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CELL VIABILITY SCHEME

PT Report

Round: CELL13R1

Preliminary ; Final ; Amended

Date of Round Issue: 12 November 2013

Report Number: CELL2013_R1_Report01

Comments (reason for amendment or re-issue):

Participant's name: Laboratory for Cell and Molecular Biology

Participant Code: L104

SECTION 1 - General Information

Design of the CELL viability scheme: The cells used for this Scheme are a Jurkat cell line, which were grown in culture in RPMI1640 10% FBS at a concentration of 0.1 to 1.5×10^6 / ml in T175 cm² in a humidified incubator at 37°C, 5% CO₂. Cells were then frozen in an animal-protein-free, serum-free and defined- cryopreservation medium containing 10% dimethyl sulfoxide (DMSO). Two different Test Items containing cells at a different level of viability (i.e. Tube A and Tube B) were provided to each Participant. For each Test Item (tube A and tube B) the percentage of viable cells was measured following the Participant's usual routine testing method(s). The results were reported by all Participants through the website <http://biospecimenpt.ibbl.lu>, and were collected under the following methods: Trypan Blue Staining or Flow Cytometry.

Confidentiality: The identities of Participants and their results and performance are kept confidential and are known only to persons involved in the operation of the PT Scheme.

Subcontractors: IBBL is implementing this Program internationally in collaboration with ISBER, the International Society for Biological and Environmental Repositories, based at 375 West 5th Ave, Suite 201, Vancouver, BC, Canada V5Y 1J6. The ISBER PT Advisory Group participates in the development of the annual PT program, in the Value Assignment to test items, and provides advice to PT participants.

Technical data: For your reference, all information related to the description of the Test Item is included in the "Test Item Information Sheet" (TIIS) which was provided to you along with the samples. Extra copies can be obtained via email upon request.

Personalized Advice Service: Advice and educational feedback to Participants is available on demand (please contact IBBL using details on page 1 of this report).

Customer Satisfaction Survey: IBBL seeks your feedback, both positive and negative, to be used and analysed to improve its management system, future Schemes, and customer service. Please complete our survey, available online on this page: https://www.surveymonkey.com/s/IBBL_PTfeedback.

SECTION 2 – General Statistics

23 Participants registered to the CELL VIABILITY SCHEME Round CELL13R1 performed in 2013.

Geographic Origin of Participants

Country	Count	%
AFGHANISTAN	1	4
BELGIUM	1	4
CANADA	2	9
CHINA	5	22
HONG KONG	1	4
ITALY	1	4
KOREA, REPUBLIC OF	1	4
LUXEMBOURG	1	4
SINGAPORE	1	4
SOUTH AFRICA	1	4
SPAIN	2	9
SWITZERLAND	1	4
UNITED STATES	4	17
YUGOSLAVIA	1	4

Type of Facilities

Facility	Count	%
Hospital Laboratory	13	57
Private Laboratory	6	26
University/Academic	4	17

Equipment Performance Verification (EPV)
Frequencies - Trypan Blue Staining

Equipment	Count	%
not specified	6	26
once per day	2	9
once per month	3	13
once per year	4	17
other	8	35

Equipment Performance Verification (EPV)
Frequencies - Flow Cytometry

Equipment	Count	%
not specified	14	61
once per day	3	13
once per month	1	4
once per year	3	13
other	2	9

Methodologies Used

Trypan Blue Staining	Flow Cytometry
18	9

Type of Trypan Blue Equipment

Equipment	Count	%
not specified	6	26
Automated Countess	3	13
Automated Vicell	1	4
Conventional microscope	12	52
other	1	4

Type of Trypan Blue Hemocytometer

Hemocytometer	Count	%
not specified	9	39
Improved Neubauer	6	26
Neubauer	4	17
other	4	17

Type of Flow Cytometry Equipment

Equipment	Count	%
not specified	14	61
BD FACSCalibur	1	4
BD FACS Canto	1	4
BD FACS Canto II	1	4
BD FACS Verse	1	4
Beckmann FC 500	2	9
Millipore Guava	2	9
other	1	4

SECTION 3 – Data Analysis Results and Evaluation of Performance

Statistical Procedure Used:

Statistical procedures used were those proposed by the International Harmonized Protocol for the Proficiency Testing of Analytical Chemistry Laboratories (IUPAC Technical Report 2006). The standard deviation for Proficiency Testing was determined by the ISBER Proficiency Testing Advisory Group. The outliers were calculated with the Grubb's test, and were excluded from the statistical summaries.

