

**Background:** Refer to appropriate section in the *HANABI Metaphase Chromosome Harvester User's Manual* for the following procedures mentioned in this document:

- Reagent Exchange Procedure
- Pump Drying Procedure
- Needle Washing Procedure
- Hose Washing Procedure

**Reagents Required:**

- CYTOClean – Harvester Cleaning Solution; PN: 554325
- Distilled Water, (DI H<sub>2</sub>O)

**Daily**

Before running the instrument:

- 1) Remove DI H<sub>2</sub>O bottles, replace with bottles of fresh hypotonic and fixative reagents. Perform the Reagent Exchange Procedure for both the Hypotonic and Fixative flow paths using fresh reagents.
- 2) Ensure water carboy is filled with DI H<sub>2</sub>O and Waste A and B containers are empty.
- 3) Wipe down any surfaces that get reagents or samples spilled on them.

After each run:

- 1) Make sure all surfaces are clean and dry.
- 2) Check for stains from samples or supernatant on the under-side of the station lids.

After the final run of the day, or if the instrument is not to be used for more than 4 hours:

- 1) Replace fixative and hypotonic bottles with DI H<sub>2</sub>O bottles. Perform the Reagent Exchange Procedure with DI H<sub>2</sub>O.
- 2) Perform the Needle Washing Procedure with DI H<sub>2</sub>O
- 3) Perform the Pump Drying Procedure for a minimum of five minutes.

**Weekly Procedure**

- 1) Perform a Needle Washing Procedure using CYTOClean solution in place of DI H<sub>2</sub>O.
- 2) Perform a Needle Washing Procedure using four tubes of DI H<sub>2</sub>O to rinse the cleaner from the system.
- 3) Perform a Reagent Exchange Procedure for both Hypotonic and Fixative lines using CYTOClean in place of DI H<sub>2</sub>O.
- 4) Perform Reagent exchange 3X with DI H<sub>2</sub>O on both hypotonic and fixative lines to flush cleaner.
- 5) Wash Distilled water carboy and Hypotonic solution bottles using warm soapy DI H<sub>2</sub>O.
- 6) Rinse Distilled water carboy and Hypotonic solution bottles thoroughly with DI H<sub>2</sub>O.

**Quarterly Procedure – Hose Washing**

1. Add 25 mL of CYTOClean to 0.5 L of DI H<sub>2</sub>O in a 1 L bottle.
2. Remove the lid from the Distilled water carboy leaving the supply hose attached to the instrument.
3. Place the Distilled water carboy supply hose into the 1 L bottle of CYTOClean solution.
4. **For P3 and P3P only:** Press the H in HANABI and the P in PIII at the same time, this will take you to the Manual Operations screen. Place the system into manual mode as described in the *HANABI Metaphase Chromosome Harvester Maintenance Manual*
  - Go to the Aspirate Manual page by pressing the ASPIRATE MANUAL button.
  - Press the HOME button to ensure Harvester is at its HOME position.
  - Press and hold “Washing Water” (until solution is emptied from bottle).
  - Disconnect the Distilled water carboy supply hose from the instrument and rinse thoroughly with DI H<sub>2</sub>O in the sink.
  - Fill the clean Distilled water carboy with fresh DI H<sub>2</sub>O.
  - Replace the lid of Distilled water carboy with the supply hose and reconnect to the instrument.
5. **For P3 and P3P only:** Press the H in HANABI and the P in PIII at the same time, this will take you to the Manual Operations screen. Place the system into manual mode as described in the *HANABI Metaphase Chromosome Harvester Maintenance Manual*
6. Go to the Aspirate Manual page by pressing the ASPIRATE MANUAL button.
7. Press the HOME button to ensure Harvester is at its HOME position.
8. Perform Needle Washes by pressing the Needle Wash button at least 10 times in order to thoroughly rinse the CYTOClean solution from the aspirator wash station.
9. **For P2:**
  - Remove the Distilled water container from the Harvester.
  - Remove the lid from the container.
  - Add 25 mL of CYTOClean to 0.5 L of DI H<sub>2</sub>O in a 1 L bottle. Place the lid with the attached hose into the 1 L bottle of CYTOClean solution. Go to Tube Wash screen and press the Rinse button, repeat until solution is emptied from bottle, Return the lid and tubing to the attached Distilled water carboy to instrument and press the Rinse button, repeat 10 times.
  - Perform Tube wash with 4 tubes of DI H<sub>2</sub>O.**For P1, P2P:** follow “Hose Washing” procedure in the Maintenance manual.
  - From MAIN screen press NEEDLE WASHING.
  - From NEEDLE WASHING screen press the > in the upper RH corner.
  - Remove the Distilled water container from the Harvester.
  - Remove the lid from the container.
  - Add 25 mL of CYTOClean to 0.5 L of distilled water in a 1 L bottle. Place the lid with the attached hose into the 1 L bottle of CYTOClean solution.
  - Press the ON button, on the screen, under WATER SUPPLY VALVE.
  - Press the START button.

- Once all the solution is gone from the 1 L bottle press the STOP button.
- Remove the 1 L bottle from the water hose and put a 2 L bottle of DI water on.
- Press the START button.
- Once all the water is gone from the 2 L bottle press the STOP button.
- Replace the DI water container.
- Press the OFF button, on the screen, under WATER SUPPLY VALVE.
- Press the < button in the upper RH corner.
- You are back to the NEEDLE WASHING SCREEN.

CYTOClean is a non-phosphate cleaner specifically tested and developed for use with the *HANABI Metaphase Chromosome Harvesters*. When used during routine Harvester maintenance, the ready-to-use solution will remove *tough to clean deposits and build-up that results from routine daily harvesting operations.*

CYTOClean contains an anionic surfactant with a moderately alkaline pH that lifts hard to remove deposits and leaves no interfering residues after cleaning when properly rinsed. **CYTOClean flushes the *HANABI Metaphase Chromosome Harvester* during the automated reagent exchange.** This ensures optimal reliability with consistent reproducible injections and increased lifetime of the injection pump itself.

**Note: Always Rinse the HANABI System with Water Following Use of this Cleaning Agent**



## CYTOClean – Harvester Cleaning Solution

Effective date: August 1, 2019

<u>Description</u>	<u>Part Number</u>
CYTOClean	554325

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