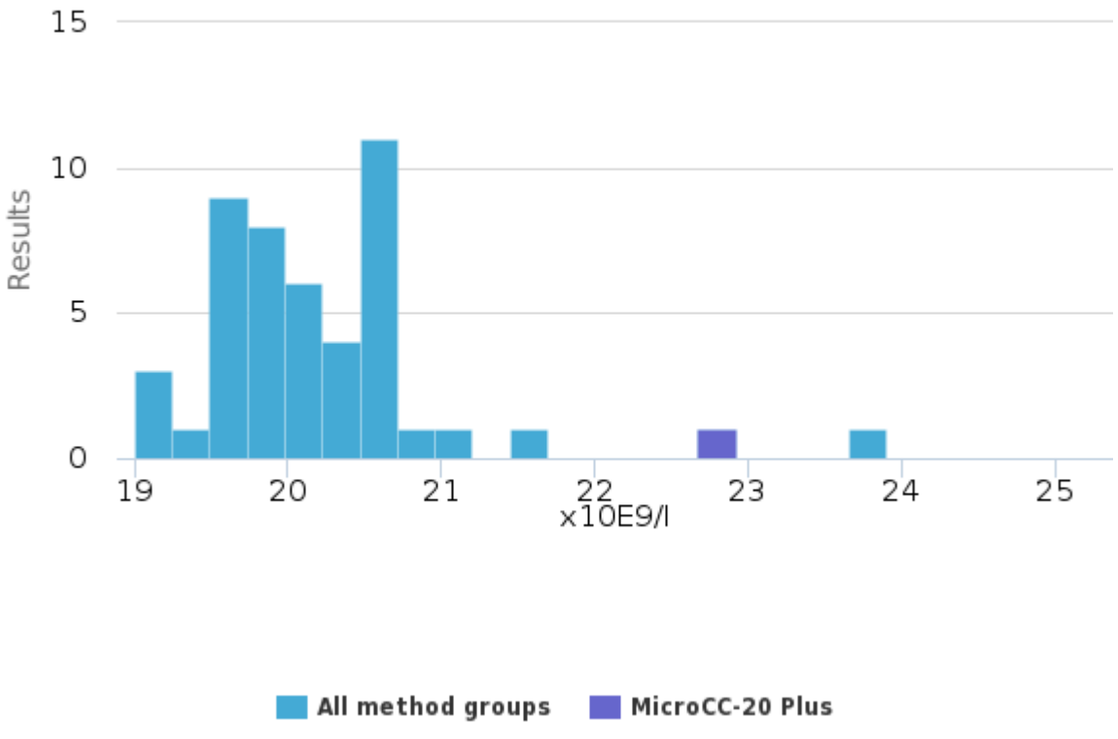
Sample S001 | B -Leuk, x10E9/l

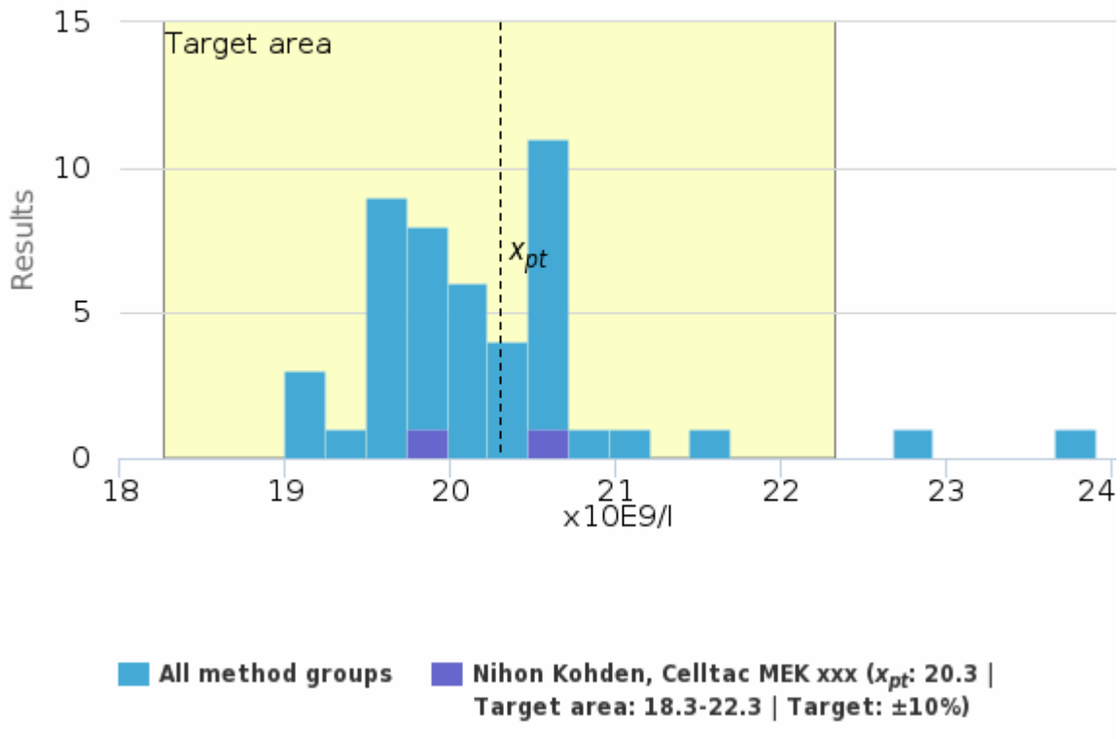
Methodics	x_{pt}	Median	sd	CV%	SEM	min	max	Outliers	n
ABX	20.1	20.0	0.5	2.4	<0.1	19.0	21.0	-	42
H18 Light	-	-	-	-	-	23.9	23.9	-	1
MicroCC-20 Plus	-	-	-	-	-	22.7	22.7	-	1
Nihon Kohden, Celltac MEK	20.3	20.3	0.6	2.8	0.4	19.9	20.7	-	2
Swelab	-	-	-	-	-	21.6	21.6	-	1
All	**20.1**	**20.0**	**0.5**	**2.7**	**<0.1**	**19.0**	**21.6**	**2**	**47**

