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Document Contact	Malak Saad: Medical Technologist Lead
Area	Laboratory-Hematology
Applicability	Taylor + Trenton + Wayne

Cell Chex Manual Body Fluid Quality Control

Document Type: Procedure

I. PURPOSE AND OBJECTIVE:

Total cell counts can provide valuable information regarding infection, hemorrhage, malignancy and inflammatory conditions. Whenever a cerebrospinal fluid (CSF) or body fluid cell count is performed manually, a manual quality control (QC) must be performed once per shift per technologist.

II. PRINCIPLE:

Microscopic evaluation of cerebrospinal fluid and other body fluids is an important part of the routine analysis of body fluid samples. Total cell counts are performed with a hemocytometer using diluted or undiluted body fluid. Cell-Chex body fluid control contains stabilized human red blood cells and white blood cells in a preservative medium and is used to ensure hemacytometer manual body fluid counts are being performed correctly.

III. SPECIMEN COLLECTION AND HANDLING:

Refer to Sysmex XN-2000 procedure.

IV. REAGENTS:

A. Cell-Chex Body Fluid Control Level I
B. Cell-Chex Body Fluid Control Level II
C. 70% Isopropyl Alcohol (if applicable)

V. EQUIPMENT:

A. Hemacytometer (C-Chip or resuable)

B. Microscope

C. Pipette with pipette tips

D. Petri dish

VI. MAINTENANCE:

A. Clean and disinfect hemacytometer and coverslip with gauze and 70% isopropyl alcohol prior to use, if applicable.

B. Daily cleanliness of all optical components and the proper mechanical operation of the microscope are paramount to optimal performance and apply to the use of all microscopes within the laboratory. Preventative Maintenance is performed by Microscope Solutions annually and includes full disassembly, cleaning, oiling, reassembly and readjustment of the microscope. Refer to the microscope operator's manual for the manufacturer's recommended operating procedure, maintenance and troubleshooting table.

VII. QUALITY CONTROL:

A. Cell-Chex body fluid control is stable through the expiration date when stored at 2°C to 10°C.

B. Once open, Cell-Chex is stable for 30 days when stored at 2°C to 10° C.

VIII. PROCEDURE:

A. Remove the controls from the refrigerator. It is not necessary to warm the controls to room temperature before using.

B. To mix:

1. Mix manually. Do not mix mechanically.
2. Hold vial horizontally between the palms of the hands and roll the vial back and forth for 20 seconds. Mix bottle rapidly but gently to verify the cells are suspended.
3. Gently invert the vials 8 to 10 times immediately before sampling.

C. Samples must be removed using a clean capillary tube or pipette tip. The vial must be closed immediately after sampling is complete.

D. Load 10 micro-liters (µl) on both sides of the hemocytometer and allow the charged cells to settle in a moist petri dish for no longer than five minutes.

E. Count the cells in all 9 squares on both sides of the hemocytometer using bright phase microscopy. Refer to Body Fluid Cell Counts Hemocytometer procedure.

F. The total cell count is equal to the average of both cell counts on each side. The two sides should match within 20%. The QC results should fall within the expected product insert range.

G. Document QC results, lot number and expiration date on the Manual Body Fluid Patient and QC

log (see attachment A).

IX. FREQUENCY OF CONTROLS:

A. Body fluid cell count controls must be performed on each shift that a patient manual fluid count is required.

B. Manual body fluid QC should fall within the acceptable range of the product insert, before patient's testing can be performed.

C. If a new lot number of QC is received, validate the new lot by performing a count for both levels of controls three times before putting the lot into use (See attachment B).

D. Only one fluid control need be counted on each shift per tech when patient manual fluid count is required. Alternate level one and level two after each time QC is performed.

E. At applicable sites, department designee will submit the QC data points online to Streck by the 5th of the month, if a minimum of ten data points are available.

X. REFERENCES:

A. Krieg, A.F., Clinical Diagnostic and Management by Laboratory Methods, 1979, p. 635-679.

B. Kjeldsberg, C.R., and Knight, J.A., Body Fluids, Laboratory Examination of Amniotic Cerebrospinal, Seminal, Serous and Synovial Fluids: A Textbook Atlas, ASCP Press, Chicago, IL 1986.

C. Streck, 7002 S. 109 Street, Omaha, NE 68128.

Attachments

Attachment A-Manual Body Fluid Patient and QC Log

Attachment B-Cell Chex New QC Lot Number Validation Log

Approval Signatures

Step Description	Approver	Date
Medical Director	Muhammad Arshad: Chief, Pathology	9/5/2024
Policy and Forms Steering Committee Approval (if needed)	Malak Saad: Medical Technologist Lead	8/29/2024

Christopher Ferguson: Dir, Lab Services	8/27/2024
Katherine Persinger: Mgr, Laboratory	8/27/2024
Ashley Beesley: Mgr, Laboratory	8/26/2024
Kristen DiCicco: Mgr, Laboratory	8/14/2024
Malak Saad: Medical Technologist Lead	8/14/2024

Applicability

Taylor, Trenton, Wayne