

Information for the preanalytical handling of Coagulation Tubes

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1 Recommended order-of-draw

The following order-of-draw is recommended when drawing multiple specimens for clinical laboratory testing during a single venipuncture. The order of draw is conform to the NCCLS standard H3-A5 -Procedures for the Collection of Diagnostic Blood Specimens by Venipuncture; Approved Standard-Fifth Edition.

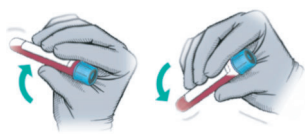
- 1 Blood culture
- 2 Coagulation***
- 3 Serum with and without gel
- 4 Heparin with and without gel
- 5 EDTA
- 6 Glucose
- 7 Others

*When drawn first then only suitable for routine tests (i.e. PT and aPTT)

NOTE: In cases where blood culture tubes are not required, GBO recommends no-additive tubes.

NOTE: Always follow your facility's protocol for order of draw.

2 Tube mixing



The recommended number of tube inversions is conform with the NCCLS standard H3-A5 - Procedures for the Collection of Diagnostic Blood Specimens by Venipuncture; Approved Standard-Fifth Edition.

Directly after blood collection thorough mixing of the venous blood with the citrate solution must be achieved by inverting the tube **4 times** without shaking.

Turn the filled tube upside-down and return it to upright position. This is one complete inversion. Inadequate or delayed mixing may result in clotting and/or incorrect test results.

3 Centrifugation

Citrated plasma is obtained by the centrifugation of citrated whole blood. The centrifugation should be performed at the following rcf:

Thrombocyte rich citrate plasma (platelet rich plasma, PRP)

Centrifugation of citrate blood for **5 minutes at 150g**. This examination material is for thrombocyte function samples.

Thrombocyte poor citrate plasma (platelet poor plasma, PPP)

Centrifugation of citrate blood for **10 minutes at 1500-2000g**. This generally referred to as "Plasma" examination material is used for the predominant number of plasmatic coagulation tests.

Thrombocyte free citrate plasma (platelet free plasma, PFP).

Centrifugation of citrate blood for **20 minutes at 2500-3000g**. This examination material is the same as PPP, except there are no thrombocytes present; it can be used when freezing is foreseen.



It is recommended to use a 90° swing-out rotor centrifuge, so that the sediment surface is formed at right angles to the tube wall.

Ensure correct placement of the tube in the centrifuge. Incorrect placement can result in separation of the safety cap from the tube.

The running of the centrifuge to obtain PRP should be performed in centrifuges that are allowed to come to a halt without braking.

Please note that incorrectly prepared centrifuges deliver poor quality samples. A normal use laboratory centrifuge (with a radius of approximately 180mm) corresponds to: 150g approx. 900 revolutions per minute, 1500-2000g approx. 3000 revolutions per minute and 2500-3000g approx. 4000 revolutions per minute.

Wear gloves during venipuncture and when handling blood collection tubes to minimize exposure hazard.

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