Sample S001 | B -Leuk, x10E9/l| histogram summaries in LabScala

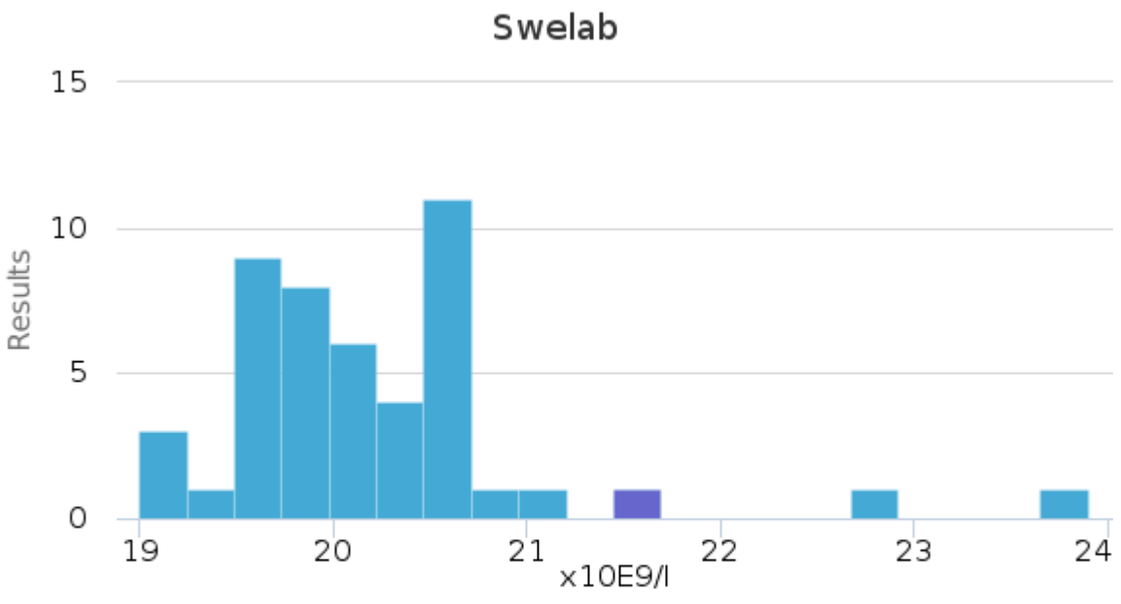








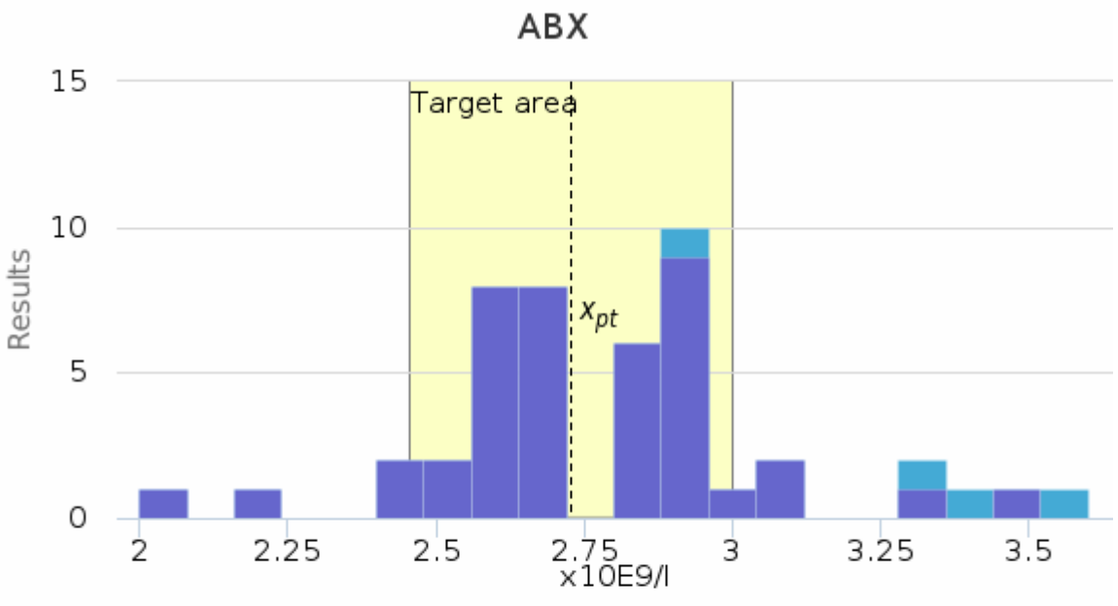
Leucocyte differential count, 3-part, March, 1-2023

