**Hemavet 950FS Hematology Analyzer**

We use a Hemavet Hematology Analyzer (950FS) to give us the following parameters for each sample run:

- White Blood Cell or leukocyte count (WBC) \((x \times 10^9/L)\)
- And WBC differential:
  - Neutrophils
  - Lymphocytes
  - Monocytes
  - Basophils
  - Eosinophils
- Red Blood Cell or erythrocyte count (RBC) \((x \times 10^{12}/L)\)
- Hemoglobin concentration (Hgb) \((g/L)\)
- Hematocrit (relative volume of erythrocytes) (Hct) \((L/L)\)
- Mean Corpuscular (erythrocyte) Volume (MCV) \((fL)\)
- Mean Corpuscular (erythrocyte) Hemoglobin (MCH) \((pg)\)
- Mean Corpuscular (erythrocyte) Hemoglobin Concentration (MCHC) \((g/L)\)
- Platelet or thrombocyte count (Plt) \((x \times 10^9/L)\)

A salt of EDTA (K2, K3, or Na2) is the recommended anticoagulant for use with the Hemavet.

In the mouse physiology screening laboratory we collect mouse saphenous vein blood for analysis. Hematology analysis is available on a fee-for-service basis. Individuals are encouraged to perform their own mouse blood collection (refer to the Saphenous Vein Blood Collection Protocol) and to simply provide the blood samples for any desired screening.

**Procedure:** (please refer to the Saphenous Vein Blood Collection Protocol for details on how to collect blood from the mouse).

Blood is collected for hematological analysis in 200 ul EDTA-coated capillary tubes (Drummond Microcaps, Drummond Scientific Company, Broomall, PA). The analyzer requires a volume of 20 ul of whole blood for a successful measurement. Therefore, we collect 50-60 ul of whole blood so that we may repeat the measurement if necessary. The collected blood is dispensed immediately into a 0.5 ml microtube. The tube is then capped and the contents of the tube gently mixed by flicking the side of the tube to be sure all the blood is mixed with the anticoagulant and no clots form. The blood sample is kept at room temperature for at least 5 minutes prior to measurement in order for the cells to stabilize. The sample may be analyzed up to several hours after collection. The presence of clots within the sample or the storage of the sample on ice will greatly lower platelet counts.

Individuals may prefer to collect the blood sample from the mouse’s tail that has been anesthetized with 2.5% lidocaine (Emla). Tail samples are acceptable only if the blood flows freely and “milking” or squeezing of the tail is not necessary in order to collect the sample. To collect a blood sample from the tail, the mouse is restrained in an uncapped 50 ml Falcon
tube that has had air holes drilled in the closed end. The mouse's tail is left hanging out the open end of the tube. The end of the mouse's tail is placed on a glass slide and a 1-2 mm length is cut off the tip of the tail using a sharp razor blade. The capillary tube is placed next to the drop of blood that forms at the cut and the blood is collected in the capillary tube by capillary action. It is important to note that blood collected by this method will have higher white blood cell counts than blood collected from the saphenous vein.