The scoring system is based on deviation from the assigned value.

Deviation from assigned value (z-score)	Consensus Score
< 1 standard deviation	0
≤ 2 standard deviation	1
> 2 standard deviation	2
> 3 standard deviation	3

Cell Viability assigned values were obtained separately with the Trypan Blue Staining method and Flow Cytometry method and were based on expert laboratories.

Trypan Blue Staining

YOU SUBMITTED RESULTS WITH THIS METHOD

Expected Results

Panel Composition and expected results (assigned values with their uncertainties)

Sample	Sample content	Assigned value (%)	Total uncertainty of the assigned value (%)	Proficiency testing standard deviation (%)
Tube A	JURKAT CELLS	90.60	4.80	13.59
Tube B	JURKAT CELLS	67.00	1.60	10.05

Your Results

CELL VIABILITY ASSESSMENT

Sample	Sample content	Your result (%)	Your consensus score
Tube A	JURKAT CELLS	81.82	0
Tube B	JURKAT CELLS	58.62	0
Sum quantitative panel score			0

Your z-score for the two CELL VIABILITY measures is -0.646 (Tube A) and -0.834 (Tube B)

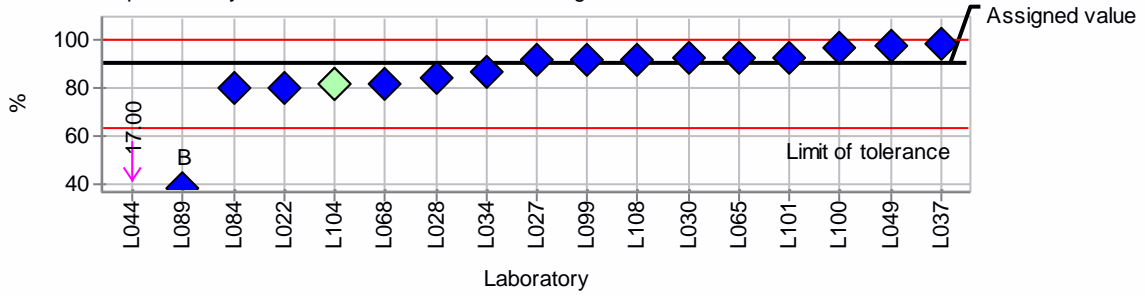
Your z-score for Tube A has been designated as "accurate" or "very satisfactory".

Your z-score for Tube B has been designated as "accurate" or "very satisfactory".

If your z-score has been designated as "questionable" or "requiring action", some additional feedback may be found at the end of this report.

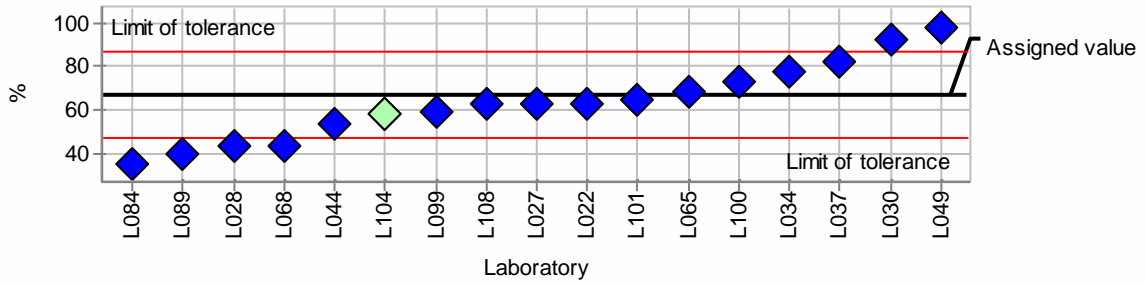
Tube A Results

No. of laboratories:	15	Median:	91.70
No. of outlier values:	2	Minimal value:	17.00
Mean:	89.44 %	Maximal value:	98.35
Reproducibility s.d.:	6.42 %	Range:	81.35



