**For All Specimens:**

I. **Specimen Labels**

A. All specimens should be labeled at the time of collection with at least two patient identifiers.
   1. The patient’s name (full last name, then full first name or initial) or a unique ID code is always required.
B. The second patient identifier may be one of the following:
   1. Date of birth (month/date/year)
   2. Other unique patient identifier that is also on the test requisition, e.g. office ID code or file number
   3. Arbor Diagnostics, Inc. requisition number or specimen barcode label
   4. Other barcode labels can be used if barcode matches the unique identifiers on the printed requisition (the barcode does not need to be human readable)
C. If glass slides are submitted, use a pencil for labeling the frosted end, with the patient’s last name, first initial and DOB.
D. When submitting a specimen in a container other than the tube used to draw the sample (e.g., transfer vials), also indicate specimen type on the label (e.g., serum, plasma, urine, etc.).
E. When submitting specimens for microbiological testing (e.g., cultures, bacterial antigen, microscopic examination), the nature and anatomic source of the sample and the specific organism(s) to be detected, if any, should be specified.

II. **Test Requisition**

A. Specimens must be accompanied by a paper requisition, prepared either by hand or printed from an electronic ordering system. The requisition, at a minimum should contain the following information:
   1. Adequate patient identification information (e.g., name, registration number and location, or a unique confidential specimen code if an alternative audit trail exists)
   2. Patient sex
   3. Patient date of birth or age
   4. Name and address (if different than the receiving laboratory) of the physician, legally authorized person ordering the test, or name and address of the laboratory referring the specimen
   5. Tests requested
   6. Last menstrual period (for gynecologic specimens)
   7. Date of specimen collection, and if appropriate, time of collection
   8. Source of specimen, when appropriate
   9. Clinical information, when appropriate
B. Complete the “Patient Information” and “Insurance Information” sections on the requisition.
C. Select the tests to be performed. Legibly print patient information and indicate with a check mark which party will be responsible for payment in the “Bill To” section of the requisition. Enter the ICD diagnosis code that reflects the patient’s symptoms, condition, or diagnosis and provide medical justification for the tests ordered. Complete billing information.

*Improperly labeled specimens will be rejected.*
III. Packaging
   A. The following are the minimum specimen packaging guidelines that should be followed when submitting specimens.
      1. Ensure that all specimen container caps and lids are properly tightened to prevent leakage.
      2. Properly complete the requisition.
      3. Collect the specimen(s) and transfer to a proper transport container, if needed. Double check the specimen container to ensure that the device is not beyond its stated expiration date.
      4. If using a manual test requisition, remove a self-stick label from the bottom of the pre-printed paper test requisition and affix this label to the specimen transport container. Place on the container so that the label does not cover the handwritten patient name.
      5. Fold the top copy (original) of the test requisition in half widthwise (top to bottom) with the patient’s name and bar code facing out. Retain the second copy for your files.
      6. The specimen transport bag has two pouches. Place the specimen container(s) in the front pocket. Insert the requisition into the rear pocket with the bar code visible in the bottom corner of the bag.
      7. Frozen specimens should be transported in plastic screw-cap containers only. Frozen specimens must be placed in a separate specimen bag along with a separate test requisition. Frozen specimens cannot be split for other tests. If more than one test is ordered on a single frozen sample, we will call you to authorize which of the tests ordered you want performed before testing can proceed.

IV. Supplies
   A. Certain supplies necessary to draw and submit specimens for analysis by Arbor Diagnostics, Inc. are provided to customers as part of our testing services.
   B. Type and quantity of items must correlate to the number of specimens submitted to Arbor Diagnostics, Inc. for testing.
   C. Specimen collection devices supplied by Arbor Diagnostics, Inc. are to be used only for the collection of specimens for processing by Arbor Diagnostics, Inc.
Department: Molecular

I. Copan E-Swab (GBS)

A. Preparation of the Patient:
   1. Open the ESwab sample collection pouch and remove the tube and swab.
   2. Collect the sample from the patient.
   3. Unscrew and remove the cap from Eswab tube making sure not to spill the medium.
   4. Insert the swab into the tube until the red marked breaking point is at the level of the tube opening.
   5. Bend and break the swab at the red marked breaking point holding the tube away from your face.
   6. Discard the broken handle part of the swab shaft into an approved medical waste disposal container.
   7. Replace cap on the tube and secure tightly.
   8. Write patient information on the tube label or apply patient identification label.