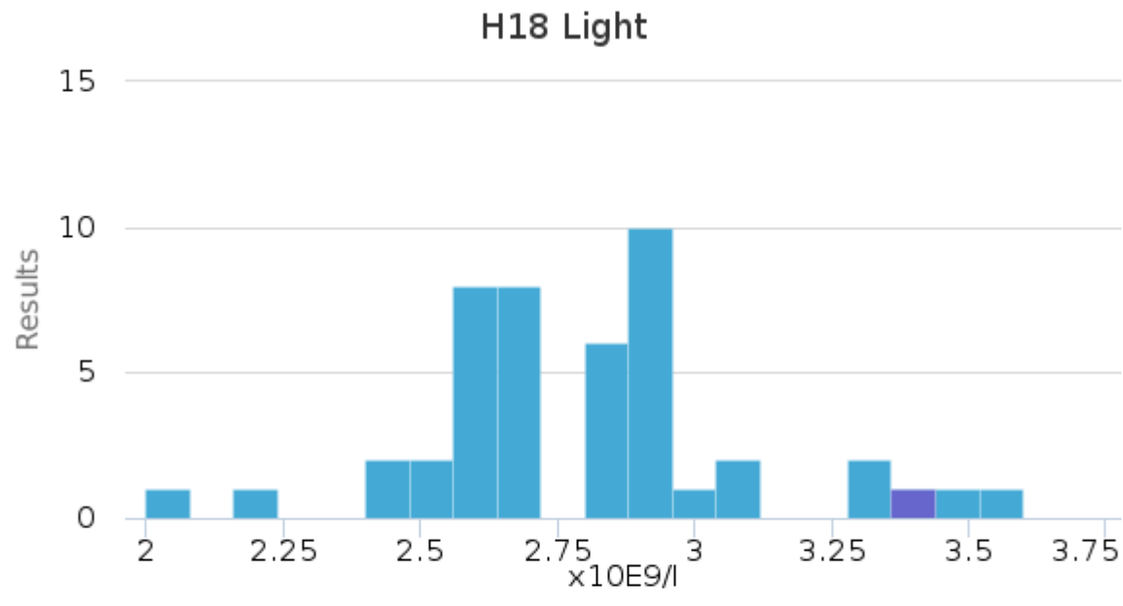


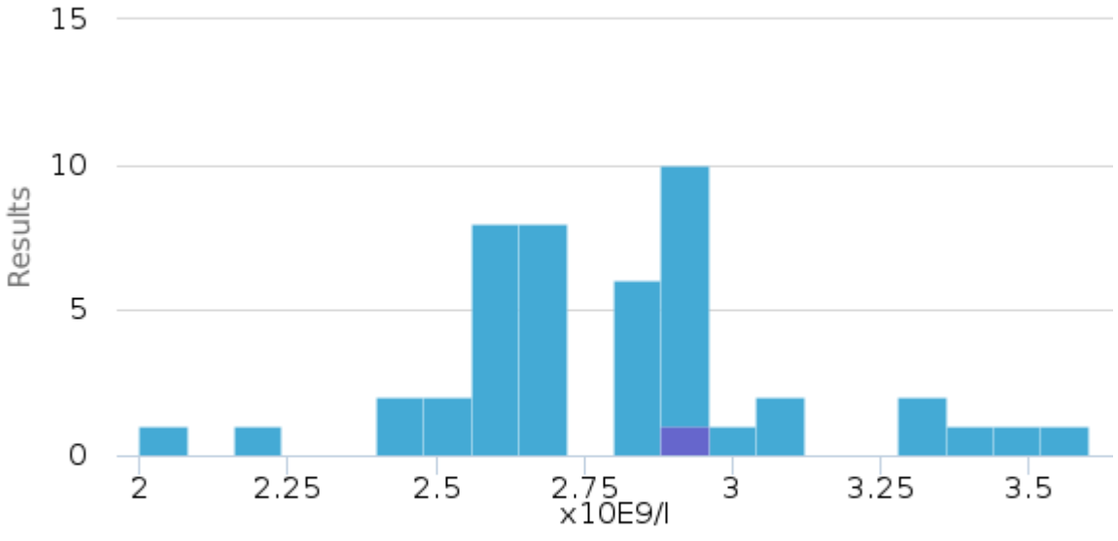
Sample S001 | B -Ly, x10E9/l

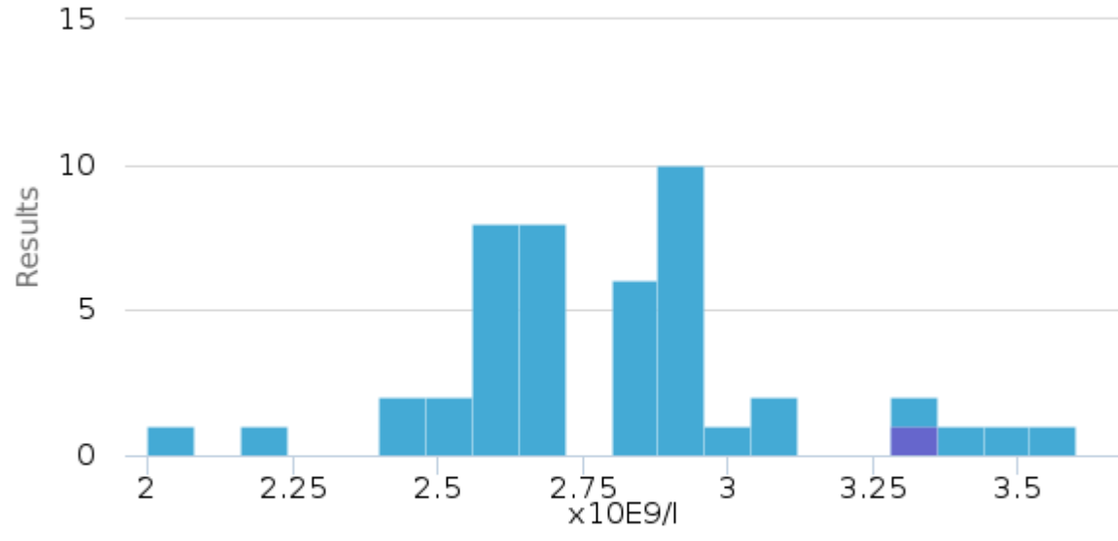
Methodics	x_{pt}	Median	sd	CV%	SEM	min	max	Outliers	n
ABX	2.7	2.7	0.2	8.7	<0.1	2.0	3.3	1	42
H18 Light	-	-	-	-	-	3.4	3.4	-	1
MicroCC-20 Plus	-	-	-	-	-	2.9	2.9	-	1
Nihon Kohden, Celltac MEK	-	-	-	-	-	3.3	3.3	-	1
Swelab	-	-	-	-	-	3.6	3.6	-	1
All	**2.8**	**2.8**	**0.3**	**11.0**	**<0.1**	**2.0**	**3.6**	**-**	**46**

Sample S001 | B -Ly, x10E9/l| histogram summaries in LabScala



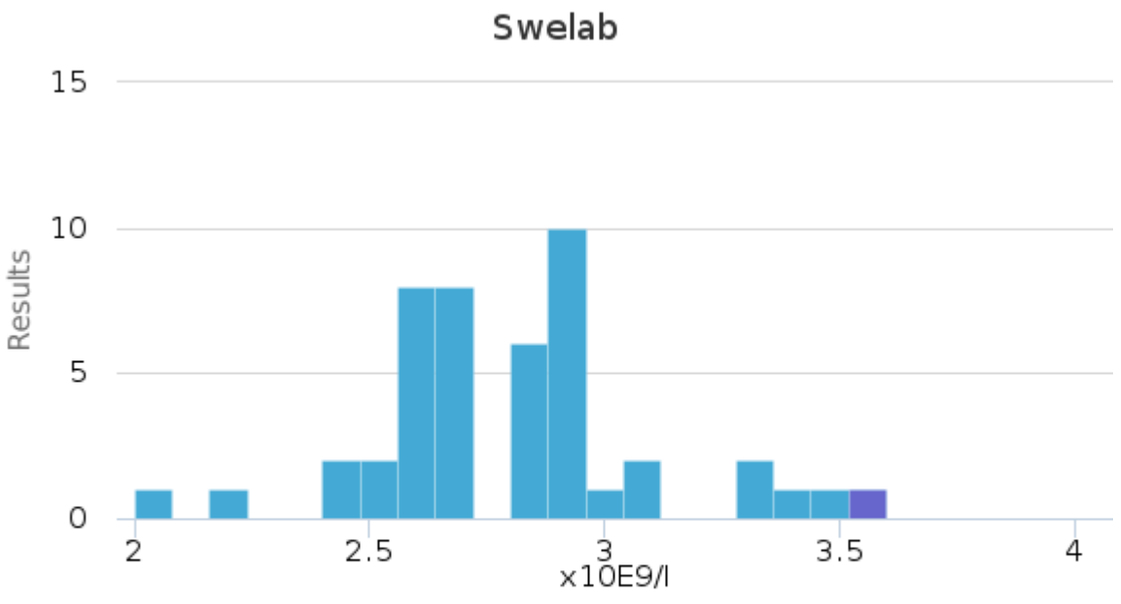






LABQUALITY

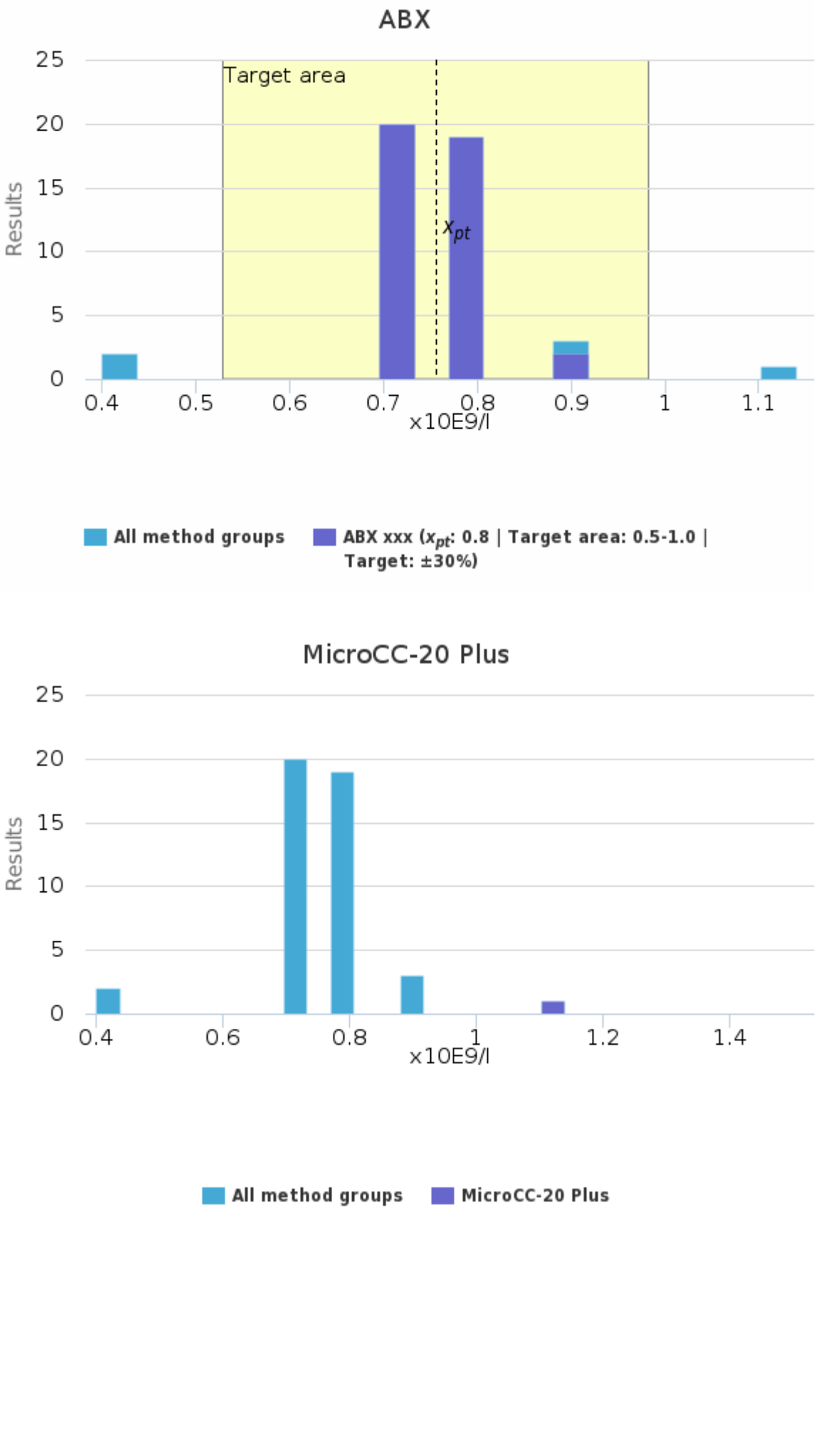
Leucocyte differential count, 3-part, March, 1-2023

