BD FACSCount System Quick Reference A Complete System for Measuring Absolute CD4 Counts and Percentages in HIV/AIDS Patients

64369

For Use with BD FACSCount[™] CD4 Reagents, BD FACSCount Controls, and BD FACSCount CD4 Software Use this after you are familiar with the procedures in the appropriate BD FACSCount system user's guide and package insert.

1 Starting Up

- 1. Make sure that the software protocol disk for BD FACSCount CD4 reagents is in the drive.
- 2. Turn on the power to the instrument.
- 3. Fill the system fluid reservoir with BD FACSFlow[™] sheath fluid.
- Empty the waste reservoir.
 CAUTION: Do not dispose of waste reservoir contents until at least 30 minutes after the completion of the last run. This helps inactivate biohazardous materials before disposal.
- 5. Add 200 mL of BD[™] FACSClean solution or undiluted bleach to the empty reservoir.

1. Invert the patient specimen BD Vacutainer EDTA tube 5 to 10 times

labeled with the corresponding identification number.

3. Cap the tube and vortex upright for 6 seconds.

NOTE: Incubation should not exceed 40 minutes.

2. Recap the tubes and vortex upright for 6 seconds.

tube. Change tips between tubes.

specimen. Change tips between tubes.

2. Reverse pipette 50 μ L of specimen whole blood into the reagent tube

4. Repeat steps 1 through 3 to prepare a sample tube for each patient

1. Uncap the tubes and reverse pipette 50 μ L of fixative solution into each

NOTE: Stained controls can be stored up to 24 hours before adding

control beads. Run samples on the BD FACSCount instrument within

Incubate controls and samples in the dark for 30 minutes at room

6. Check for air in the flow cell and prime the system, if necessary

Adding Blood to Samples

to adequately mix.

Incubating Tubes

Adding Fixative

48 hours of preparation.

Adding Control Beads

temperature.

2 Preparing Controls and Samples

Collect blood in BD Vacutainer® EDTA tubes or equivalent. Prepare controls and patient samples by adding blood, then fixative solution to the reagent tubes. Before running controls, add control beads.

Preparing Tubes

1. For controls, label the tabs of three reagent tubes: Low, Medium, and High.



2. For each patient specimen, label the tab of a reagent tube with the patient ID or accession number.



- 3. Vortex each reagent tube upside down for 6 seconds, then upright for 6 seconds.
- 4. Open the reagent tubes with the coring station.



Adding Blood to Controls

- 1. Invert the normal whole blood BD Vacutainer EDTA tube 5 to 10 times to adequately mix.
- 2. Reverse pipette 50 μL of normal whole blood into each reagent tube labeled Low, Medium, and High. Change tips between tubes.



3. Cap the tubes and vortex upright for 6 seconds.

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 Place the Zero/Low and Medium/High control beads in the control area of the workstation. See the user's guide if you are opening control beads for the first time.



- 2. Uncap the tubes labeled Zero, Low, Medium, and High.
- 3. Vortex the Zero/Low control bead pair for 6 seconds and reverse pipette 50 µL of Low control beads into the tube labeled Low. Change tips between tubes.
- 4. Vortex the Medium/High control bead pair for 6 seconds and reverse pipette 50 µL of the Medium control beads into the tube labeled Medium. Change tips between tubes.
- 5. Reverse pipette 50 μ L of the High control beads into the tube labeled High. 6. Recap the tubes.
- NOTE: Run controls on the BD FACSCount instrument within 2 hours of adding the control beads.

For more information, visit **bdbiosciences.com** or contact your local BD Biosciences representative.



3 Running Controls

1. Press [Control] on the BD FACSCount screen.



3. Enter the bead counts for the Low, Medium, and High controls and press [Confirm].

4. Enter the eight-digit reagent lot code.



- Enter the CD4 reference bead count for the reagent lot and press [Confirm].
 Enter the normal control ID and press [Enter].
- Vortex the CD4-Low reagent tube upright for 6 seconds. Set the vortex speed to a setting that causes the liquid to rise to the top of the reagent tube.
- 8. Uncap the CD4-Low tube, place it in the sample holder, and press [Run].
 9. Remove the CD4-Low tube and recap it.
- 10.Follow steps 7 through 9 for the both the CD4-Medium and CD4-High reagent tubes.

4. Vortex the reagent tube upright for 6 seconds. Set the vortex speed to

5. Uncap the CD4 tube, place it in the sample holder, and press [Run].

NOTICE: Perform instrument daily cleaning and shutdown after

7. Repeat steps 3 through 6 for each remaining sample.

a setting that causes the liquid to rise to the top of the reagent tube.

4 Running Samples

- 1. Press [Sample] on the BD FACSCount screen.
- 2. Enter or verify the reagent lot code and reference bead count and press [Confirm].
- 3. Enter the patient ID or accession number on the Sample screen.

5 Daily Cleaning

Instrument

- 1. Press [Utility] on the BD FACSCount screen.
- 2. Press [Clean], and then press [Daily].
- 3. Place a tube of BD FACSClean solution or a 1:3 dilution of bleach in
- the sample holder and press [Run].
 Place a tube of BD[™] FACSRinse solution or distilled water in the sample holder and press [Run].

Workstation

Wipe down the workstation with a soft cloth dipped in a 1:10 dilution of bleach.

Coring Station

6. Remove the CD4 tube and recap it.

running controls or samples.

 Invert the coring station over a sink and allow warm water to run into the metal openings surrounding the cutters.
 Dry the coring station with a clean, dry cloth.

Electronic Pipette

Wipe down the pipette with a soft cloth dipped in a mild detergent solution.

Shutdown

- NOTICE: Perform daily cleaning before you turn the instrument off at the end of each day.
- 1. Press [Utility] on the BD FACSCount screen.
- 2. Press [Shutdown].

and rinsing solutions.

4. Empty the waste tank and reconnect.

6. Press [Clean], and then press [Long].

5. Press [Utility] on the BD FACSCount screen.

- 3. Place a tube of BD FACSRinse solution or distilled water in the sample holder and press [Run].
- 4. Leave the instrument power on to continue running samples later in the day, or turn off the instrument power to complete the shutdown.

CAUTION: Bypass the saline filter to prevent damage from cleaning

6 Maintenance

Long Cleaning

Perform the following steps to clean the fluidics once a month or every 500 samples, whichever occurs first. Additionally, perform the long clean procedure when instructed to in Troubleshooting, or when recommended by your BD service representative.

- 1. Remove the sheath tank and discard the solution.
- 2. Rinse the tank, and fill it with 2 liters of BD FACSClean solution or a 1:10 bleach solution.
- 3. Place the sheath tank back on the instrument, bypassing the sheath filter.





- Disconnect the sheath filter output tubing connector and set it aside.
- Connect the sheath tank output tubing connector to where the sheath filter output tubing connector was connected.

BD Biosciences Service Representative

Contact Information

 Place a tube of BD FACSClean solution or a 1:3 dilution of bleach in the sample holder and press [Confirm], and then [Run].
 Replace the cleaning solution in the sheath tank with BD FACSRinse

7. Press [Confirm] that the sheath filter is bypassed.

- solution or distilled water, and press [Confirm]. 10.Place a tube of BD FACSRinse solution or distilled water in the sample holder and press [Run].
- 11.Empty the sheath tank and fill it with BD FACSFlow sheath fluid.
- 12. Connect the sheath tank and reconnect the saline filter connector to its original location.
- 13.Perform the shutdown procedure (see *Daily Cleaning* above).
- orm the shutdown procedure

12.Connect the its original 13.Perform the