University of California, Davis Medical Center
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DxH 600 /800 Automated Body Fluid Counts Technical Procedure #1525.t

PURPOSE

The Beckman Coulter DxH series has an automated body fluid count function. The body fluid is sampled in Single Tube Presentation as a Body Fluid. This function bypasses the flow cell and reports a Total Nucleated Count (TNC) and a Red Cell Count (RBC). The TNC is equivalent to the White Blood Cell Count. Cellular CSF, and BF fluids may be run on the DxH. The lower reportable limits are TNC=20/mm^3 and RBC=1000/mm^3. This function will not completely replace the hemacytometer counts.

SPECIMEN

Cerebrospinal fluid, serous fluid (Pleural, Pericardial, Peritoneal), and BALs are all acceptable specimens. Specimen must have a minimum volume of 200 ul.

Unacceptable specimens are clotted fluids.

Note: Automated Body fluids are only validated for TNC and RBC counts. Body Fluid Hematocrits may not be run on the DxH.

REAGENTS, EQUIPMENT AND SUPPLIES

Automated fluid counts are analyzed on validated, calibrated, controlled DxH 800 series automated cell counter analyzers. See details in SOP *'DxH 600 800 and Workcell Operation 1521.t'* for operating details.

QUALITY CONTROL

Body Fluid Quality Control material is from Beckman Coulter. Quality control is performed on one DxH 800 every eight hours.

- BF controls are run using *Single Tube Presentation*. Run Level 1, Level 2, and Level 3 in order. Diluent does not need to be run before QC samples.

PROCEDURE

- Diluent must always be run before running patient samples. Diluent counts must be: BF TNC $\leq$20 and BF RBC $\leq$1000
    - Dispense diluent select *Single Tube Presentation* icon (hand holding tube). Select Dispense diluent and follow prompts. Approximately 1 ml of diluent will be dispensed.
    - Remove from cradle and run diluent using Single Tube Presentation. Identify by typing *dil.* The analyzer will not recognize the sample. Choose sample type CSF, choose test type BFC.
    - Place empty, capped tube into cradle. Remove when finished.
- BF samples are run using *Single Tube Presentation.*

- Scan barcode. The analyzer will recognize the sample number. Choose sample type and test type BFC.
- Place well mixed, capped tube into cradle. Remove when finished.

- Any flags or error codes invalidate results. See SOP *DxH 600 800 result Interpretation and Rechecks 1522.t*

- Dilutions may be done in duplicate with saline and run on the DxH. The dilution results must agree within 20%

REPORTABLE RANGE

- TNC = 20 - 89,000 / mm^3

- RBC = 1,000 - 6,200,000 / mm^3

REPORTING RESULTS

- Report TNC as WBC count
- Report RBC as RBC count

REFERENCE RANGE

	RBC count /mm^3	WBC count /mm^3
CSF		
Adult	0	≤5
Children < 1 year	0	≤30
Children 1-4 years	0	≤20
BF	<1000	<100

REFERENCES

- Merritt, Patti, MT(ASCT)SH; Beckman Coulter Hematology Webcast 2010; "Body Fluids..Out of the Dark Ages"

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- McBride, L. J., Textbook of Urinalysis and Body Fluids, A Clinical Approach, pp. 195 – 265; Lippincott, Philadelphia, 1998.
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PROCEDURE HISTORY

Date	Written/Revised By	Revision	Approved Date	Approved By
June 2016	L Gandy	New	9/28/2016	L Howell MD
		Biannual Review	4/17/2018	D Dwyre MD
6/2018	L Gandy	Added BF hct and dilutions		