B. Type of Collection Container/Amount:
   1. One Copan ESwab (480C) with one swab present inside transport tube.

C. Transport:
   1. ESwab should be transported directly to the laboratory, preferably within 2 hours of collection to maintain optimum organism viability.
   2. If immediate delivery or processing is delayed, then specimens should be refrigerated at 4 – 8°C or stored at room temperature (20 – 25°C) and processed within 48 hours.

D. Clinical Data:
   1. Penicillin allergic (Yes or No)
   2. Weeks pregnant

II. Aptima Multitest Swab

A. Vaginal (CT/NG/Trich) and Vaginal Panels include a combination of the following targets:
   1. Candida krusei
   2. Candida albicans
   3. Candida parapsilosis/Candida tropicalis
   4. Candida glabrata
   5. Gardnerella vaginalis
   6. Mycoplasma genitalium
   7. Mycoplasma hominis
   8. Ureaplasma urealyticum
   9. Atopobium vaginae
   10. Mobiluncus curtisi
   11. Mobiluncus mulieris
   12. Prevotella bivia
   13. Bacteroides fragilis

B. Preparation of the Patient
   1. Partially peel open the swab package. Remove the swab. Do not touch the soft tip or lay the swab down. If the soft tip is touched, the swab is laid down, or the swab is dropped, use a new Aptima Multitest Swab Specimen Collection Kit.
   2. Hold the swab, placing your thumb and forefinger in the middle of the swab shaft covering the score line. Do not hold the swab shaft below the score line.
3. Carefully insert the swab into the vagina about 2 inches (5 cm) past the introitus and gently rotate the swab for 10 to 30 seconds. Make sure the swab touches the walls of the vagina so that moisture is absorbed by the swab and then withdraw the swab without touching the skin.

4. While holding the swab in the same hand, unscrew the cap from the tube. Do not spill the contents of the tube. If the contents of the tube are spilled, use a new Aptima Multitest Swab Specimen Collection Kit.

5. Immediately place the swab into the transport tube so that the score line is at the top of the tube.

6. Carefully break the swab shaft at the score line against the side of the tube.

7. Immediately discard the top portion of the swab shaft.

8. Tightly screw the cap onto the tube.

C. Preparation of the Patient – Lesions (HSV-1 & -2)

1. Partially peel open the swab package. Remove the swab. Do not touch the soft tip or lay the swab down. If the soft tip is touched, the swab is laid down, or the swab is dropped, use a new Aptima Multitest Swab Specimen Collection kit.

2. Hold the swab, placing your thumb and forefinger in the middle of the swab shaft covering the score line. Do not hold the swab shaft below the score line.

3. If needed, expose the base of the lesion to access fluid.

4. Vigorously swab the base of the lesion to absorb fluid, being careful not to draw blood. Withdraw the swab without touching any other site outside the lesion.

5. While holding the swab in the same hand, unscrew the cap from the tube. Do not spill the contents of the tube. If the contents of the tube are spilled, use a new Aptima Multitest Swab Specimen Collection kit.

6. Immediately place the swab into the transport tube so that the score line is at the top of the tube.

7. Carefully break the swab shaft at the score line against the side of the tube.

8. Discard the top portion of the swab shaft.

9. Tightly screw the cap onto the tube.

D. Type of Collection Container/Amount:

1. One Aptima Multitest Swab with one swab present inside transport tube.

E. Transport:

1. After collection, transport and store the swab in the swab specimen transport tube at 2°C to 30°C.

III. Aptima Urine

A. Preparation of the Patient (CT/NG/Trich):

1. The patient should not have urinated for at least 1 hour prior to specimen collection.

2. Direct patient to provide a first-catch urine (approximately 20 to 30 mL of the initial urine stream) into a urine collection cup free of any preservatives. Collection of larger volumes of urine may result in rRNA target dilution that may reduce test sensitivity.

   a. Female patients should not cleanse the labial area prior to providing the specimen.

3. Remove the cap and transfer 2 mL of urine into the urine specimen transport tube using the disposable pipette provided. The correct volume of urine has been added when the fluid level is between the black fill lines on the urine specimen transport tube label.

4. Re-cap the urine specimen transport tube tightly.
B. **Type of Collection Container/Amount:**
   1. One Aptima Urine tube between black fill lines
      a. If urine is over the max fill line or under the minimum fill line, the specimen will be rejected.