Tube B Results

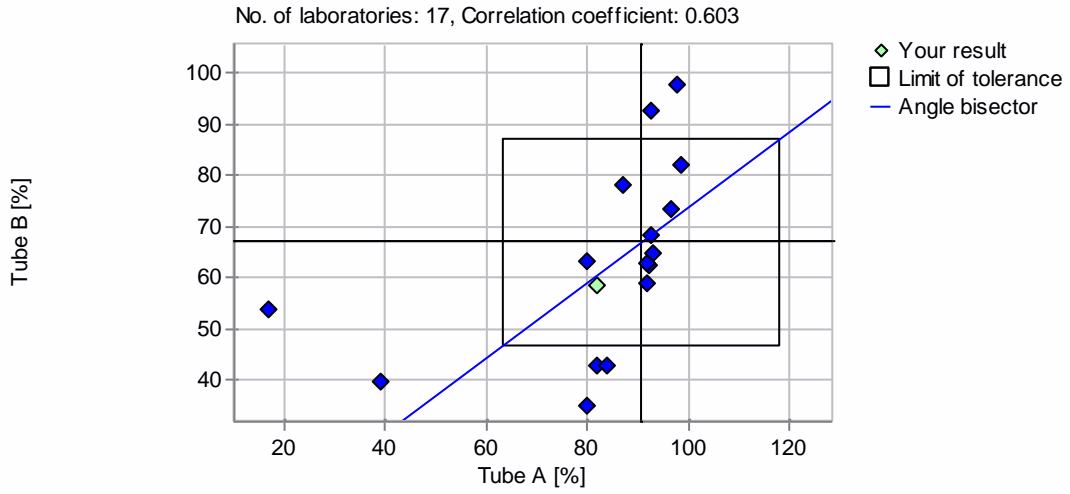
No. of laboratories:	17	Median:	63.00
No. of outlier values:	0	Minimal value:	35.00
Mean:	63.44 %	Maximal value:	97.80
Reproducibility s.d.:	17.77 %	Range:	62.80



Your results are shown in green.

Youden Plot For CELL VIABILITY By Trypan Blue Staining

1



Comment on Youden Plot Interpretation

In the Youden plot, points that lie near the 45-degree reference line but far from the crossing of the assigned values indicate large systematic error. Points that lie far from the 45-degree line indicate large random error. Points outside the rectangle indicate large total error.

Your History of Z-Scores

This is your first participation with this method in the scheme; therefore, no history of your z-scores is available yet.

A history of your z-scores will be available in your future participations.

Flow Cytometry

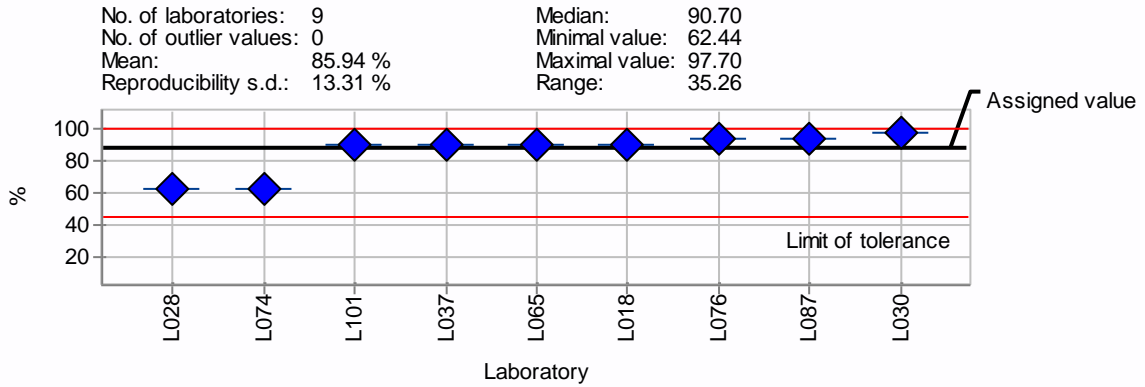
YOU DID NOT SUBMIT RESULTS WITH THIS METHOD

