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TECHNICAL DATA SHEET 734

ViaCheck™ Concentration Controls

Catalog Numbers: 26409, 24627, 24628, 24629 or SingleShots™ BLIVC50NSS, BLI60NS, BLI70NS, BLI80NS

ATTENTION: PLEASE NOTE THAT OUR RECOMMENDED SETTINGS HAVE CHANGED.

INTRODUCTION

Analytical instruments such as viability analyzers require a program of routine maintenance and QC to ensure that each instrument yields accurate and consistent results, and that comparable performance is achieved between instruments. ViaCheck™ Viability and Concentration Standards may be used to validate image-based viability instruments before they're commissioned, and to ensure optimum performance on an ongoing basis. The microsphere standards are pre-stained, and need only be loaded into the analyzer for confirmation of live / dead ratios and counts. Non-biological surrogates remove the need for sample preparation, and offer exceptional stability and reproducibility.

DESCRIPTION

ViaCheck Viability and Concentration Controls are comprised of individual or mixed populations of (viable) and (non-viable) microsphere surrogates. The suspension simulates a sample of live / dead (or dying) cells stained with Trypan Blue. ViaCheck are intended to serve as reference materials for use with image-based instruments that rely on the Trypan Blue dye exclusion method. ViaCheck have been successfully used with instruments such as the Vi-CELL®, CEDEX® HiRes, Countess™, etc.

CHARACTERISTICS

26409 or BLIVC50NSS 0.5×10^6 particles / mL
24627 or BLI60NS 1×10^6 particles / mL
24628 or BLI70NS 4×10^6 particles / mL
24629 or BLI80NS 8×10^6 particles / mL

** Nominal values. Specific value reported on Certificate of Analysis.*

MATERIAL

Material Supplied

- Microspheres suspended in a solution of buffered salts and surfactant containing 0.08% sodium azide in a 20mL bottle or SingleShot™ vial.

Material Required

- Cell viability analyzer (ex. Coulter Vi-CELL™ XR Cell Viability Analyzer)
- Precision pipets with disposable tips to deliver 500µl
- Isotonic buffered saline diluent (optional)

PROCEDURE

Researchers are advised to optimize the use of particles in any application. For the best accuracy, be sure to work carefully and quickly when sampling and pipetting ViaCheck™ particles. Allowing the particles to stand for even a short period of time could lead to inaccurate data and results. We suggest that only a single, but no more than 3, samples be loaded into the carousel at a time to safeguard against settling.

1. Gently mix (manual inversion or tube rotator) the vial of particles to ensure a well mixed suspension.
2. Place a 500µL sample of the particles into an analyzer sample cup.
3. Place the sample cup in the analyzer sampling station.
4. Using the Vi-CELL™ XR analyzer menu, set up and save a "CELL TYPE" for Viability controls at the settings below. *Note*: The settings below allow the user to analyze the ViaCheck™ Viability Control Particles and may have to be adjusted for each instrument.

Cell Type	Concentration Settings
Minimum Cell Diameter (µm)	5
Maximum Cell Diameter (µm)	50
Minimum Circularity	0
Dilution Factor	1.0
Cell Brightness (%)	85
Cell Sharpness (%)	100
Viable Cell Spot Brightness (%)	75
Viable Cell Spot Area (%)	5
Decluster Degree	Low
Aspirate Cycles	1
Trypan Blue Mixes	3

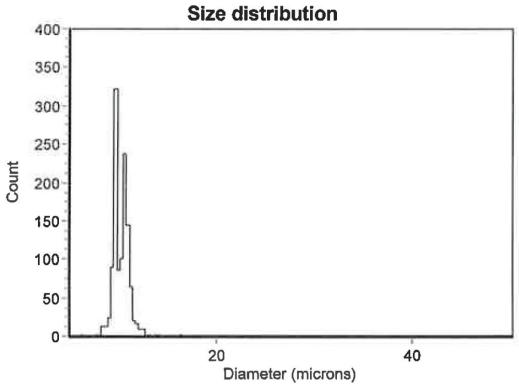
5. Analyze the sample according to the analyzer's instructions.