C. **Transport:**
   1. After collection, transport the processed urine specimens in the Aptima urine specimen transport tube at 2°C to 30°C and store at 2°C to 30°C.
   2. Urine samples that are still in the primary collection container must be transported to the lab at 2°C to 30°C. Transfer the urine sample into the Aptima urine specimen transport tube within 24 hours of collection. Store at 2°C to 30°C.

IV. **ThinPrep (CT/NG/Trich/HR HPV/HPV GT/ All Vaginal Panels)**
   A. **Please see Cytology ThinPrep Pap Test for detailed information**
   B. **Vaginal Panels include a combination of the following targets:**
      1. *Candida krusei*
      2. *Candida albicans*
      3. *Candida parapsilosis/Candida tropicalis*
      4. *Candida glabrata*
      5. *Gardnerella vaginalis*
      6. *Mycoplasma genitalium*
      7. *Mycoplasma hominis*
      8. *Ureaplasma urealyticum*
      9. *Atopobium vaginae*
      10. *Mobiluncus curtisii*
      11. *Mobiluncus mulieris*
      12. *Prevotella bivia*
      13. *Bacteroides fragilis*
Department: Cytology

I. ThinPrep Pap Test

A. Preparation of the Patient (Broom-Like Device Protocol):
   1. To obtain an adequate sample from the cervix using the broom-like device, insert the central bristles of the broom into the endocervical canal deep enough to allow the shorter bristles to fully contact the ectocervix. Hold the stem between the thumb and forefinger. Maintain gentle pressure and rotate the broom five times in a clockwise direction.
   2. Rinse the broom as quickly as possible into the vial solution by pushing the broom into the bottom of the vial 10 times, forcing the bristles apart.
   3. Swirl the broom vigorously to further release material. Discard the broom.
   4. Tighten the vial cap so the torque line on the cap passes the torque line on the vial.

B. Preparation of the Patient (Spatula Protocol):
   1. Select contoured end of the plastic spatula and rotate 360 degrees around the entire exocervix while maintaining tight contact with exocervical surface. Remove spatula.
   2. Rinse the spatula as quickly as possible into the vial solution by swirling the spatula vigorously in the vial 10 times. Discard entire spatula.
   3. Tighten the vial cap so the torque line on the cap passes the torque line on the vial.

C. Preparation of the Patient (Endocervical Brush Protocol):
   1. Obtain an adequate sample from the endocervix using an endocervical brush device. Insert the brush into the cervix until only the bottom-most fibers remain exposed. Slowly rotate ¼ - ½ turn in one direction. Do not over-rotate.
   2. Rinse the brush as quickly as possible in the vial solution by rotating the device in the solution 10 times while pushing against the PreservCyt vial wall. Swirl the brush vigorously to further release material. Discard entire brush.
   3. Tighten the vial cap so the torque line on the cap passes the torque line on the vial.

D. Type of Collection Container/Amount:
   1. ThinPrep PAP test vial exclusively. (SurePath and non-Gyn are not acceptable)
      a. Do not pour solution out of vial ~ 20mL of PreservCyt Solution

E. Transport:
   1. Transport at 15°C to 30°C

F. Clinical Data:
   1. Source
   2. Last Menstrual Period (LMP)
   3. Pertinent Clinical History

G. Restrictions:
   1. Ideally collect Pap smear two weeks after the first day of the last menstrual period.
   2. The patient should be instructed not to use vaginal medications, lubricants, spermicides, or douches 48 hours prior to the collection of the Pap smear.
   3. The patient should also refrain from intercourse 24 hours prior to the collection of the Pap smear.
Department: Microbiology