Expected Results

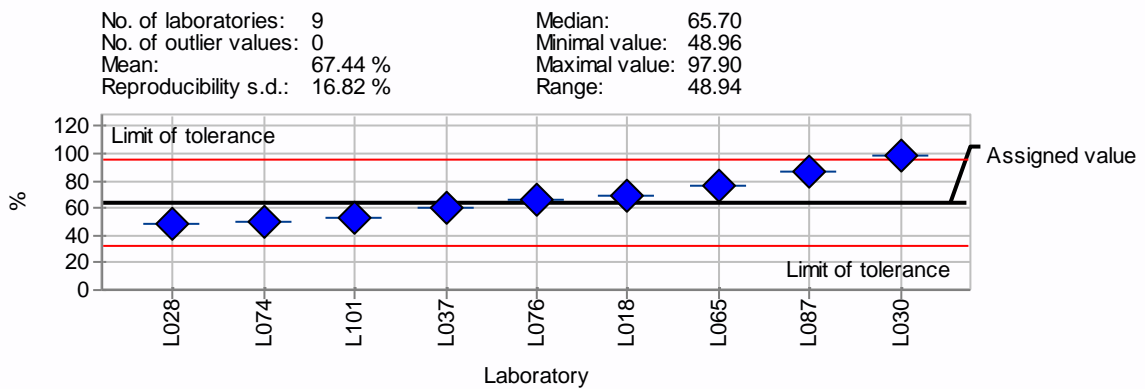
Panel Composition and expected results (assigned values with their uncertainties)

Sample	Sample content	Assigned value (%)	Total uncertainty of the assigned value (%)	Proficiency testing standard deviation (%)
Tube A	JURKAT CELLS	88.10	3.80	22.02
Tube B	JURKAT CELLS	63.90	3.00	15.97

