

## **SANGER INSTITUTE STANDARD OPERATING PROCEDURE**

**SUBJECT: Haematology Sample Analysis**

### **INTRODUCTION:**

This document outlines the general procedures involved in the Complete Blood Count (CBC) analysis of samples with a scil Vet abc or scil Vet abc Plus+ haematology analyser.

### **ABBREVIATIONS:**

**CBC** = Complete blood count  
**DCF** = Data capture form  
**EDTA** = Ethylenediaminetetraacetic acid  
**PPE** = Personal protective equipment  
**PPL** = Project procedure licence  
**QC** = Quality control  
**SD** = Standard deviation  
**SOP** = Standard operating procedure

### **HEALTH & SAFETY:**

This procedure is covered by the following risk assessment WTSI\_2748

- Appropriate Personal Protective Equipment (PPE) is to be worn at all times when handling the samples – white lab coat and gloves.
- This process involves reagents derived from human sources. These have been tested for Anti-HCV, HbSAg and Anti-HIV1/2 using FDA approved methods, and were found to be non-reactive. Appropriate PPE should be worn and caution exercised when handling any potentially hazardous reagents.
- Lone working and out of hours working is allowed for staff deemed competent.
- This procedure involves handling and lifting Vetabc reagent packs boxes with relatively sharp edges which weigh approximately 2kg.
- Vetabc haematology analyser aspirates blood with a metal probe that emerges from the machine which brings a low risk of stabbing or puncturing.
- Workers new to the process are trained and supervised by an experienced lab member until they are deemed competent to perform the task unsupervised.

### **RESPONSIBILITIES:**

All staff performing this procedure are responsible for ensuring that this Standard Operating Procedure (SOP) and accompanying risk assessment has been read and understood. All staff should be trained and competent to perform the procedure.

### **RESOURCES:**

#### **Equipment and reagents:**

- scil Vet abc or scil Vet abc Plus+ analyser and attached barcode scanner + Vetabc packs (Henry Schein catalogue number SCSIL02)
- Rotator/ Rock and roller

- Test tube rack
- Minotrol QC solution (Henry Schein catalogue number SCSIL06)

**Staff:** One member of staff is required to perform this procedure.

### **INSTRUMENT START-UP**

1. Switch on the analyser and wait for it to start up.
2. Remove the current QC vial (Horiba ABX Minotrol) from the fridge and allow to come to room temperature (~10 minutes)
3. Check remaining cycles left in the reagent pack and change pack if necessary, followed by a prime cycle.

### **Run QC**

4. Set analyser to correct mode to run QC
5. Place the QC vial under the sample probe so that the probe is all the way inside the vial and below the level of the solution and press the white sample bar behind the probe to aspirate the sample. The results will be displayed within 2 minutes and any errors will be flagged or results can be compared to the known targets to determine if the QC has passed.
  - 5.1. If any of the values are outside of the tolerance range, check the expiry date and the date the vial was first opened. If expired or the vial has been open for two weeks then a new vial may be opened.
  - 5.2. Repeat the QC measurement, making sure to thoroughly mix the vial.
  - 5.3. Run a clean and try the QC again
6. When satisfied with the QC results, return the QC vial to the fridge.
7. Set analyser to the correct mode to run mouse samples

### **SAMPLE ANALYSIS**

8. Samples should be collected into EDTA coated tubes labelled with an individual bar code identifier, plus mouse number and tube number.
9. Take a blood tube and scan the mouse barcode into the system
10. Place the probe all the way inside the blood tube and press the sample bar. Do not move the blood tube away from the probe until it begins to ascend into the machine. The results will be displayed within 2 minutes and any errors will be flagged.
11. Transfer results to a spreadsheet.

12. Repeat steps 9-11 for remaining samples.

13. When all data are saved, upload to the database.

### **SHUT DOWN PROCEDURE**

At the end of the run, the following shut down procedures must be performed:

14. Run a 'sample' containing diluted bleach (5%).

15. Run the following cycles:

- 15.1. Backflush
- 15.2. Chambers draining
- 15.3. Automatic cleaning

16. Select the shutdown cycle and when prompted, the analyser can be switched off.

17. If needed, clean the screen and sample aspiration area with distilled water and tissue (not ethanol or Azowipes).

### **QC OF DATA DURING ACQUISITION:**

- If the results obtained read '0.00' or close to 0 for all parameters, it is likely that the pipette did not aspirate sufficient/any sample for analysis. Sample should be gently mixed and run again.
- If the problem persists, the analyser should be cleaned using the 'AUTOCLEAN' option under the 'SERVICE' menu. If this still doesn't resolve the problem, the machine should be shut down and restarted. The QC sample should be run again.
- If rebooting the analyser does not resolve the issue, the reagent pack may need to be changed. Remove the old reagent pack, taking care not to squeeze the full waste pack. Install new reagent pack according to on-screen instructions.