I. Copan ESwab (Vaginal, GBS, Wound, Lesion and Throat Cultures)

A. Preparation of the Patient:

1. Peel open the kit package and remove the tube of medium and inner pouch containing the sterile swab applicator.
2. Remove the swab applicator from its peel pouch and use to collect the specimen. During sample collection when handling the swab applicator, the operator must not touch the area below the breakpoint indication line; that is the area from the line to the tip of the nylon flocked swab, as this will lead to contamination of the applicator shaft and the culture thus invaliding the test results.
   a. Vaginal:
      i. Wipe away old secretions/discharge.
      ii. Obtain secretions from the mucosal membrane of the vaginal wall with a sterile swab/ 
   b. Vaginal/rectal (For GBS):
      i. Insert sterile swab 2cm into vagina, rotate swab.
      ii. Insert the same swab 1cm into anus and rotate swab.
   c. Wound:
      i. Remove surface exudate by wiping with sterile saline or 70% alcohol.
      ii. Using a sterile swab pass deep into the wound to firmly sample the wound’s “fresh border.”
   d. Lesion:
      i. While pressing the base of the lesion, firmly rub base with a sterile swab to collect fluid.
   e. Throat:
      i. Depress tongue with a tongue depressor.
      ii. Sample the posterior pharynx, tonsils, and inflamed areas with a sterile swab.
3. After the swab sample is taken from the patient, break the swab off into the tube as follows:
   - With the other hand grasp the swab shaft at the very end with the thumb and first finger
   - Lean the part of the shaft with the breaking point against the rim of the tube
   - Bend the swab shaft at a 180 degrees angle to break if off at the colored ink breakpoint mark.
   - Discard the broken handle part of the swab shaft into an approved medical waste disposal container.
4. Replace cap on the tube and secure tightly

B. Type of Collection Container/Amount:

1. One Copan ESwab (480C) with one swab present inside transport tube.

C. Transport:

1. ESwab should be transported directly to the laboratory, preferably within 2 hours of collection to maintain optimum organism viability.
2. If immediate delivery or processing is delayed, then specimens should be refrigerated at 4 – 8°C or stored at room temperature (20 – 25°C) and processed within 48 hours.
D. **Clinical Data:**
   1. Source
   2. Pertinent Clinical History
   3. (GBS Only) Penicillin allergic (Yes or No)
   4. (GBS Only) Weeks pregnant

II. **UA Preservative tube (tiger top) and C&S tube (grey top) (Urine Cultures)**

A. **Preparation of the Patient:**
   1. Patients should be directed by clinic staff to provide a midstream urine specimen.
      a. While holding the labia apart, begin voiding.
      b. After several milliliters has passed, collect a midstream portion without stopping the flow of urine.
      c. The midstream portion is used for bacterial culture.
   2. A clinic staff member will obtain the urine cup from patient.
   3. Submerge tip of the transfer straw in specimen.
      a. Push C&S Preservative tube (grey top) into the transfer straw.
         i. Hold in position until flow stops.
         ii. Remove tube, leaving transfer straw in specimen container.
         iii. Shake tube vigorously
      b. Push UA Preservative tube (tiger top) into transfer straw completely.
         i. Hold in position until flow stops.
         ii. Remove tube, leaving transfer straw in specimen container.

   **Note:** The tubes must be filled to the minimum fill line and not exceed the maximum fill line, in order to maintain the proper additive to urine ratio.

   4. Invert UA Preservative tube 8-10 times to mix the sample.
   5. Dispose of transfer straw in sharps container and urine cup in trash.

B. **Type of Collection Container/Amount:**
   1. UA Preservative tube (tiger top) and C&S tube (grey top).

C. **Transport:**
   1. A Preservative Tube (tiger top)
      a. UA Preservative tube is to be sent to the laboratory within 72 hours. Specimen can be kept at room temperature for 72 hours.
   2. C&S Preservative tube (grey top)
      a. C&S Preservative tube is to be sent to the laboratory within 48 hours. Specimen can be kept at room temperature for 48 hours.

D. **Clinical Data:**
   1. Source
   2. Pertinent Clinical History
Department: Clinical Pathology

A. Preparation of the Patient:

1. Identify the patient using two identifies such as their name and date of birth. This information must match the requisition.
2. Reassure the patient that the minimum amount of blood required for testing will be drawn.
3. Assemble the necessary equipment. Check for expired tubes at this time.
4. Wash hands or sanitize and put on gloves.
5. Position the patient with the arm extended to form a straight-line from shoulder to wrist.
6. Select the appropriate vein for venipuncture.
   a. At no time may phlebotomists perform venipuncture on an artery.
   b. At no time will blood be drawn from non-arm/hand areas unless there is a specific order allowing such.
   c. Factors to consider in site selection:
      1. Extensive scarring or healed burn areas should be avoided.
      2. Specimens should not be obtained from the same side as a mastectomy.
      3. Avoid areas of hematoma.
      4. If an IV is in place, samples may be obtained below but never above the IV site.
      5. Do not obtain specimens from an arm having a cannula, fistula, or vascular graft.
7. Apply the tourniquet 3-4 inches above the collection site.
   a. Never leave the tourniquet on for over 1 minute.
   b. If a tourniquet is used for preliminary vein selection, release it and reapply after two minutes.
8. Clean the puncture site by making a back and forth pass over the site with the 70% alcohol pad, moving in an outward spiral from the zone of penetration. Allow the skin to dry before proceeding.
    a. Do not touch the puncture site after cleaning.

