

Whole Blood, Plasma, and Serum Processing

Plasma

- **Draw** a sufficient amount of blood with the required anticoagulant to yield the plasma volume required by the test.
- **Mix.** Immediately after collection, gently mix the blood with the tube additive by inverting 8-10 times. Avoid hemolysis of the specimen during collection and mixing.
- **Place** the specimen in a rack at room temperature and centrifuge within 2 hours of collection. Do not refrigerate the sample until the plasma is separated from the cells.

Platelet-Poor Plasma (Double-spun plasma)

- Draw a Blue-top tube in the proper tube order as described on page 8. Blue top tubes must be filled to the top in order to achieve the proper blood to anticoagulant ratio. Mix well by inverting 8-10 times.
- Centrifuge promptly for 15 minutes. Using a plastic pipette, transfer the plasma from the blue top(s) to one or more plastic aliquot tubes, taking care not to disturb the platelet layer that lies on top of the red blood cell layer. Leave a small amount of plasma in the collection tube to be sure you do not pipette out any platelets with the plasma sample.
- Cap and centrifuge the transferred plasma sample for another 15 minutes. While the plasma is spinning again, prepare another labeled plastic aliquot tube for the final platelet-poor plasma sample. Indicate “platelet-poor” or “double-spun” plasma on the label.
- When the second spin is complete, transfer the top 90% of the plasma from the first aliquot tube into the second aliquot tube, taking care not to disturb any platelets that remain in the bottom of the first tube. Discard this first tube, and promptly freeze the platelet-poor plasma that you have prepared.

Serum

- **Draw** a sufficient amount of blood to yield the serum volume required by the test.
- **Mix.** Immediately after collection, mix SST tubes by inverting 8-10 times. This is a very important step! In the past, the glass sides of the collection tubes activated clotting. The switch to plastic tubes due to safety concerns contains a tube additive to activate clotting. For clot formation to occur, tubes must be mixed well. Avoid hemolysis of the specimen during collection and mixing.
- **Clot.** Allow blood to clot by placing in a rack at room temperature for at least 30 minutes. Centrifuging specimens before coagulation is complete causes fibrin clots to form in the serum.
- **Centrifuge** within 2 hours of collection. Do not refrigerate the sample until the serum is separated from the cells.

Whole Blood

- **Draw** a sufficient amount of blood with the required anticoagulant tube. To achieve an optimum ratio of blood to anticoagulant, the volume of blood should fill the tube to the line indicated on the vacutainer label.
- **Mix.** Immediately after collection, before clotting can occur, gently mix the blood collection tube by inverting 8-10 times.
- **Store** the sample according to the specific test requirements listed in the Test Menu in Chapter 4.