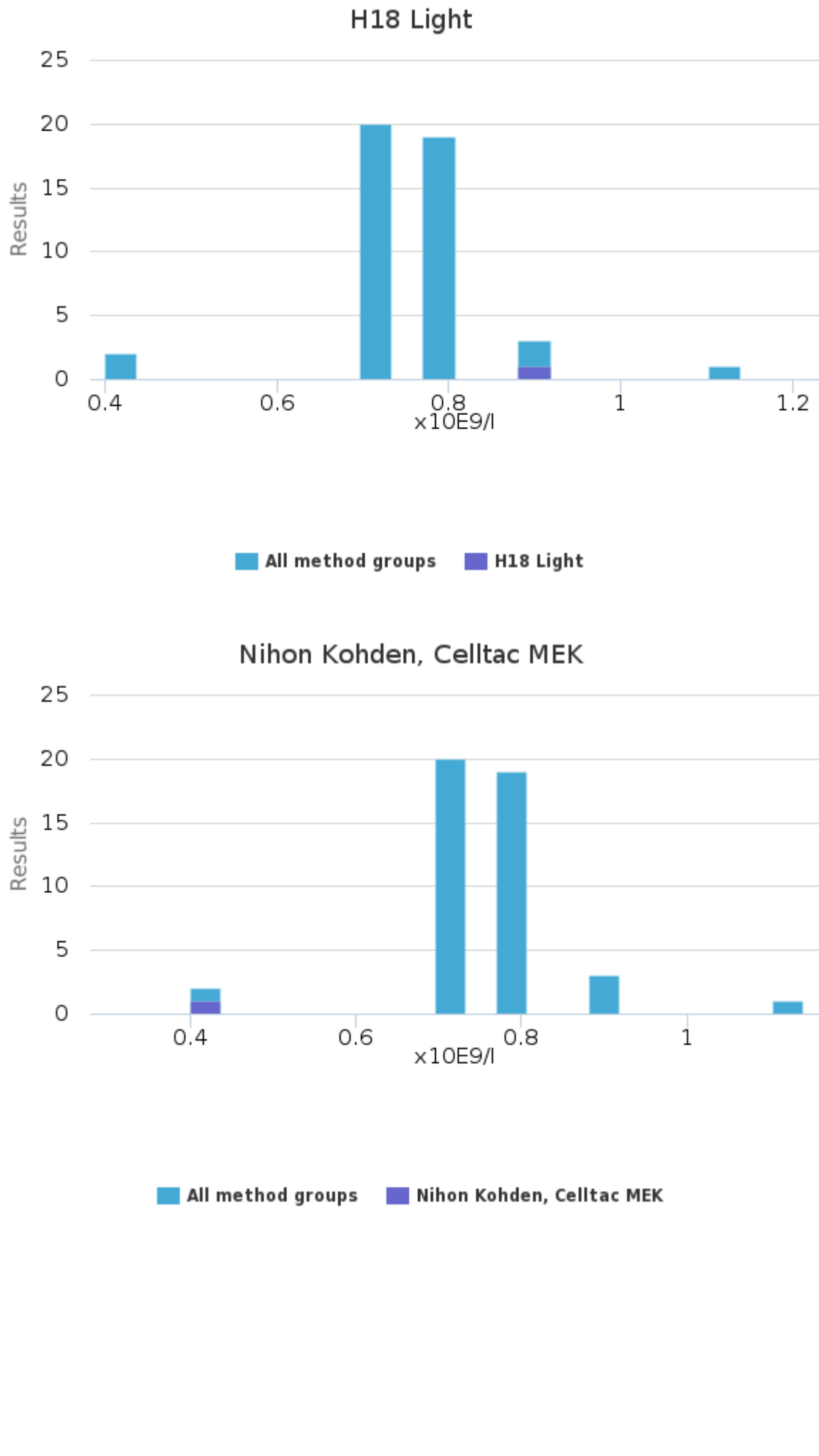


Sample S001 | B -Mo, x10E9/l

Methodics	x_{pt}	Median	sd	CV%	SEM	min	max	Outliers	n
ABX	0.8	0.8	<0.1	7.9	<0.1	0.7	0.9	-	41
H18 Light	-	-	-	-	-	0.9	0.9	-	1
MicroCC-20 Plus	-	-	-	-	-	1.1	1.1	-	1
Nihon Kohden, Celltac MEK	-	-	-	-	-	0.4	0.4	-	1
Swelab	-	-	-	-	-	0.4	0.4	-	1
All	**0.8**	**0.8**	**<0.1**	**8.3**	**<0.1**	**0.7**	**0.9**	**3**	**45**

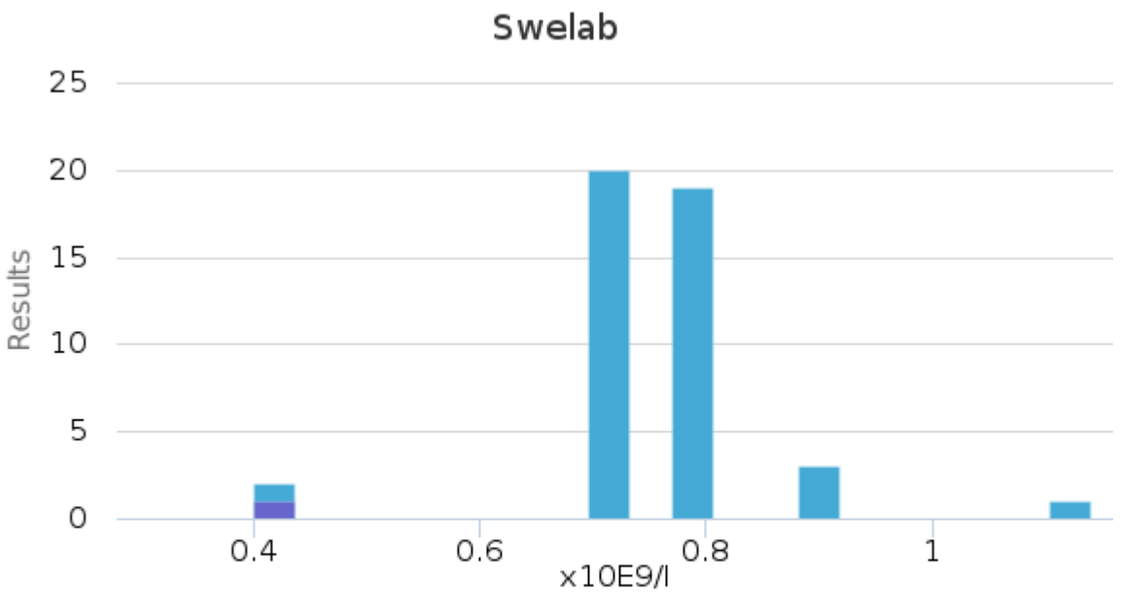
Sample S001 | B -Mo, x10E9/l| histogram summaries in LabScala





