



MLC Pathology

MRC | Harwell

Version 4.0 – February 2020

Haematology - Guidelines for Sample Collection & Shipment

This document provides users of the haematology service with important guidelines for sample collection, processing & shipment. The most up to date version of this document is available on our website at: <https://www.har.mrc.ac.uk/resources/clinical-chemistry>

Available tests

We can perform a full blood count and differential analysis on board an Advia 2120 haematology analyser with multi-species software on only 200µL of EDTA whole blood. The full test profile available can be viewed on our website.

Collection of blood samples from mice

When collecting blood from mice ensure that you comply with Home Office Regulations and ethical practices. **Samples for haematology must not be haemolysed or clotted.** This is essential to achieve reliable and consistent results. Sample quality can be greatly affected by how blood samples are drawn and processed.

Retro-orbital punctures are usually performed under non-recovery anaesthesia, so are terminal procedures and therefore not suitable for time course studies. It is a suitable technique for rapid collection of a good quality blood sample of reasonable volume.

Tail vein punctures are not terminal procedures and therefore suitable for time course studies. Placing mice in an environment maintained at 38°C, for ±15 minutes prior to sampling can facilitate vasodilation to speed up collection and improve sample quality.

Jugular punctures are performed under non-recovery anaesthesia. The need for dissection can be time consuming, but samples obtained in this way tend to be of good quality and usually of adequate volume.

Cardiac punctures often produce samples that are haemolysed and/or clotted. These problems can be difficult to overcome, but with experience it is possible to obtain large volumes of blood relatively quickly.

Collection of blood samples for Haematology

There are various paediatric blood collection tubes (typically <1mL) that are suitable for the small samples obtained from mice.



EDTA coated tubes usually have red or purple caps and can be used to collect whole blood samples suitable for haematology.

Round-bottomed collection tubes generally allow better mixing of the sample and anticoagulant thereby reducing the likelihood of clotting and leading to better quality samples. It is important to collect the correct volume of blood into a tube so that the ratio of sample to anti-coagulant is optimal and remains consistent between samples. Contact us for more information and details of suggested products and suppliers.

When collecting more than one type of blood sample from a mouse it is important to consistently collect the various samples in the same order - EDTA blood samples for haematology should ideally be collected first.

Processing blood samples for Haematology

- It is essential to process all samples in a consistent manner.
- After collection each sample should be mixed by gently inverting the tube a few times.



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- Haematology requires whole blood (non-centrifuged samples) that should ideally be placed on a rotary mixer (not a roller mixer) for at least 30 minutes immediately following collection to prevent clotting.
- Samples ideally have to be analysed on the day of collection.
- Samples should be kept at room temperature if they will be analysed on the day of collection but stored at 2-8°C if they are to be kept overnight.
- Samples should never be frozen.

Haemolysis & Clotting

Samples should not be haemolysed and should be free from clots. Reliable and consistent data can only be collected from non-haemolysed and non-clotted samples.

Important General Information

Sample containers

Please send whole blood samples for haematology in the original EDTA-coated collection tubes only.

Labelling

We require that users follow one of two labelling conventions - Failure to comply will delay analysis and incur additional costs:

Option 1: Barcode Labels. Use only the barcode labels we supply for larger / high throughput projects - please enquire. Users scan or keep a written record of the barcode numbers they use for specific samples. Labels should be stuck length ways to tubes.

Option 2: Sequential Numbers. Simply label tubes as 1, 2, 3 etc with a permanent lab marker. Do not use any other codes or numbers. Users tend to keep details of their samples (age, sex, strain, study ID, date, genotype etc) and join the information up with the results we provide.

Numbers of Samples

Many parameters we measure in blood are affected by age, sex, diet, sample collection method, processing and storage. We therefore do not provide reference ranges, but suggest the inclusion of suitable control samples in your study design. We recommend collection of at least 10-15 samples per age- strain- and sex-matched cohort you wish to compare. It is often difficult to draw any conclusions from the data obtained from smaller cohorts of samples.

Sample volume

200µL of EDTA whole blood is required to perform a full blood count and differential analysis. The Advia 2120 operates on an **all or nothing** principle. All tests are performed on a single aliquot of sample drawn by the analyser, so it is not possible to obtain results for fewer / selected tests from smaller volumes of sample.

Shipment of Samples

Please do not send us samples until we have received a scanned attachment of your purchase order, signed terms and conditions and your completed request form.

Haematology samples should ideally be analysed on the day of collection or as early as possible the following day therefore same-day delivery (by 3pm at the latest) or next-day delivery will need to be arranged.

- Samples should be packed in a cool container with gel / ice packs (but not in direct contact with ice).



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- Send samples to the address at the end of this document.
- Avoid deliveries on Friday afternoons and over weekends.
- Contact us well in advance to discuss your requirements and to notify us of shipments prior to delivery by emailing us at clinchem@har.mrc.ac.uk

Note that we only analyse external samples in our laboratory on Wednesdays, Thursdays and Fridays.

Pricing

- Full blood count & differential profile charged at £5.00 per sample
- Minimum charge per order £50.00
- Reticulocyte counts available by prior arrangement at an additional £2.00 per sample for a minimum of 300 samples

Please contact us for a full quote and request form.
Our Terms & Conditions are available on our website.

Request Forms, Purchase Orders, Terms and Conditions

Please address your purchase order to:

Mary Lyon Centre
MRC Harwell
C/o RCUK Shared Services Centre Ltd
North Star House
North Star Avenue
Swindon
SN2 1FF
UK

Before samples are shipped, **please email** your completed request form, purchase order, and signed terms and conditions to clinchem@har.mrc.ac.uk **as pdf attachments.**

If you are VAT exempt, please also provide a copy of your certificate of VAT exemption along with your purchase order. Note that under HM Revenue & Customs legislation we may not be able to fulfil your request.

Payment instructions

Full details for BACS transactions will be given on our invoice.
Cheques should be made payable to MRC
Please contact finance@ssc.rcuk.ac.uk with any queries

Contact & Sample delivery address

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