• Perform the venipuncture with a hub and needle.
  1. Attach the appropriate needle to the hub by removing the plastic cap over the small end of the needle and inserting into the hub, twisting it tight.
  2. Remove plastic cap over needle and hold bevel up.
  3. Pull the skin tight with your thumb or index finger just below the puncture site.
  4. Holding the needle in line with the vein, use a quick, small thrust to penetrate the skin and enter the vein in one smooth motion.
  5. Holding the hub securely, insert the first vacutainer tube following proper order of draw into the large end of the hub penetrating the stopper. Blood should flow into the evacuated tube. (Use order of draw job aide)
  6. After blood starts to flow, release the tourniquet and ask the patient to open his or her hand.
  7. When blood flow stops, remove the tube by holding the hub securely and pulling the tube off the needle.
  8. If multiple tubes are needed, follow the proper order of draw.
    • DO NOT SHAKE OR MIX VIGOROUSLY.
9. Gently invert tube to allow proper mixing. (Use tube guide job aide to determine the amount of inversions.)

10. Place a gauze pad over the puncture site and remove the needle.

11. Immediately apply slight pressure immediately after the needle is removed.

12. Apply a fresh bandage, gauze or tape.

B. Centrifugation

1. The SST must properly clot prior to centrifugation in an upright position for at least 30 minutes.

2. Red top tubes must properly clot prior to centrifugation in an upright position for at least 60 minutes.

3. Centrifugation is required within 2 hours.

4. Centrifugation should achieve a clear separation of cells and plasma/serum.

5. Centrifuge tubes for 15 minutes at 3,000-3,800 RPM.

6. If centrifuge does not have a timer, watch time carefully to avoid over or under centrifuging.

C. Aliquoting:

1. To prevent cross contamination of specimens and aliquots, please label all tubes prior to aliquoting with two patient identifiers.

D. Transport:

1. Refrigerated: Cooler bags. Specimens should not have direct contact with the cooler bags. Cells can become damaged.

2. Frozen: Dry ice can be utilized. Frozen specimens should not be more than ¾ full and only plastic vials should be used.

E. Clinical Data:

1. Source

2. Pertinent Clinical History

3. (ABO/Rh) Blood type if known

4. (ABO/Rh) Transfusion, if applicable

5. (ABO/Rh) Date of last RhoGAM shot

I. K2 and/or K3 Lavender - Contains EDTA anti-coagulant. (Used for CBC, ESR, Abo/Rh, and Antibody Screens)

- Whole blood – send filled tube.
  1. If Antibody Screen is ordered, draw two separate EDTA tubes.
- Plasma – transfer to plastic vial and label with patient’s name and date of birth.
  a. Only EDTA plasma is acceptable for PTH.

II. Serum Separator tube (SST) - Contains gel-barrier. (RPR, Toxo IgG and IgM, Anti HBC IgM, CMV IgG and IgM, Rubella IgG, VZV IgG, Syphilis IgG, HIV Combo Ag/Ab, HSV-1 and HSV-2 IgG, AMH, HCG+beta, Anti-HCV, HBsAg, Estradiol, FSH, T3, FT3, FT4, T4, T3 up, LH, Prolactin, Progesterone and TSH.)

- Serum – allow blood to clot and centrifuge tube. If needed draw second.

III. Light Blue - Contains sodium citrate anticoagulant. (PT/INR, PTT)

- Whole blood (received within 4 hours) – send filled tube.
• Processing the sample (platelet poor plasma)
  o Centrifuge the sample 15 minutes at 3280-3480 rpm.
  o Aliquot the plasma into a transfer tube. Be careful to not disturb the platelet layer. Label the tube with appropriate identifiers.
  o To prevent cross contamination of specimens and aliquots, please label all tubes prior to aliquoting with two patient identifiers.
  o Centrifuge the aliquot tube 15 minutes at 3280-3480 rpm.
  o Aliquot the platelet poor plasma into a second transfer tube leaving a small amount at the bottom of the tube. Use care to not aspirate the pellet of Platelets/RBC’s at the bottom of the tube. This is the second aliquot tube. Label the transfer tube with appropriate identifiers.
  o Freeze the sample.
Department: Histology

I. Preparation of the Patient:
   A. Biopsy site should be cleaned and prepared as appropriate for the site. Click on the links below for additional collection and handling information pertaining to the individual biopsy types.