LABQUALITY

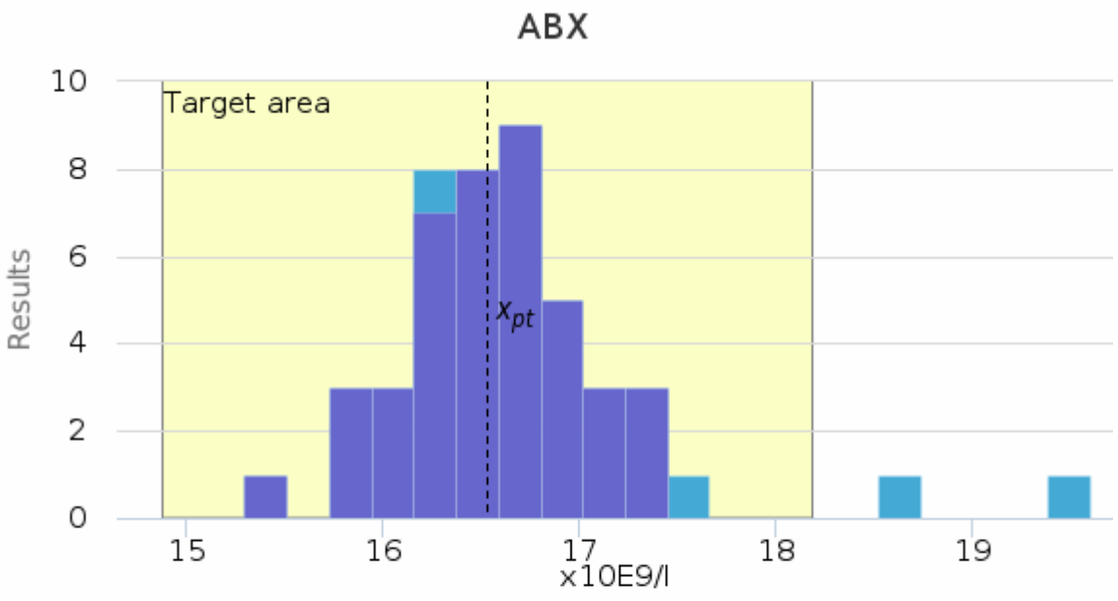
Leucocyte differential count, 3-part, March, 1-2023

