Specimen Collection and Processing Guidelines for Serum

If protocol-specific collection instructions for peripheral blood and processing instructions for serum are not provided in the protocol or through a linked resource (usually in Section 15 in SWOG-led protocols), then follow the instructions outlined below.

Serum is processed from blood collected without anticoagulant (e.g., plain red top tube or serum separator tube with gel). After blood has clotted, serum is processed by centrifuging and removing the yellowish-clear layer (serum). Note: after processing, serum looks very similar to plasma. If a protocol includes both serum and plasma specimens, it's *imperative* that each tube is labeled with the specimen type (e.g., serum or plasma)

Collecting Peripheral Blood

1. Use the collection tube type specified in the protocol. Note: for serum processing, it's essential to use collection tubes with no anticoagulant to collect whole blood for serum processing.
   - One or more tubes can be used to collect the required volume (e.g., if the protocol indicates to collect 10 mL of blood, then one 10-mL tube or two 5-mL tubes can be used to collect the specified volume).
2. Before collection, label all tubes according to the protocol. If not specified in the protocol, then follow the specimen labeling requirements indicated in the General Specimen Submission Instructions.
3. Use aseptic techniques and draw blood from the participant.
4. Follow the instructions below for serum collection:
   - When a red/black marble top (SST) vacutainer tube is used it must be gently inverted 5-10 times immediately after collection to activate the gel.

Serum Processing

1. Allow blood to clot for at least 30-60 minutes at room temperature.
2. Centrifuge vacutainer tube(s) at 1200 x g for 10 minutes at room temperature.
3. Pre-label cryovials according the specimen labeling requirements.
   For best results: Label specimens prior to freezing. Use laboratory marking pens or a cryogenic marker to label frozen biofluids and use labels that are designed to adhere to frozen surfaces.
4. Using a clean pipette, remove serum (yellow-clear liquid above clot). No debris should be present in the plasma.
5. Dispense 1 mL aliquots of serum into the pre-labeled 2 mL cryovials and cap the tubes securely. If not specified in the protocol, use as many cryovials as needed to evenly dispense serum into 1 mL aliquots. The number of vials needed will vary based on the volume of serum obtained.
6. Immediately freeze vials in an upright position in a -70°C to -80°C freezer until ready to ship.