1. **Soft Biopsy: Exocervix or lower genital tract biopsy**
   a. [https://histologics.com/softbiopsy.html](https://histologics.com/softbiopsy.html)
   b. The SoftBiopsy® design is a special device used to non-surgically acquire an exocervical biopsy.
   c. The tip is snapped free of the handle and submitted in the formalin vial.
   d. Please thoroughly read the instructions for the SoftBiopsy® kit to ensure accurate specimen collection.

2. **Soft ECC: Endocervical curettage**
   a. [https://histologics.com/soft-ecc.html](https://histologics.com/soft-ecc.html)
   b. [https://histologics.com/soft-ecc-s.html](https://histologics.com/soft-ecc-s.html)
   c. The SoftECC® design is a special device used to non-surgically acquire an endocervical biopsy.
   d. The tip is snapped free of the handle and submitted in 10% Neutral Buffered Formalin (NBF) or Carson Millonig’ formalin.
   e. Please thoroughly read the manufacturer’s instructions for the SoftECC® kit to ensure accurate specimen collection.

3. **Loop Electrosurgical Excision procedure: LEEP**
   a. The transformation zone and/or lesional area of cervix is removed with a heated wire loop.
   b. Place into 10% Neutral Buffered Formalin (NBF).
   c. Use 40 mL or 60 mL size vial, depending on the size of the excision.

4. **Cervical Punch: Punch biopsy**
   a. A small tissue sample is punched from the cervix and placed into 10% Neutral buffered formalin or Carson Millonig’ formalin.

5. **Cervical Conization: Cone Biopsy**
   a. The transformation zone is surgically removed and placed into 10% Neutral Buffered Formalin (NBF).
   b. Use 60 mL size vial for adequate fixation.

6. **Endometrial Biopsy: Endometrium**
   a. A sample of the endometrium is taken using a Pipelle, curette, or other biopsy device, and is placed into 10% Neutral Buffered Formalin (NBF).
   b. Use a 40 mL or 60 mL size vial (20x volume of formalin to volume of the biopsy required for proper fixation).

7. **Tissue Biopsy, NOS**
   a. Indicate biopsy site and submit tissue in 10% Neutral Buffered Formalin (NBF).

8. **Endocervical Curettage**
   a. A curette is used to scrape the lining of the endocervical canal.
   b. Place tissue is placed in 10% Neutral Buffered Formalin (NBF) or Carson Millonig’ formalin.

9. **Vulva Biopsy**
   a. A small area of the vulva is removed and placed into 10% Neutral Buffered Formalin (NBF) or Carson Millonig’ formalin.
   b. Sample will be sent out.

10. **Vaginal Biopsy**
a. A small area of the vagina is removed and placed in 10% Neutral Buffered Formalin (NBF) or Carson Millonig’ formalin.

II. Transport:
   A. Transport at 15°C to 30°C

III. Clinical Data:
   A. Source
   B. (LEEP) Orientation
   C. Pertinent Clinical History

IV. Restrictions:
   A. Hemostatic solutions, such as Monsel’s solution, should NOT be applied until after all biopsies are taken, as these chemicals cause a coagulative artifact that severely limits microscopic evaluation of the tissue.
   B. Specimens are occasionally delivered in CytoRich Red. If this happens, the sample needs to be transferred to formalin immediately.
ATTACHMENTS
# BD Vacutainer® Order of Draw for Multiple Tube Collections

**Designed for Your Safety**

Reflects change in CLSI recommended Order of Draw (H3-A5, Vol 23, No 32, 8:102)