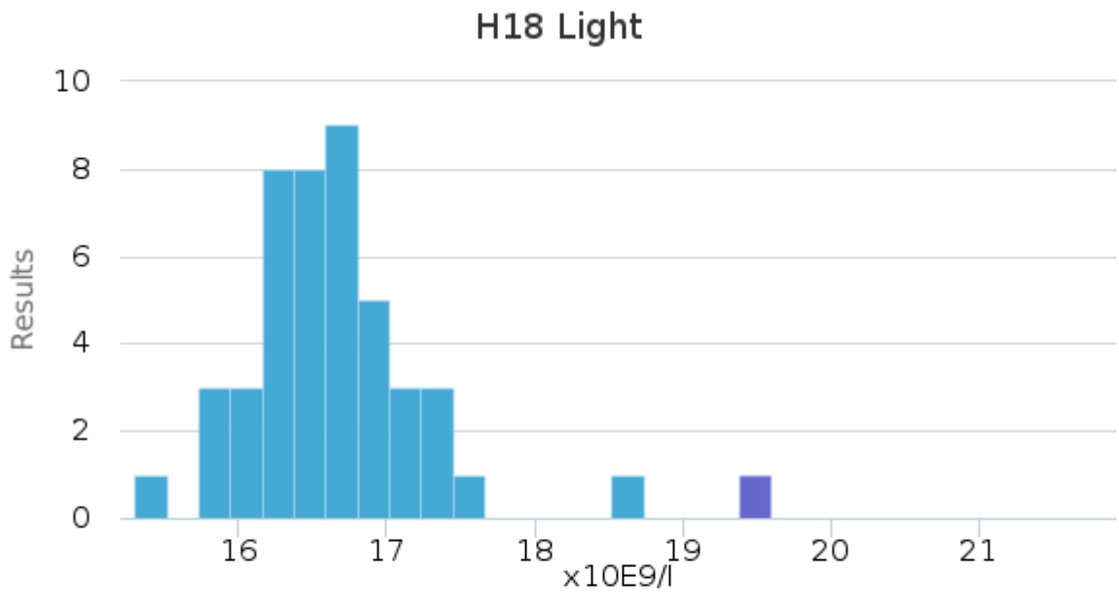


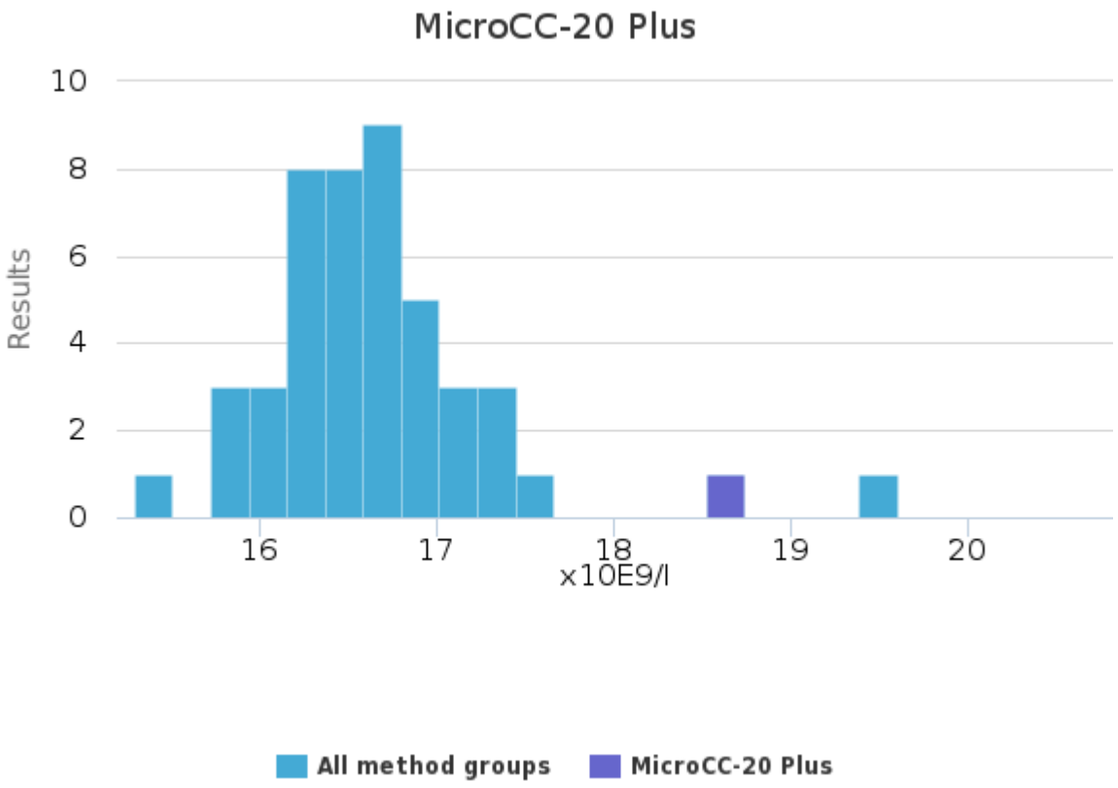
Sample S001 | B -Neut, x10E9/l

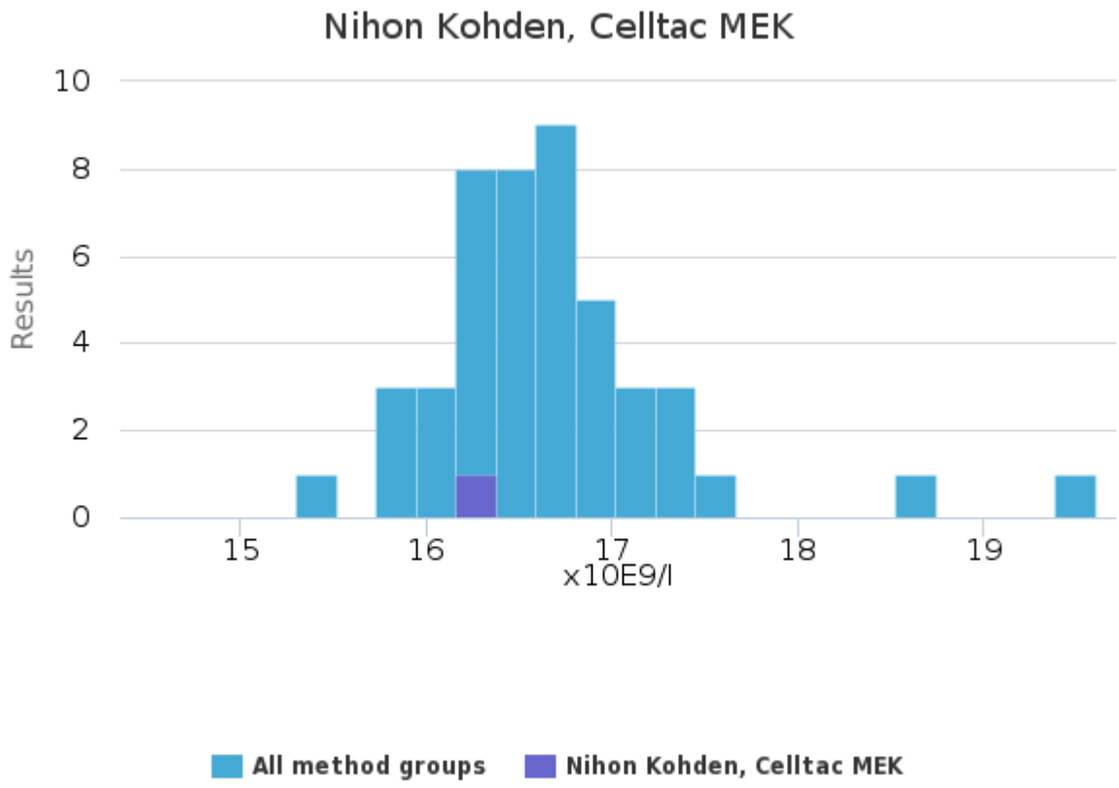
Methodics	x_{pt}	Median	sd	CV%	SEM	min	max	Outliers	n
ABX	16.5	16.5	0.5	2.8	<0.1	15.3	17.4	-	42
H18 Light	-	-	-	-	-	19.6	19.6	-	1
MicroCC-20 Plus	-	-	-	-	-	18.7	18.7	-	1
Nihon Kohden, Celltac MEK	-	-	-	-	-	16.2	16.2	-	1
Swelab	-	-	-	-	-	17.6	17.6	-	1
All	**16.6**	**16.5**	**0.6**	**3.4**	**<0.1**	**15.3**	**18.7**	**1**	**46**

