

SOP-E027

(Shortlist) Operation Procedure For Coulter Counter Model Z₂

Objective: To determine the concentration of blood cells in an aqueous suspension.

Procedure:

1. Turn on the power switch, located on top, left, front of unit.
2. Lower the stage and remove the coulter clenz vial.
3. Place a counting vial containing millipore water onto the stage and rinse 5-10 times by moving the stage gently up and down.
4. Now replace the vial with a counting vial containing PBS from the dispenser.
5. On the data terminal press <**Functions**>
6. Move the cursor keys to <**Prime Aperture**>
7. Press <**Start**>, then press <**Start**> again.
8. The system will now take several minutes to prime.
9. When it is finished, the data terminal message screen will read <**aperture primed**>
10. Put a coulter counting vial containing fresh PBS on the stage and run a count for the **background**. It should be < **250**.
10. For your sample, you must enter the size you wish to count.
11. On the data terminal press <**Set-Up**> until screen **S1: SETUP –ENTER SIZE DATA** is displayed.
12. Check that the aperture tube displayed is the one being used.
13. Select <**Units**> should be set on **µm**.
14. Move to **Set Upper Size Tu**, enter the numerical value of the size below which you want to count
15. Move to **Set Lower Size Tl**, enter the numerical value above which you would like to count.
16. **The ratio of upper to lower size should not exceed 3:1.**
17. Count mode should be set to <**between**>, all particles equal to or exceeding the lower size setting, but do not exceed the upper size setting are counted
18. Press <**Start**> to initiate an analysis
19. If count was selected, screen A4 displays the count result.
20. Record the count.
21. With the 100µm aperture installed, a count of 1950, would be read as $1.950 \times 10^6/\text{ml}$.
22. With the 50µm aperture installed, you need to multiply the count by 5, so $1950 \times 5 = 9750 = 9.75 \times 10^6/\text{ml}$
22. If you wish to repeat the count, just press <**Start**> again
23. You should take three counts and average them.

Note: The 100µm aperture counts the number of cells in 500µl
The 50µm aperture counts the number of cells in 100µl.

