



Blood Collection and Serum Processing
Recommendations

Items Required

- » BD Vacutainer[®] needle 21G (Cat. no.: 360213) or 22 G (Cat. no.: 360211)
- » BD Vacutainer[®] one-use Holders (Cat. no.: 364815)
- » BD Vacutainer[®] Serum tube 3.5 mL (Cat. no.: 366703)
- » BD Vacutainer[®] Serum tube 6 mL (Cat. no.: 367815)
- » Greiner Cryogenic (Red Cap) vial 2.0 mL (Cat. no.: 126279)

Blood Collection Procedure

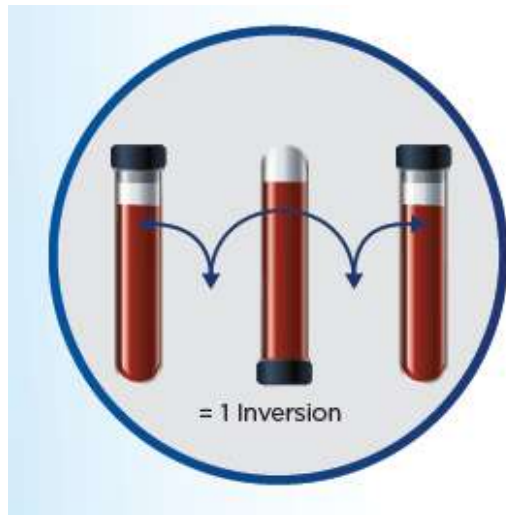
- » Using aseptic technique, obtain venous blood by using BD Vacutainer® needle 21G or 22G
- » Note: Do not apply the tourniquet for longer than 1 min as this may lead to hemolysis. Needles finer than 22G are not recommended as it may lead to haemolysis as well.
- » Draw whole blood into BD Vacutainer® Serum tube 3.5 mL (Cat. no.: 366703). This 1st Serum tube is to be discarded and only need to be filled for around 1 ml of blood.



Note that this 1st tube is meant to be discarded as it may be exposed to hemolysis

Blood Collection Procedure

- » Insert the BD Vacutainer® Serum tube 6 mL (Cat. no.: 367815). Be sure to draw blood till the fill line
- » Gently invert the tubes for 8 to 10 times. Do not shake the tubes.
- » Record the time of blood draw – Highly recommended
- » Allow serum tube to clot for minimum 30 minutes but not more than 60 minutes before proceeding to serum processing procedure.
- » Note: Clotting time less than 30 minutes may lead to haemolysis while more than 60 minutes may cause a high background miRNA expression



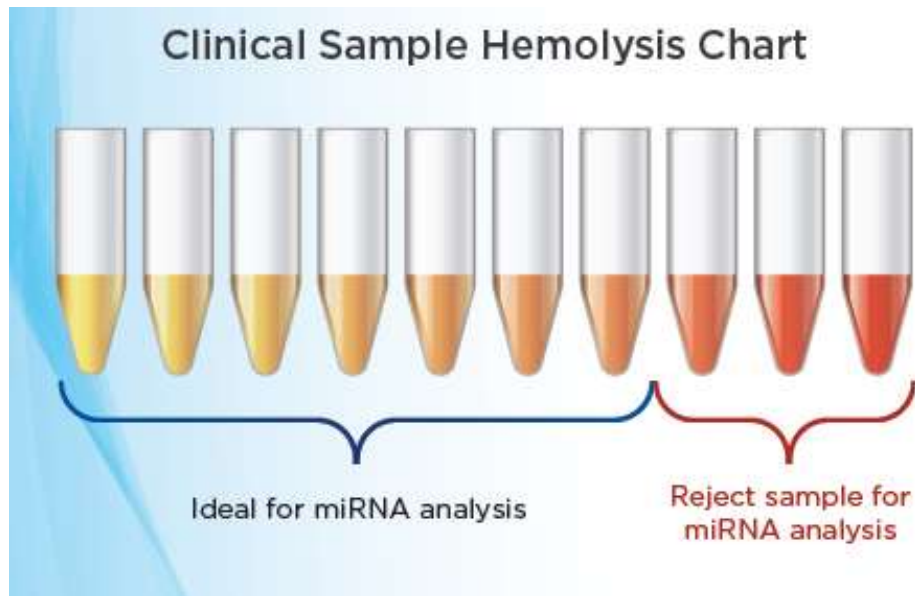
Serum Processing Procedure

- » After allowing the serum tube to clot for 30 mins, centrifuge serum tube for 15 min at 1500 RCF under room temperature. Record the time after centrifugation
- » (See figure below) Blood will be separated into 2 layers (serum and clot). Immediately and carefully aspirate 1.0 mL of the supernatant by using a 1 mL pipette and aliquot into Greiner Cryogenic (Red Cap) vial 2.0 mL (Cat. no.: 126279)
- » Make sure aspirate from the TOP of the supernatant and leave at least 0.5 cm layer above the clot.



Serum Processing Procedure

- » All samples should be assessed for haemolysis by laboratory personnel with normal colour vision. Refer to the haemolysis chart.
- » Store cryovials at $-80\text{ }^{\circ}\text{C}$ (or $-20\text{ }^{\circ}\text{C}$). Ensure that the cryovials are adequately labelled with the relevant information



Circulating cell free miRNA are susceptible to contamination by blood cell miRNAs in the event of haemolysis.

Colometric assessment can provide an indication of the extend of haemolysis.

Re-collection of blood is recommended if the sample is haemolysed

Storage and shipment of Samples

- » Store the samples at -80 °C freezer (-20 °C freezer if -80 °C freezer is not available).
- » DO NOT thaw samples during shipment, samples are to be shipped in frozen condition
- » Repeated freeze-thaw must be avoided.
- » Place the samples into the Biohazard ziplock bag and seal it. Place the bag back into the box.
- » Ship the box out under dry ice condition
- » 10kg of dry ice is good for 72-96 hours of shipping period in 20kg box