

## Controlling Contamination of LBC Vials for HPV Testing

### Introduction

As the molecular biology test to detect HrHPV types is a very sensitive DNA based test, all precautions must be taken to ensure no cross contamination occurs when LBC vials are received in the lab. There are some basic measures that can be taken to ensure either ThinPrep or SurePath samples are not inadvertently subjected to contamination in the lab. The NCPTS has formulated these broad guidelines designed primarily for specimen entry and cytopreparatory staff. It is not an exhaustive protocol and labs are expected to expand on these to develop more specific protocols pertaining to their respective lab procedures.

Any time pre aliquots are taken from LBC vials, this must be done in a biohazard cabinet and sterile pipettes must be used.

NOTE: The NCSP endorses the manufacturers' guidelines that:

ThinPrep: A maximum of 4mL may be aliquoted and must be taken as a one only aliquot. However, this may impact on the quality of the sample in certain conditions.

SurePath: A maximum of 0.5mL may be aliquoted and must be taken as a one only aliquot. However, this may impact on the quality of the sample in certain conditions

### Disinfection

The disinfectants mentioned below are those recommended by Molecular Biology scientists; other equally suitable disinfectants may be available for use.

1% bleach is made up by mixing commercially available Chlorodux bleach in a ratio of 200mLs bleach to 800mLs water. Good "turnover" of bleach is recommended e.g. this could be made up on a Monday morning, then all containers emptied out on Friday afternoons with a fresh batch made up in readiness for the following week

Change gloves often, especially following procedures where aerosol formation is likely – (gloves are worth less than 10 cents each, a contamination issue can be HUGE to resolve)

Other than when dealing with spillage always work with bleach on a paper towel – this will ensure that there is no "pooling" as bleach is a strong oxidising agent which causes corrosion when left in contact with metals – even stainless steel. Following bleach use always ensure adequate 70% ethanol / water wipe-away.

Take care that bleach aerosols are not generated and that bleach is not sprayed near "open" specimens.

## SurePath

Note that these guidelines do not consider use of Totalys at this time

- The shelf above and around the PrepMate must be clutter free to minimise collection of dust. The shelf must be cleaned regularly with 70% alcohol.
- Fresh gloves must be worn to place syringes in the white PrepMate racks.
- Fresh gloves must be worn to place stickers over the hole in the lid once the PrepMate has removed the required aliquot of sample from the vial for the cytology slide, or a new vial cap must be used.
- Rubbish bins must have a lid on it at all times and must not be close to the PrepMate.
- The PrepMate racks must be sprayed with 1% bleach, left for a few minutes, rinsed and sprayed with 1% Trigene. Then rinse and dry again. Note that the wells at the bottom of the PrepMate rack where the syringe tip usually rests must be flooded with Trigene to eliminate any possible cross contamination.

It is advisable that no absorbent pads are used around the PrepMate; a bench that can easily be disinfected daily is a better surface to work with.

Wipe the bench around the PrepMate with 1% Trigene once per week

- Wipe the PrepMate itself with 1% bleach – use paper towels.

With the Abbott platform, SurePath vials can be stored at 15-30°C for 2 months and up to 6 months at 2-8°C, and with the Roche platform the vials can be at room temp for up to 2 weeks, then can be refrigerated for up to 6 months for HrHPV testing.

- The 1% bleach solution is made up by mixing the commercially available “Chlorodux” bleach in a ratio of 200mls bleach to 800mls water. Once made up, indicate an expiry date of not more than 5 months from the date the solution was made up.
- All SurePath vials must be refrigerated whenever possible; this ensures that any HrHPV test that may need to be done is not compromised. Testing using the Roche platform requires that vials can remain at room temp for no more than 2 weeks; thereafter they can remain in the fridge for up to 6 months
- The SurePath syringes must be stored in a box with the lid closed and preferably in a cupboard whenever not in use.

A sentinel sample needs to be run on a regular basis, weekly at a minimum. The sentinel is testing for any cross/environmental contamination during routine SurePath samples preparation and needs to be placed in a different position on the PrepMate rack each week.

Place an unused SP vial in PrepMate rack and process with other vials for sample extraction using a syringe. Once sample has been removed by the machine for the cytology slide (which does not actually need to be done), the vial is sent for HPV testing.

This sentinel should always test “Invalid – HPV/Betaglobin DNA not detected”; if DNA is detected then potential sources of contamination need to be investigated.

## ThinPrep

For acid wash, gloves and sterile pipettes must be used. Note that specimens requiring a Glacial Acetic Acid wash step should have 4mls pre-aliquoted for HPV testing.

Hologic recommends vortexing of the Vial prior to aliquot removal to ensure homogeneity.

Please see below:

1. Vortex the vial at high speed for 8 to 12 seconds.
2. Carefully remove the vial cap.
3. Using a pipetting device, withdraw an aliquot of up to 4 ml from the vial. Take care to avoid contaminating gloves with solution. If gloves should become contaminated, replace with a clean pair before proceeding to the next specimen

The following should be carried out on T5000 at a minimum:

- Empty filter wastes into the bin after every batch and change the fixing baths daily/after 100 slides, whichever comes first.
- On a weekly basis, remove the carousel and clean around the bottom of the processing area, using distilled water and lint-free towels. Do not dislodge the carousel sensors, but do keep the area around them clean and make sure nothing blocks them.
- Clean carousel Dispersion area and clean Pneumatic Suction Holders weekly - A lint-free cloth soaked with 70% alcohol may be used to wipe down the surfaces of the slide holder cups. Be sure to let the alcohol completely evaporate (5–10 minutes) before attempting to process slides on the instrument.
- Clean carousel and dust cover, change absorbent pads, remove and clean drip trays on a monthly basis
- The plastic drip trays are located on the underside of the T5000 Processor. They slide all the way out for inspection and cleaning.
  - Wash down with soap and water.

Allow them to dry thoroughly before returning them to the processor

Hologic has no formal recommendation on frequency of sentinel testing, and suggests that weekly testing is appropriate. Run an un-used ThinPrep vial and an un-used Filter for sentinel testing.