

APTIMA® Specimen Transfer Kit

For Use with PreservCyt Liquid Pap Specimens

For *in vitro* diagnostic use.

Intended Use

The GEN-PROBE APTIMA Specimen Transfer Kit is only for use with GEN-PROBE APTIMA Assays. The GEN-PROBE APTIMA Specimen Transfer Kit allows for APTIMA Assay testing of gynecological specimens collected in Cytyc PreservCyt vials according to the instructions provided.

Reagents

Note: Catalog numbers are listed in parentheses.

Materials Provided

APTIMA® Specimen Transfer Kit (Cat. No. 301154C)

Symbol	Component	Quantity	Description
	APTIMA Specimen Transfer tubes	100 tubes	1 tube x 2.9 mL

Materials Required But Not Provided

- One or more kits for the APTIMA Assays
- Pipettor, 1000 µL RAININ PR1000 (Cat. No. 901715)
- Tips, P1000 Style, special diameter tip only available from Gen-Probe (Cat. No. 105049)
- Bleach, 5% to 7% (0.7M to 1.0M) sodium hypochlorite solution
- Test tube rack
- Plastic-backed absorbent laboratory bench covers
- Fisherbrand BloodBloc Super Absorbency Wipes (available from Fisher Scientific)
- Lint-free disposable wipes

Note: See the appropriate package inserts for *Materials Required But Not Provided* for each of the APTIMA Assays.

Optional Materials

- Gyn TransCyt Filters (clear) for use with the ThinPrep 2000 Processor

Warnings and Precautions

For handling PreservCyt Solution liquid Pap specimens refer to the *Warnings and Precautions* section in the *Introduction of the ThinPrep 2000 Operator's Manual*.

If the Aliquot Removal procedure will be used, refer to the *ThinPrep 2000* or *ThinPrep 3000 Processor Operators Manual-Addendum* for instructions on aliquot removal.

- A. Use the APTIMA Specimen Transfer Kit with APTIMA Assays only. Performance has not been established with other products.
- B. Do not apply the APTIMA Specimen Transfer medium directly to skin or mucous membranes or take internally.
- C. Use only supplied or specified disposable laboratory ware.
- D. Use routine laboratory precautions. Do not eat, drink or smoke in designated work areas. Wear disposable, powderless gloves, protective eye ware, and laboratory coats when handling

specimens and reagents. Wash hands thoroughly after handling specimens and reagents.

- E. Specimens may be infectious. Use Universal Precautions when handling specimens. Only laboratory personnel adequately trained in handling infectious materials should be permitted to perform the procedures described in this package insert.
- F. Take care to avoid cross-contamination during the specimen handling steps. Specimens may contain high levels of organisms. Change gloves frequently and always change gloves when they come in contact with specimen.
- G. Work surfaces, pipettes and other equipment must be regularly decontaminated with 0.5% sodium hypochlorite in deionized (DI) water. If DI water is not used in the 0.5% sodium hypochlorite solution, the effectiveness of the solution may be compromised. Refer to *Procedural Notes*, section C and *Decontamination Instructions*. The effect of the ThinPrep 2000 Processor decontamination procedure was not assessed for its impact on Pap results. Prior to implementing the decontamination procedure, laboratories should validate that the decontamination procedure does not impact Pap results.
- H. Only pipette tips with hydrophobic plugs can be used to transfer specimens to the transfer tubes.
- I. Do not use this kit after its expiration date.
- J. Maintain proper storage conditions during specimen shipping to ensure the integrity of the specimen. Specimen stability under shipping and storage conditions other than those recommended has not been evaluated.
- K. Dispose of unused PreservCyt solutions and waste in accordance with federal, state, and local regulations.
- L. If testing gynecological specimens processed with the ThinPrep 2000 processor, a specific procedure has been validated to mitigate the potential for cross-contamination during Pap processing. Two important steps of the procedure include: (1) bleaching of the PreservCyt filter cap (in 0.5% sodium hypochlorite in DI water) for 1 minute between samples and (2) mandating that the operator change gloves between each sample. Refer to *Procedural Notes* for a detailed protocol. It is important to only dilute bleach with DI water. The pH of tap water varies from lab to lab. Alkaline water can decrease the available chlorine making the bleach less effective for decontaminating equipment.

Storage and Handling Requirements

Gynecological specimens can be stored in the Cytyc PreservCyt Solution vials for 30 days at 2°C to 30°C prior to Pap processing and/or transfer to APTIMA Specimen Transfer tubes. Once the PreservCyt Solution liquid Pap specimen is transferred to the APTIMA Specimen Transfer tube, the specimen must be tested within 30 days when stored at 2°C to 8°C or 14 days at 15°C to 30°C. If longer storage is needed, freeze at -20°C to -70°C for up to 12 months after transfer.