Tube A Results

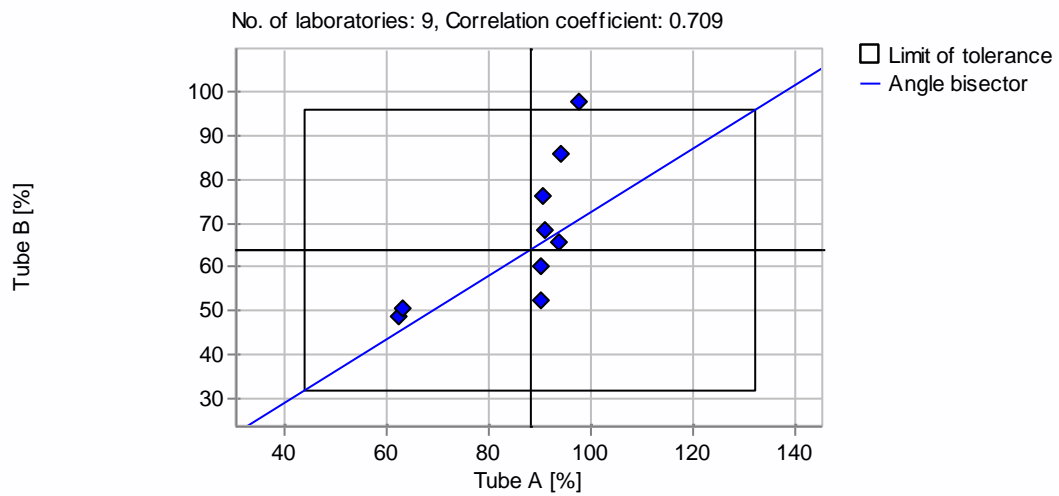


Tube B Results



Youden Plot For CELL VIABILITY By Flow Cytometry

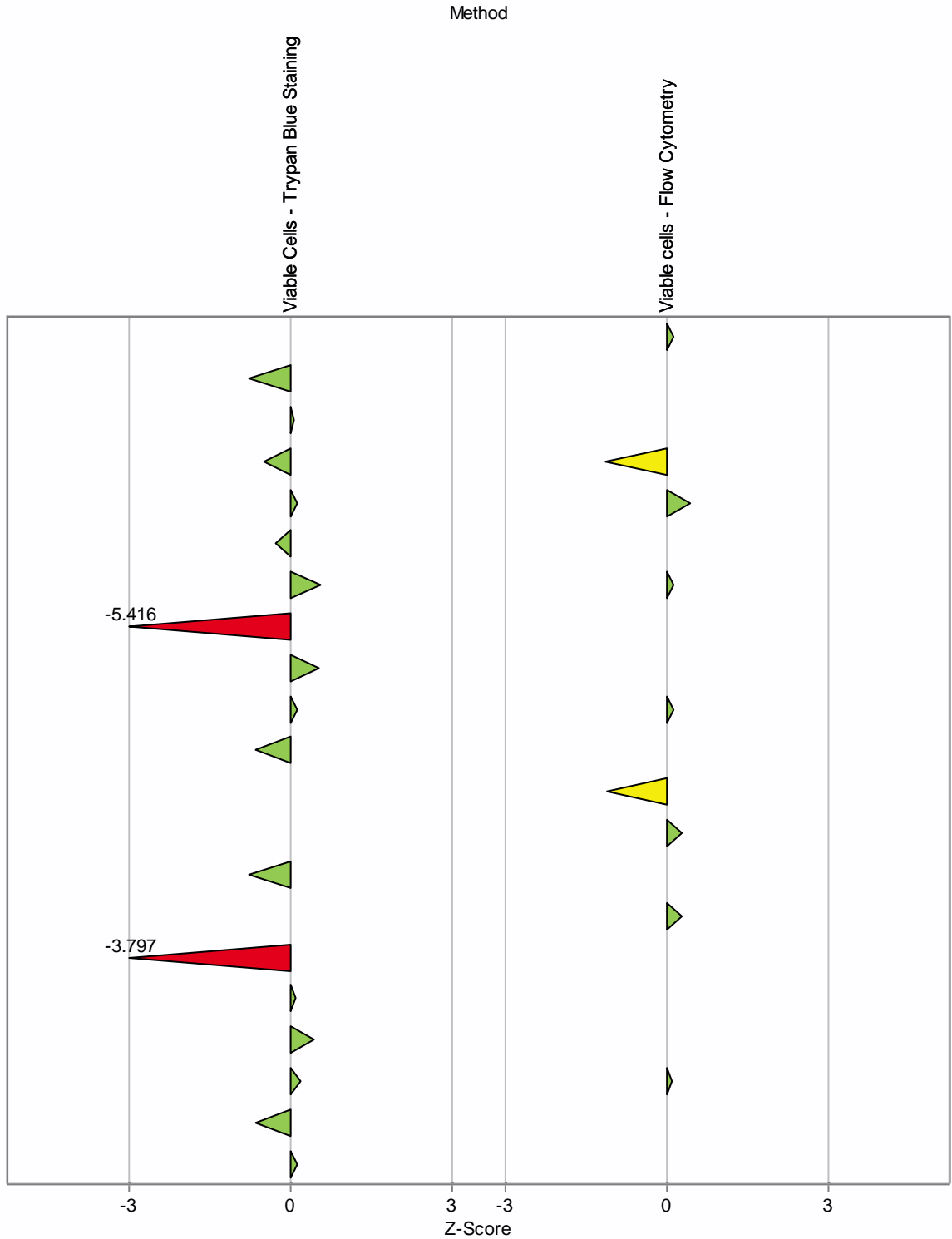
1



Comment on Youden Plot Interpretation

In the Youden plot, points that lie near the 45-degree reference line but far from the crossing of the assigned values indicate large systematic error. Points that lie far from the 45-degree line indicate large random error. Points outside the rectangle indicate large total error.

Global CELL VIABILITY SCHEME 2013 Z-Scores For Tube A



This report has been validated by the ISBER PT Coordinator.

A handwritten signature in black ink, appearing to read 'Fay BETSOU', with a large, stylized flourish at the end.

Fay BETSOU, PhD HDR, Coordinator