<table>
<thead>
<tr>
<th>Closure Color</th>
<th>Collection Tube</th>
<th>Mix by Inverting</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>BD Vacutainer® Blood Collection Tubes (glass or plastic)</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Blood Cultures - SPS</td>
<td>8 to 10 times</td>
</tr>
<tr>
<td></td>
<td>• Citrate Tube</td>
<td>3 to 4 times</td>
</tr>
<tr>
<td></td>
<td>or BD Vacutainer® SST™ Gel Separator Tube</td>
<td>5 times</td>
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<tr>
<td></td>
<td>or Serum Tube (glass or plastic)</td>
<td>5 times (plastic) none (glass)</td>
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<tr>
<td></td>
<td>or BD Vacutainer® Rapid Serum Tube (RST)</td>
<td>5 to 6 times</td>
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<tr>
<td></td>
<td>• BD Vacutainer® PST™ Gel Separator Tube With Heparin</td>
<td>8 to 10 times</td>
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<tr>
<td></td>
<td>• Heparin Tube</td>
<td>8 to 10 times</td>
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<td></td>
<td>• EDTA Tube</td>
<td>8 to 10 times</td>
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<tr>
<td></td>
<td>• BD Vacutainer® PPT™ Separator Tube K₂EDTA with Gel</td>
<td>8 to 10 times</td>
</tr>
<tr>
<td></td>
<td>• Fluoride (glucose) Tube</td>
<td>8 to 10 times</td>
</tr>
</tbody>
</table>

* When using a winged blood collection set for venipuncture and a coagulation (citrate) tube is the first specimen tube to be drawn, a discard tube should be drawn first. The discard tube must be used to fill the blood collection set tubing’s "dead space" with blood, but the discard tube does not need to be completely filled. This important step will ensure proper blood-to-additive ratio. The discard tube should be a nonadditive or coagulation tube.

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**Note: Always follow your facility’s protocol for order of draw**

Handle all biologic samples and blood collection "sharps" (needles, lancets, and blood collection and procurement equipment) according to the policies and procedures of your facility. Noncompliance may result in medical attention in the event of any exposure to biologic samples (for example, through a puncture injury) since they may transmit viral hepatitis, HIV (AIDS), or other infectious diseases. Use an approved sharps and needle protector if the blood collection device provides one. BD does not recommend reusing used needles, but the policies and procedures of your facility may differ and must always be followed. Discard all blood collection "sharps" in biohazard containers approved for their disposal.

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BD Technical Services
1.800.631.0174
BD Customer Service
1.888.237.2762
www.bd.com/vacutainer
**BD Vacutainer® Venous Blood Collection Tube Guide**

For the full array of BD Vacutainer® Blood Collection Tubes, visit [www.bd.com/vacutainer](http://www.bd.com/vacutainer). Many are available in a variety of sizes and draw volumes (for pediatric applications). Refer to our website for full descriptions.

<table>
<thead>
<tr>
<th>BD Vacutainer® Tubes with BD Hemogard™ Closure</th>
<th>BD Vacutainer® Tubes with Conventional Stopper</th>
<th>Additive</th>
<th>Inversions at Blood Collection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gold</td>
<td>Red/Gray</td>
<td>• Clot activator and gel for serum separation</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Lavender                                       | Lavender                                      | • Liquid K$_2$EDTA (glass)  
                                           • Spray-coated K$_2$EDTA (plastic) | 8     |
|                                                |                                               |          |                              |
| Light Blue                                     | Light Blue                                    | • Buffered sodium citrate  
                                           0.105 M (=3.2%) glass  
                                           0.109 M (3.2%) plastic  
                                           • Citrate, theophylline, adenosine, dipyrядamole (CTAD) | 3-4   |

[Image of BD Vacutainer® Venous Blood Collection Tube Guide]

[Link to BD website for full range of products]
# BD Vacutainer® Venous Blood Collection

## Tube Guide

For the full array of BD Vacutainer® Blood Collection Tubes, visit www.bd.com/vacutainer.

Many are available in a variety of sizes and draw volumes for pediatric applications. Refer to our website for full descriptions.