For additional stability requirements, refer to the appropriate APTIMA Assay package insert.

Note: Federal requirements for packaging must be met when specimens are transported by common land and air carriers. Refer to 42 CFR, Part 72. The most current requirements may be obtained from the Centers for Disease Control and Prevention Office of Health and Safety (CDC) in Atlanta, Georgia at 1-800-311-3435.

Procedural Notes

A. Preparation of the Specimen Transfer Area

1. Put on clean gloves.
2. Wipe down work surfaces and pipettors with 0.5% sodium hypochlorite. (Use DI water to dilute bleach. A prepared batch of 0.5% sodium hypochlorite will be effective for 1 week if it is properly stored.)
3. Allow the bleach to contact work surfaces and pipettors for at least 1 minute, then follow with a water rinse. Dry the surfaces with paper towels.
4. Cover the bench with clean, plastic-backed, absorbent laboratory bench covers.
5. In the specimen transfer area, place a test tube rack containing a sufficient number of APTIMA Specimen Transfer tubes corresponding to the number of PreservCyt Solution liquid Pap specimens being tested.
6. Label each APTIMA Specimen Transfer Tube with the accession number or specimen ID number.

Refer to the *ThinPrep 2000 and ThinPrep 3000 Operator's Manual - Addendum* for instructions on aliquot removal. If the ThinPrep aliquot removal procedure will be used, follow the Gen-Probe Specimen Transfer Procedure as defined in section B.

B. Specimen Transfer Procedure for PreservCyt Solution Liquid Pap Specimen Aliquots Removed before Processing with the ThinPrep Processor

1. Put on clean gloves and transfer specimens to be tested to the Specimen Transfer Area.
2. Uncap the APTIMA Specimen Transfer tube, placing the cap on the bench with the threads facing up.
3. Vortex the tube containing the removed aliquot of PreservCyt Solution liquid Pap specimen for 3 to 10 seconds. Uncap the tube, placing the cap on the bench with the threads facing up.
4. Within 1 minute of vortexing, transfer 1 mL of the PreservCyt Solution liquid Pap specimen into the APTIMA Specimen Transfer tube.
5. Dispose of the pipette tip in a container of 0.5% sodium hypochlorite in DI water.
6. Recap the APTIMA Specimen Transfer tube tightly. Gently invert the tube 2 to 3 times to ensure complete mixture of the specimen.
7. Recap the tube containing the removed aliquot of PreservCyt Solution liquid Pap specimen for storage at 2°C to 30°C for 30 days, if desired.
8. Put on clean gloves and repeat steps 1 through 7 above for the transfer of subsequent specimens. To reduce the risk of contaminating other specimens, work with one PreservCyt Solution liquid Pap specimen at a time.
9. Test the PreservCyt Solution liquid Pap specimen from the APTIMA Specimen Transfer tube according to the instructions in the appropriate APTIMA Assay package insert.

If PreservCyt Solution liquid Pap specimens will be transferred into APTIMA Specimen Transfer tubes after processing using the ThinPrep 2000 Processor, perform ThinPrep 2000 processing according to the instructions in section C.

C. Processing PreservCyt Solution Liquid Pap Specimens Using the ThinPrep 2000 Processor

Refer to the *ThinPrep 2000 Operator's Manual* to perform the following procedures:

- Standard Pap processing steps
- Maintenance of the O-rings at the base of the filter cap.

1. Put on clean gloves.
2. Clean 2 filter caps by soaking them in 0.5% sodium hypochlorite in DI water for at least 1 minute, rinse the caps in DI water and dry them thoroughly with a lint-free, disposable wipe. Dispose of the wipe.

Note: Using two filter caps enables the work flow to continue while one filter cap is soaking.

3. Place a clean filter cap on a BloodBloc Super Absorbency Wipe.
4. Place the fixative bath into the ThinPrep 2000 Processor.
5. Create a filter assembly by placing a new Gyn TransCyt Filter in a clean filter cap and insert the filter assembly into the ThinPrep 2000 Processor. (Refer to the *ThinPrep 2000 Processor Operator's Manual* for details on performing this step.)
6. Put a slide in the slide holder. (Refer to the *ThinPrep 2000 Operator's Manual* for details on performing this step.)
7. Uncap the PreservCyt Solution vial, placing the cap on the bench with the threads facing up. Ensure that the bench is clean, with no bleach residue or foreign particles.
8. Load the PreservCyt Solution vial into the ThinPrep 2000 Processor. From the ThinPrep processor main menu, select "4-GYN" by pressing **4** on the keypad.
9. Put on clean gloves.
10. Once the slide preparation is finished, open the door, remove the PreservCyt Solution vial and recap the vial.
11. Remove the fixative bath and place the slide in a 95% ethanol bath.
12. Return the fixative bath to the processor.
13. Remove the filter assembly from the processor using one hand to grasp the filter cap and, using a lint-free, disposable wipe as a barrier, separate the filter from the filter cap. Discard the filter, gloves, and disposable wipe. **Do not discard the filter cap.**
14. Place the filter cap in a container of 0.5% sodium hypochlorite in DI water for at least 1 minute.
15. With clean gloves, rinse the filter cap in DI water, then dry it thoroughly with a lint-free disposable wipe. Dispose of the wipe.
16. Repeat the process for each specimen starting with step 3 of this processing procedure, changing gloves between each specimen, until all of the specimens are processed.

