Moxi Z - Total White Blood Cell (WBC) Count

Overview

This approach is a nucleated cell counting method. The technique works by diluting the whole blood, lysing all the cells (including the WBC's), and counting the remaining nuclei. It is designed to provide a rapid means for counting the total WBC counts in a sample. *Note: There is an inherent error in the counts due to contributions of nucleated red blood cells (RBC'S). Ordinarily, this contribution is not significant. However pathological conditions could contribute to higher-than normal nucleated RBC's in blood.*

Reagents and Cassettes

- Zap-oglobin II Lytic Reagent ((Beckman Coulter, Part # 7546138))
- PBS or the equivalent (with Type S Lot 1701 and greater cassettes, we no longer recommend the use of Orflo Diluent)
- Anti-coagulant (e.g. Heparin, EDTA, sodium citrate) coated collection tube
- Moxi Flow Type S cassettes (Orflo Prod# MXC002)

Protocol

- Collect >40µL of whole blood into an anti-coagulant coated capillary tube.
- Add exactly 40µL of whole blood to 5mL of PBS
- Add 3 drops of Zap-oglobin II Lytic Reagent
- Mix the sample several times (10x) through inversion-mixing and allow the sample to sit for a minimum of 3 minutes.
- Turn on the Moxi Z
- Load a Type S cassette
- Prior to loading the sample, mix the sample through slow inversions to ensure proper mixing.
- Load 75µL (minimum) of sample into the cassette loading well and press the small black "small particle mode" box on the lower right of the screen (see example figure to the top-right, box is indicated by the red arrow) to start.
- Upon test completion, gate around WBC nuclei population (~4.5 – 10 µm) or select the "CurveFit" button for auto-curve-fitting of the nuclei counts (see example image on the bottom right).
- The total, dilution-adjusted counts can be determined by mulplying the Moxi Z concentration by 128 (5.12 mL/.04 mL). Note: This includes ~80µL of Zap-oglobin II reagent.