Sample S001 | B -Neut, x10E9/l| histogram summaries in LabScala

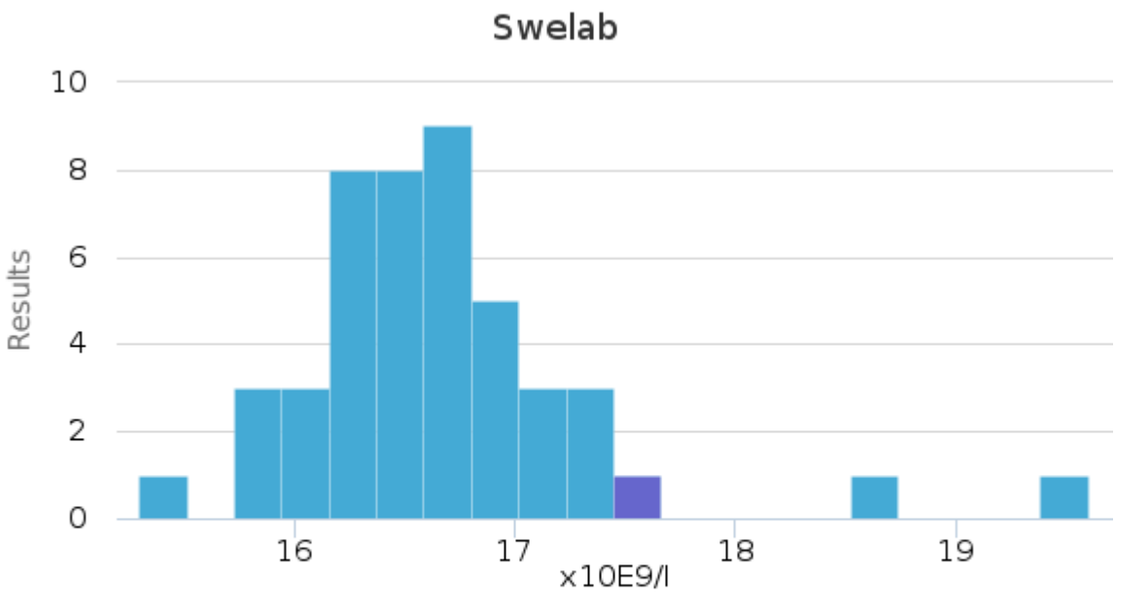








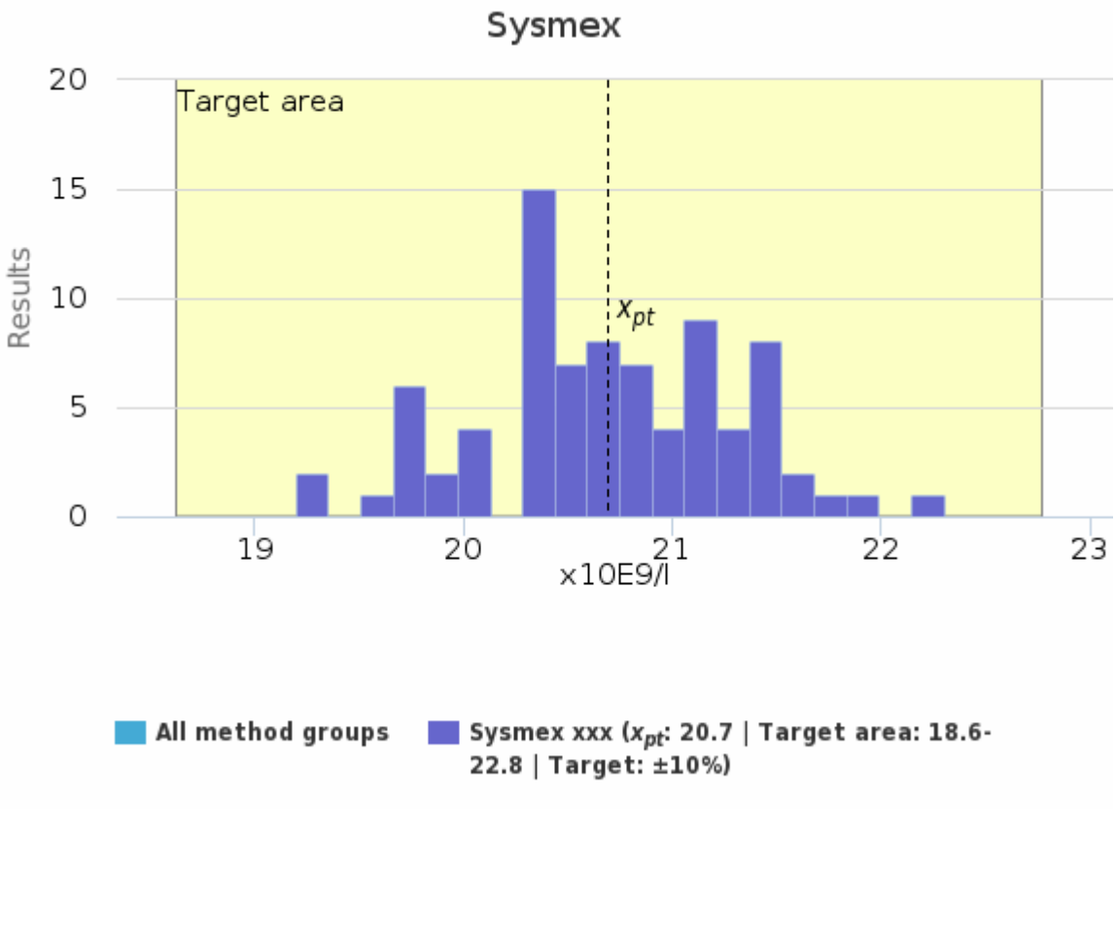
Leucocyte differential count, 3-part, March, 1-2023



Sample S002 | B -Leuk, x10E9/l

Methodics	x_{pt}	Median	sd	CV%	SEM	min	max	Outliers	n
Sysmex	20.7	20.7	0.6	3.0	<0.1	19.2	22.3	-	82
All	**20.7**	**20.7**	**0.6**	**3.0**	**<0.1**	**19.2**	**22.3**	**-**	**82**

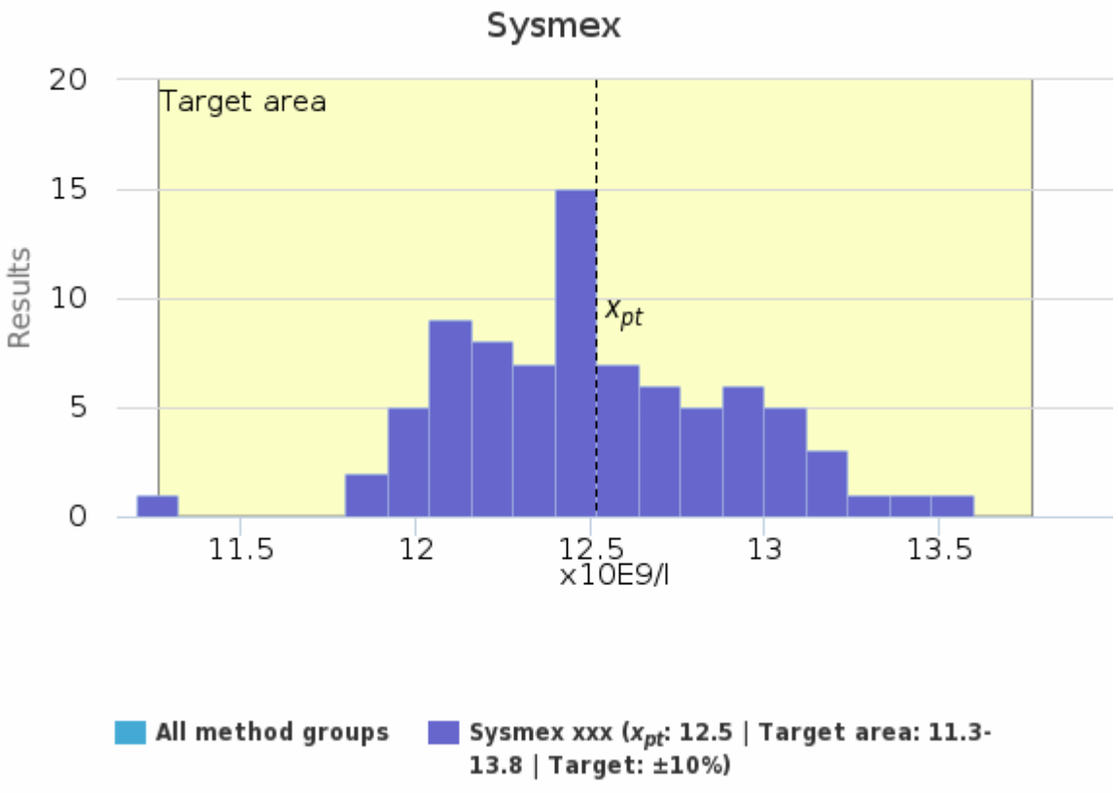
Sample S002 | B -Leuk, x10E9/l| histogram summaries in LabScala



Sample S002 | B -Ly, x10E9/l

Methodics	x_{pt}	Median	sd	CV%	SEM	min	max	Outliers	n
Sysmex	12.5	12.5	0.4	3.1	<0.1	11.8	13.6	1	82
All	**12.5**	**12.5**	**0.4**	**3.1**	**<0.1**	**11.8**	**13.6**	**1**	**82**

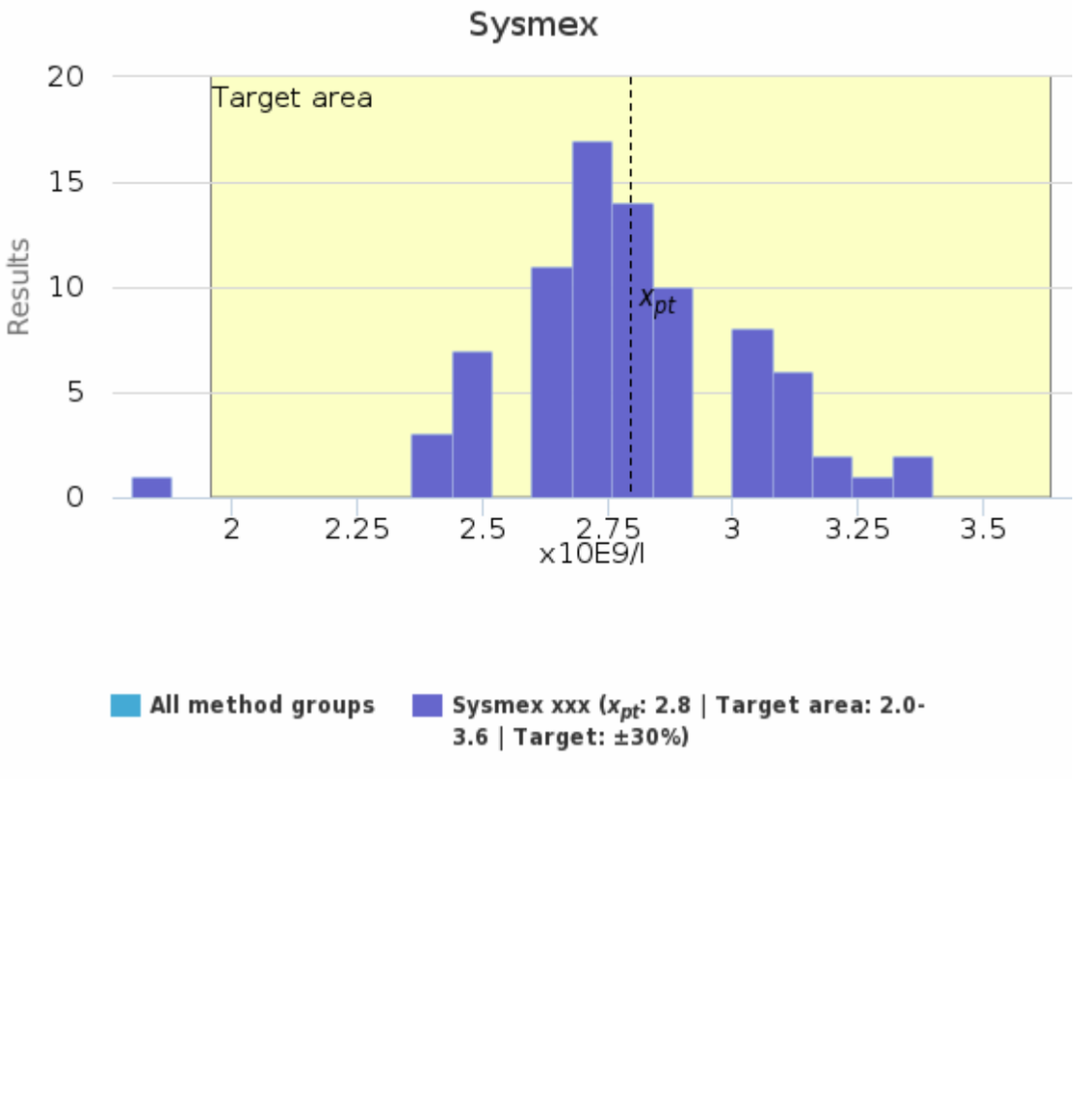
Sample S002 | B -Ly, x10E9/l| histogram summaries in LabScala