D. Specimen Transfer Procedure for PreservCyt Vials after Processing with the ThinPrep 2000 Processor

1. Put on clean gloves and transfer specimens to be tested to the Specimen Transfer Area.
2. Uncap the APTIMA Specimen Transfer tube, placing the cap on the bench with the threads facing up.
3. Vortex the PreservCyt Solution vial for 3 to 10 seconds. Uncap the vial, placing the cap on the bench with the threads facing up.
4. Within 1 minute of vortexing, transfer 1 mL of the processed PreservCyt Solution liquid Pap specimen into the APTIMA Specimen Transfer tube.
5. Dispose of the pipette tip in a container of 0.5% sodium hypochlorite in DI water.
6. Recap the APTIMA Specimen Transfer tube tightly. Gently invert the tube 2 to 3 times to ensure complete mixture of the specimen. This specimen is referred to as a processed PreservCyt Solution liquid Pap specimen.
7. Recap the PreservCyt Solution vial for storage, if desired.
8. Put on clean gloves and repeat steps 1 through 7 above for the transfer of subsequent specimens. To reduce the risk of contaminating other specimens, work with one processed PreservCyt Solution liquid Pap specimen at a time.

Test Procedure

Test the processed PreservCyt Solution liquid Pap specimen from the APTIMA Specimen Transfer tube according to the instructions in the appropriate APTIMA Assay package insert.

Decontamination Instructions

Note: If PreservCyt Solution liquid Pap specimens are transferred into APTIMA Specimen Transfer tubes after processing using the ThinPrep 2000 Processor, the ThinPrep 2000 Processor must be decontaminated after 8 hours of use.

It is important to clean the processor from the top of the machine to the bottom and to change gloves as instructed in order to prevent recontamination of cleaned surfaces.

Avoid touching the internal instrumentation wiring throughout this process.

Only use 0.5% sodium hypochlorite in DI water to decontaminate the ThinPrep 2000 Processor.

A. Decontamination of the ThinPrep 2000 Processor

1. Put on clean gloves.
2. Wet a lint-free disposable wipe with 0.5% sodium hypochlorite in DI water.
3. Open the sample door, wipe down the slide holder with the disposable wipe, and dispose of the wipe.
4. Close the sample door.
5. Move the internal workings of the processor into the maintenance position by pressing **7** then **2** and **Enter** on the keypad.
6. Open the sample door.
7. Put on clean gloves.
8. Wet a lint-free disposable wipe with 0.5% sodium hypochlorite and wipe down the surfaces from top to bottom. Be sure to thoroughly clean surfaces that are handled during processing such as the slide holder, fixative bath holder, and sample vial holder. Also be sure to clean the cap seal and the inside of the processor's door. Dispose of the wipe.
9. Change gloves. Using a lint-free disposable wipe moistened with 0.5% sodium hypochlorite, clean the exterior of the processor from top to bottom paying close attention to the door handle and the keypad. Dispose of the wipe.
10. Allow the bleach to sit on the equipment for 5 minutes.
11. Return the processor to the working position by closing the sample door and pressing **Enter** on the keypad.
12. Change gloves and wipe down the slide holder with a lint-free, disposable wipe soaked in DI water. Dispose of the wipe.
13. Close the sample door and enter **7** then **2** and **Enter** on the keypad to return the processor to the maintenance position.
14. Open the sample door and, working from top to bottom, wipe the interior with a lint-free, disposable wipe soaked in DI water, being sure to thoroughly remove the bleach from the cap seal. Dispose of the wipe.
15. Repeat steps 1 through 14 to ensure that decontamination is complete.

B. Lab Contamination Monitoring Protocol

There are many laboratory-specific factors that may contribute to contamination, including testing volume, workflow, disease prevalence, and various other laboratory activities. These factors should be taken into consideration when contamination monitoring frequency is being established. Intervals for contamination monitoring should be established based on each laboratory's practices and procedures. Each cytology lab must coordinate with an APTIMA testing site in order to test samples collected for monitoring contamination and receive the sample results.

