

Guide for the preparation and submission of Citrate Plasma samples for Coagulation testing

To obtain accurate results, proper collection and handling of samples is crucial.

When supplies of citrate tubes are requested, 2 types of sample tubes will be sent to the practice:

- **Citrate/Coagulation sample tubes (green top):** to be used for whole blood, they contain liquid sodium citrate as the anticoagulant. Store upright, at room temperature.
- **Plain tubes pre-labelled as “CITRATE PLASMA”:** to be used for the separated citrated plasma and contain **NO** anticoagulant.

Please check the label of the sample tubes you have in stock as there are other green-topped tubes, issued from other sources, containing Li-Heparin that are not suitable for coagulation tests.

Protocol

1. **A correct blood-to-anticoagulant ratio is especially important.**
2. Collect a blood sample from the patient via venipuncture. At least 2 ml of blood is required to run PT and APTT (to yield a minimum of 1 ml of citrated plasma).
3. Remove the needle and fill the citrate tubes to the level indicated on each tube.
4. Gently invert the filled citrate tubes to mix the blood and the anticoagulant thoroughly.
5. Ensure the citrate tubes are not clotted. If they are, please resample.
6. Centrifuge the citrate tubes (10 minutes at 3000 rpm or using the serum/plasma guidelines provided by your centrifuge manufacturer).
7. Use a pipette to transfer the plasma from one citrate tube into one plain tube labelled “CITRATE PLASMA”. If more than one citrate tube has been used (we advise 2 tubes for a coagulation screen), place the plasma from each citrate tube into a separate plain tube and label x1 and x2 as appropriate.
8. **To ensure the best results, please immediately freeze the citrate plasma tubes and submit them frozen, packed with ice packs to prevent thawing, by overnight delivery to the laboratory.** If sampling at a time when tubes will not reach the lab within 24 hours (e.g., weekends) it is best to store the freshly separated citrated plasma frozen and submit it to the laboratory at a later date.
9. Submit both, the **frozen citrate plasma and the original citrate tubes** with the request form to the reference laboratory. The original tubes should not be frozen.
10. If you are submitting a sample for the Basic Coagulation Screen (COAG), please remember to include an EDTA sample for the platelet count ensuring the EDTA sample is NOT packed directly in contact with the ice pack to prevent the EDTA blood from freezing.

Note

Both, the frozen citrate plasma and the original citrate tubes are assessed for the presence of clots on arrival at the lab. Samples that are clotted or haemolysed will not be analysed because they will fail to provide accurate results.