Sample S002 | B -MXD, x10E9/l

Methodics	x_{pt}	Median	sd	CV%	SEM	min	max	Outliers	n
Sysmex	2.8	2.8	0.2	8.0	<0.1	2.4	3.4	1	82
All	**2.8**	**2.8**	**0.2**	**8.0**	**<0.1**	**2.4**	**3.4**	**1**	**82**

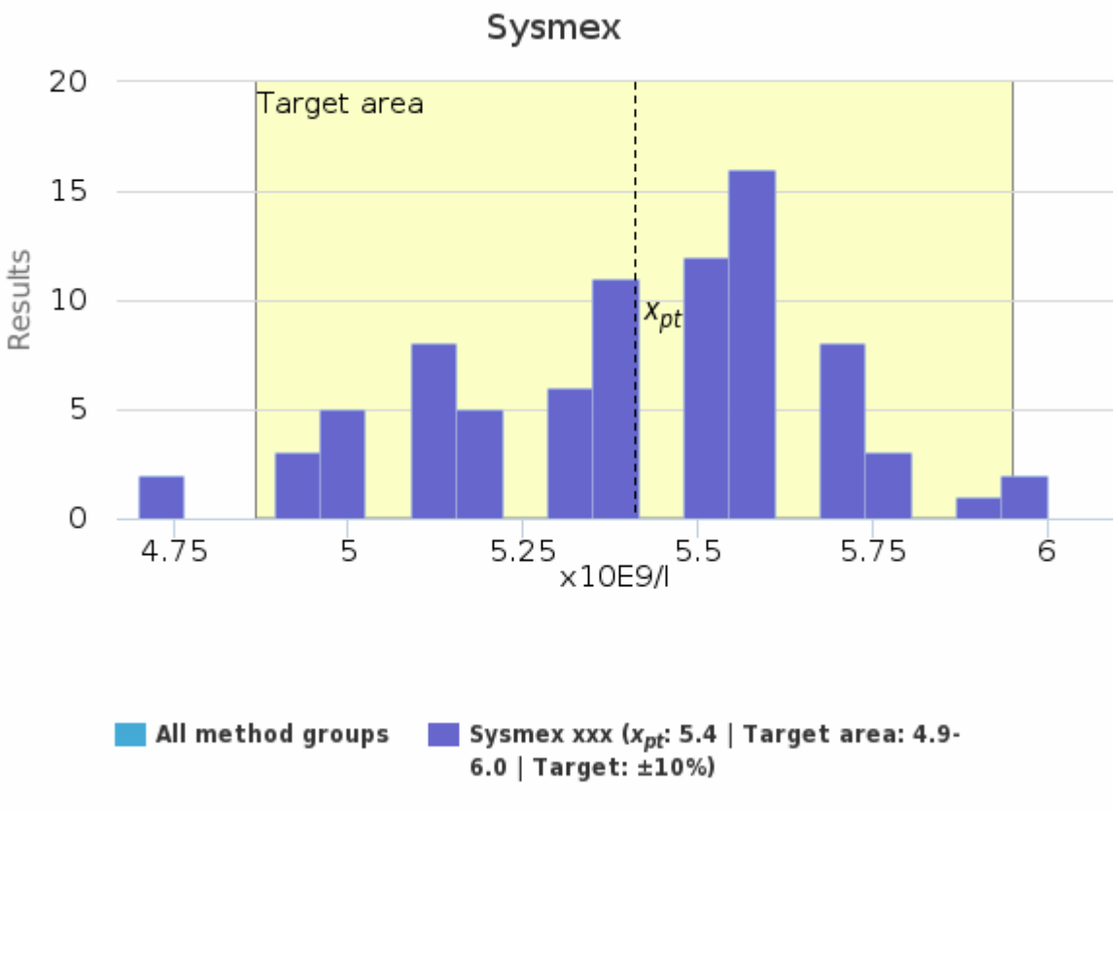
Sample S002 | B -MXD, x10E9/l| histogram summaries in LabScala



Sample S002 | B -Neut, x10E9/l

Methodics	x_{pt}	Median	sd	CV%	SEM	min	max	Outliers	n
Sysmex	5.4	5.5	0.3	5.2	<0.1	4.7	6.0	-	82
All	**5.4**	**5.5**	**0.3**	**5.2**	**<0.1**	**4.7**	**6.0**	**-**	**82**

Sample S002 | B -Neut, x10E9/l| histogram summaries in LabScala



Report info

Participants

134 participants from 6 countries.

Report info

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LABQUALITY

External Quality Assessment Scheme

3-part Leucocyte Differential Count, Round 1, 2023

Specimens
Sample S001 (LQ711423011) was blood cell suspension for all other analysers except Sysmex.

Sample S002 (LQ711423012) was blood cell suspension for Sysmex analysers.

Based on the previous tests and the results of this round, the samples were 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 histograms 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
Automated cell counters can count very reliably the amounts of neutrophils and lymphocytes in the blood. According to the international recommendation the results of lymphocytes and neutrophils of the leucocyte 3-part differentiation should be given as absolute values not as % results, because they are the basis for clinical decision making. Results that were reported clearly in percentages have been removed from the calculation. Both samples represented high leucocyte level samples.

Since different analysers give varying results from the same quality assessment sample, one should only compare results within the same method group.

Commercial controls do not act like fresh patient samples. Because of that in some analysers (Sysmex) the sample of this round should be handled as control sample, not as patient sample to give the right numerical values.

Only numerical values should be checked when analysing control samples. Most of the commercial haematological controls give different kinds of instrument alarms, which should not be taken into account. Instrument alarms should be evaluated with manual microscopy of fresh patient samples.

End of report

2023-03-27

FINAL REPORT

Product no. 4200,4201

Samples sent	2023-03-06
Round closed	2023-03-23
Final report	2023-03-27

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.

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Quality Management
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