To monitor for laboratory contamination, the following procedure may be performed using the APTIMA Unisex Swab Specimen Collection Kit for Endocervical and Male Urethral Swab Specimens:

1. Label the swab transport tubes with numbers corresponding to the areas of the lab that will be tested.
2. Remove the specimen collection swab (blue shaft swab with green printing) from its packaging, wet the swab in the swab transport media and swab the numbered area using a circular motion.
3. Immediately insert the swab into the corresponding transport tube.
4. Carefully break the swab shaft at the score line. Avoid splashing the contents.
5. Re-cap the swab transport tube tightly.
6. Repeat steps 2 to 5 for all areas to be swabbed.
7. Test the swab using the appropriate APTIMA Assay according to the *Test Procedure* section of the appropriate assay package insert.

If the results are positive or equivocal (see the *Test Interpretation* section of the appropriate assay package insert), the surface may be contaminated and should be decontaminated by treating with bleach as recommended in the appropriate Operator's Manual and/or package insert.

PreservCyt Solution Liquid Pap Specimen Contamination Study

To demonstrate that bleaching the filter cap is effective in reducing contamination, 200 negative and 200 high titer ($>1 \times 10^6$ CFU/mL) GC positive samples were alternately processed first without the bleaching steps and, subsequently, with the bleaching steps. The GC positive samples were generated by spiking the liquid Pap sample with cell equivalents of $>5 \times 10^6$ fg GC rRNA. Note that the operators changed gloves between handling each sample for both the first and second stages of the study. The same filter cap was used with all 400 samples. After processing liquid Pap in the ThinPrep 2000 instrument, 1 mL of the remaining PreservCyt sample was transferred to an APTIMA Specimen Transfer tube (this is now referred to as the processed liquid Pap sample) then run in the APTIMA COMBO 2 assay. These conditions replicate the processes that are expected to be conducted in a typical clinical setting.

Additionally, an aliquot was removed from each sample prior to processing on the ThinPrep 2000 instrument as a control sample. This aliquot would be tested when a sample produced a false positive result to determine if the contamination occurred prior to sample processing. Further, an additional 20 negative PreservCyt liquid Pap samples were added at the end of the second stage to determine if a build up of cells on the processor (potentially due to the creation of aerosols) could contaminate negative samples.

Without the bleach step there were 24 false positives and 17 equivocal results among the PreservCyt samples for a false result frequency of 20.5%. When the filter cap was bleached between samples the false positive frequency was 1.4% (3 false positives out of 220 negative samples). None of the pre-processed aliquots from the samples producing false results were GC-positive. This is consistent with the notion that the contamination was not introduced prior to processing the sample on the ThinPrep 2000 instrument; rather, contamination was likely introduced during the Pap processing.

These studies demonstrate that incorporation of a contamination mitigation protocol decreases the potential for cross-contamination introduced by the processing steps of the ThinPrep 2000 instrument by > 14 fold.

Limitations

- A. Performance of the APTIMA Specimen Transfer kit was not evaluated for testing the same PreservCyt Solution liquid Pap specimen both before and after ThinPrep Pap processing.
- B. PreservCyt Solution liquid Pap samples processed with instruments other than the ThinPrep 2000 processor have not been evaluated for use in APTIMA Assays.
- C. The APTIMA Specimen Transfer Kit was evaluated using PreservCyt Solution liquid Pap specimens collected with either broom-type or endocervical brush/spatula collection devices. The use of other collection devices was not evaluated for use in APTIMA Assays.
- D. The effect of the ThinPrep 2000 Processor decontamination procedure was not assessed for its impact on Pap results. Prior to implementing the decontamination procedure, laboratories should validate that the decontamination procedure does not impact Pap results.
- E. If transferring PreservCyt Solution liquid Pap specimens to APTIMA Specimen Transfer tubes following ThinPrep 2000 processing, use of this kit is limited to personnel who have been trained in processing PreservCyt specimens and in decontaminating the ThinPrep 2000 Processor. Failure to follow the instructions to decontaminate the instrument may result in erroneous results.
- F. The APTIMA Bleach Enhancer has not been validated for the ThinPrep 2000 Processor decontamination procedure.
- G. There is no evidence of degradation of nucleic acids in PreservCyt Solution. If a PreservCyt Solution liquid Pap specimen has small amounts of cellular material, uneven distribution of this material may occur, which may affect the ability to detect target organisms in the collected material. If negative results from the specimen do not fit with the clinical impression, a new specimen may be necessary. When compared to direct sampling with the APTIMA Swab Transport Media for CT and GC, the additional volume of PreservCyt Solution results in greater dilution of the sample material.



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