IMPORTANT NOTE ON EXPECTED RESULTS

Certificates of Analysis (COAs) for ViaCheck™ products provide formal lot-specific values for concentration and viability that may be used to establish instrument QC pass / fail criteria. Facilities may establish specific pass / fail criteria after taking historical instrument performance and study objectives into consideration. Users will often base these criteria around the lot-specific result that is issued, e.g. results within some persentage of the reported values on the COA based on established control limits. See "Establishing control limits for the instrument" in *TSD 0711 ViaCheck™ for Cell Viability Analyzers: Best Practices* on bangslabs.com.

REFERENCES

Lew C, Gomez JA, Rhyner MN. *"Instrument-to-instrument Variability in the Vi-CELL Automated Viability Analyzer."* www.particle.com, 2012, Beckman Coulter



RESULTS

Cell Count	1156
Viable Cell Count	0
Viability (%)	0
Total Cells / mL (x 1.0E6)	1.03
Viable Cells / mL (x 1.0E6)	0
Average Diameter (µm)	10.25
Average Circularity	0.95
Images	50
Average Cells / Image	23.1
Average Background Intensity	205

Representative Vi-CELL® XR data : ViaCheck™ Concentration Control Particles

RELATED LITERATURE

TSD 0711 ViaCheck™ for Cell Viability Analyzers: Best Practices
TSD 1008 Handling & Pipetting Concentration Standards
TSD 0708 Optimization of Vi-CELL® XR Settings for calibration using ViaCheck™ Controls.

TRADEMARKS AND REGISTERED TRADEMARKS

ViaCheck™ & SingleShots™ are trademarks of Polysciences, Inc.
Vi-CELL® is a registered trademark of Beckman Coulter, Inc.
CEDEX® is a registered trademark of Roche Inc.
Countess™ is a trademark of Thermo Fisher.

STORAGE AND SAFETY

Storage Store at 2-8˚C. Refrigerated storage is intended to deter the growth of opportunistic microorganisms within the suspensions; it is important to note that biocontamination would alter particle counts. Freezing of particles may result in irreversible aggregation.

Safety This particle suspension contains sodium azide. Sodium azide may react with lead and copper plumbing to form explosive metal azides. Upon disposal of material, flush with a large volume of water to prevent azide accumulation. Please consult the Safety Data Sheet for more information.

This product is for research use only and is not intended for use in humans or for *in vitro* diagnostic use.

ORDERING INFORMATION

Cat. #	Description	Size
24609	ViaCheck™ Concentration Control (0.5 x 10^6)	20ml
BLIVC50NSS	ViaCheck™ Concentration Control (0.5 x 10^6) SingleShots™	25 or 75 vials
24627	ViaCheck™ Concentration Control (1 x 10^6)	20ml
BLI60NS	ViaCheck™ Concentration Control (1 x 10^6) SingleShots™	25 or 75 vials
24628	ViaCheck™ Concentration Control (4 x 10^6)	20ml
BLI70NS	ViaCheck™ Concentration Control (4 x 10^6) SingleShots™	25 or 75 vials
24629	ViaCheck™ Concentration Control (8 x 10^6)	20ml
BLI80NS	ViaCheck™ Concentration Control (8 x 10^6) SingleShots™	25 or 75 vials

RELATED PRODUCTS

Cat. #	Description	Size
24622	ViaCheck™ 0% Viability Control	20ml
BLI10BS	ViaCheck™ 0% Viability Control SingleShots™	25 or 75 vials
25997	ViaCheck™ 25% Viability Control	20ml
BLI25BS	ViaCheck™ 25% Viability Control SingleShots™	25 or 75 vials
24623	ViaCheck™ 50% Viability Control	20ml
BLI20BS	ViaCheck™ 50% Viability Control SingleShots™	25 or 75 vials
24624	ViaCheck™ 75% Viability Control	20ml
BLI30BS	ViaCheck™ 75% Viability Control SingleShots™	25 or 75 vials
24625	ViaCheck™ 90% Viability Control	20ml
BLI40BS	ViaCheck™ 90% Viability Control SingleShots™	25 or 75 vials
24626	ViaCheck™ 100% Viability Control	20ml
BLI50BS	ViaCheck™ 100% Viability Control SingleShots™	25 or 75 vials

TO ORDER

In The U.S. Call: 1(800) 523-2575 • (215) 343-6484
In The U.S. Fax: 1(800) 343-3291 • (215) 343-0214

In Germany Call: +(49) 06201-845200
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