<table>
<thead>
<tr>
<th>BD Vacutainer® Tube</th>
<th>BD Vacutainer® Tube</th>
<th>Additives</th>
<th>Inactivations of Blood Collection™</th>
<th>Laboratory Use</th>
<th>Your Lab’s Draw Volume/Inactivator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gold</td>
<td>Red/Gray</td>
<td>• Clot activator gel &amp; gel for serum separation</td>
<td>5</td>
<td>for serum determinations in chemistry. May be used for routine blood donor screening and diagnostic testing of serum for infectious disease. Tube inversion ensures mixing of clot activator with blood. Blood clotting time: 30 minutes.</td>
<td></td>
</tr>
<tr>
<td>Light Green</td>
<td>Green/Gray</td>
<td>• Lithium heparin and gel for platelet separation</td>
<td>8</td>
<td>for plasma determinations in chemistry. Tube inversion ensures mixing of anticoagulant (heparin) with blood to prevent clotting.</td>
<td></td>
</tr>
<tr>
<td>Red</td>
<td>Red</td>
<td>• Silicone-coated (glass) • Clot activator, silicone-coated (glass)</td>
<td>10</td>
<td>for serum determinations in chemistry. May be used for routine blood donor screening and diagnostic testing of serum for infectious disease. Tube inversion ensures mixing of clot activator with blood. Blood clotting time: 45 minutes.</td>
<td></td>
</tr>
<tr>
<td>Orange</td>
<td></td>
<td>• Tocoline-based clot activator with gel for serum separation</td>
<td>5 to 6</td>
<td>for clot mixing determinations. Tube inversion ensures mixing of clot activator with blood. Blood clotting time: 5 minutes.</td>
<td></td>
</tr>
<tr>
<td>Orange</td>
<td></td>
<td>• Tocoline-based clot activator</td>
<td>8</td>
<td>for clot mixing determinations. Tube inversion ensures mixing of clot activator with blood. Blood clotting time: 5 minutes.</td>
<td></td>
</tr>
<tr>
<td>Royal Blue</td>
<td>Blue</td>
<td>• Clot activator (plastic, serum), K2 EDTA (plastic)</td>
<td>8</td>
<td>for trace-element, toxicology, and nutritional chemistry determinations. Special stopper formulation provides low levels of trace elements (see package insert). Tube inversion ensures mixing of either clot activator or anticoagulant (EDTA) with blood.</td>
<td></td>
</tr>
<tr>
<td>Green</td>
<td>Green</td>
<td>• Sodium heparin, lithium heparin</td>
<td>8</td>
<td>for plasma determinations in chemistry. Tube inversion ensures mixing of anticoagulant (heparin) with blood to prevent clotting.</td>
<td></td>
</tr>
<tr>
<td>Gray</td>
<td>Gray</td>
<td>• Potassium, sodium citrate</td>
<td>8</td>
<td>for glucose determinations. Stable and EDTA anticoagulants will give plasma samples. Sodium fluoride is the anticoagulant agent. Tube inversion ensures proper mixing of additive with blood.</td>
<td></td>
</tr>
<tr>
<td>Tin</td>
<td></td>
<td>• K2 EDTA (plastic)</td>
<td>8</td>
<td>for lead determinations. This tube is certified to contain less than 0.5 ppm of lead. Tube inversion prevents clotting.</td>
<td></td>
</tr>
<tr>
<td>Yellow</td>
<td></td>
<td>• Sodium polyethylene sulfonate (SPS) • Acid chlorohydrate additive (ACPA) Solution A – 237 μg/mL trimethadione, 8.0 μL/L thioridazine, 24.5 μg/mL desipramine Base, B – 12.2 μg/mL trimethadione, 4.6 μL/L thioridazine, 14.7 μg/mL desipramine</td>
<td>8</td>
<td>for SPS blood culture specimen collections in microbiology. ACPA for use in blood bank studies, HLA typing, and SNP and genotyping testing. Tube inversion ensures mixing of anticoagulant with blood to prevent clotting.</td>
<td></td>
</tr>
<tr>
<td>Pale Lavender White</td>
<td></td>
<td>• Liquid K2 EDTA (glass), Plasma-coated K2 EDTA (plastic)</td>
<td>8</td>
<td>for K2 EDTA and K2 EDTA for whole blood hematologic determinations. K2 EDTA may be used for routine venous/venipuncture testing and blood donor screening. Tube inversion ensures mixing of anticoagulant (EDTA) with blood to prevent clotting.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• K2 EDTA and gel for platelet separation</td>
<td>8</td>
<td>for use in molecular diagnostic tests (such as, not limited to, polymerase chain reaction (PCR) and molecular Western Blot (WBx) amplification techniques). Tube inversion ensures mixing of anticoagulant (EDTA) with blood to prevent clotting.</td>
<td></td>
</tr>
<tr>
<td>Yellow</td>
<td></td>
<td>• Sodium polyethylene sulfonate (SPS) 0.150 μL/mL, 0.1% glass 0.10% H2O (3.2% glass) • Citrate, thioridazine, trimethadione, desipramine (TCD)</td>
<td>3-4</td>
<td>for coagulation determinations. CASO for selected/plated function assay and routine coagulation determinations. Tube inversion ensures mixing of anticoagulant (glass) to prevent clotting.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• None (glass)</td>
<td>0</td>
<td>for use as a discard tube or remainder specimen tube</td>
<td></td>
</tr>
</tbody>
</table>