

KYTOPEN

The Future in Cell Discovery & Manufacturing

Flowfect[®]**Tx**

Instructions for Use



Table of Contents

1.	<i>Important User Information</i>	4
1.1	Support	4
2.	<i>Introduction</i>	4
3.	<i>Intended Use Statement</i>	5
4.	<i>Regulatory Information</i>	5
5.	<i>Glossary</i>	6
6.	<i>Technical Specifications</i>	6
6.1	Flowfect®Tx Control Unit Specifications	6
6.2	Environmental Specifications	6
6.3	Regional Specifications	7
7.	<i>General Operating Instructions</i>	8
7.1	Restrictions	8
7.2	Safety and Environmental Considerations – Please read carefully!	8
7.3	Set Up	9
7.4	Waste Disposal	10
7.5	Maintenance and Cleaning	10
8.	<i>Flowfect®Tx Components</i>	11
9.	<i>Workflow</i>	14
9.1	Run Setup	14
9.2	Installing the Flowfect® Cartridge	14
9.3	Performing a Run	18
9.4	Post Transfection	22
10.	<i>Troubleshooting</i>	23
10.1	Download Log Files (optional)	25
10.2	Upload new Flowfect® Profile (optional)	27
11.	<i>Document Change History</i>	31

1. Important User Information

The information in this Instructions for Use pertain to Flowfect®**Tx**. Instructions for use should be easily accessible to users of the Flowfect®**Tx**.

Flowfect® is a registered trademark of the Kytopen Corporation.



KYTOPEN
750 Main Street
Cambridge, MA 02139-4018
United States

1.1 Support

For support contact Kytopen:

KYTOPEN
750 Main Street
Cambridge, MA 02139-4018
United States
support@kytopen.com

+1 (617) 362-3058

<https://www.kytopen.com/>

2. Introduction

Kytopen is developing platforms to accelerate the discovery and manufacturing of cell therapies. Flowfect® technology offers a scalable, non-viral solution to deliver genetic payloads to cells in order to augment their functionality. The technology also enables continuous flow genetic manipulation of cells in a platform that can be easily automated and can be used to process both small and large sample volumes.

Kytopen's Flowfect® technology is a proprietary electromechanical technology used for transfection through a combination of the Flowfect®**Tx** and Flowfect® **Cartridge** consumable

3. Intended Use Statement

It is understood that this equipment is for Research Use Only (RUO).

Flowfect®**Tx** is indicated for high-efficiency intracellular delivery of genetic material to mammalian cells, including primary human T-cells, at manufacturing scale. Flowfect® combines continuous fluid flow with electric fields for high efficiency delivery of payloads such as mRNA, DNA, and CRISPR Cas9 RNP to primary cells. The system produces engineered cells (*via* cell transfection) which are then further processed and analyzed by the manufacturer prior to release of the material for therapeutic applications.

Flowfect®Tx is not intended for diagnosis, treatment, or prevention of disease.

For more information on our transformative technology please visit our website at www.kytopen.com.

4. Regulatory Information

Flowfect®**Tx** control unit is designed to conform with the following European Union Directives and industry Harmonized Standards; presently the design successfully passed the preliminary scan tests and certification testing are pending:

- IEC 61010-1:2010 -3rd Edition: Safety requirements or electrical equipment for measurement, control, and laboratory use Part 1: General requirements
- BS EN 61326-1:2013: Electrical Equipment for Measurement, Control and Laboratory Use – EMC Requirements
- Directive 2011/65/EU (Restriction of Hazardous Substances)
- Directive 2012/19/EU (Waste Electrical and Electronic Equipment)
- Directive 2014/30/EU (Electromagnetic Compatibility)
- Directive 2014/35/EU (Low Voltage equipment)

5. Glossary

casing	Contains Flowcell and tubing connections of the Flowfect® Cartridge
control unit	All reusable hardware enclosed in system case
flowcell	Proprietary Kytopen technology consisting of electrodes and a region for transfection
Flowfect® Buffer	Proprietary Kytopen transfection solution
Flowfect® Cartridge	Single use component consisting of tubing, casing, and Flowcell provided for individual operation (run) on Flowfect® Tx ; does not include buffer
Flowfect® Tx	All reusable and consumable hardware and software for the large volume platform
profile	Run-time file used by the software to define parameters used by Flowfect® Tx
software	Controls operation of the Flowfect® Tx ; manages routines, configuration files, and log files; includes Graphical User Interface (GUI)

6. Technical Specifications

6.1 Flowfect®**Tx** Control Unit Specifications

Weight	50lb/23kg
Dimensions	14 in (W), 25 in (D), 24 in (H) 35.5cm (W), 63.5cm (D) 61cm (H)

6.2 Environmental Specifications

<ul style="list-style-type: none"> • For indoor use only • Not for use in potentially explosive environment • Operating temperature range: 20°C-25°C • Relative humidity: 50%, ± 10% • Maximum Altitude: 2000m • Pollution Degree: 2
--

6.3 Regional Specifications

SKU	Mains supply	Fuses	Power cord/plug
KYT-2200-US	120VAC 60 Hz	1.5A, 250V, 5X20mm 2A, 250V, 5X20mm	Type B
KYT-2200-EU	230VAC 50 Hz	750mA, 250V, 5X20mm 1.2A, 250V, 5X20mm	CEE 7/7 (compatible with types E and F)
KYT-2200-UK	230VAC 50 Hz	750mA, 250V, 5X20mm 1.2A, 250V, 5X20mm	Type G
Australia	240VAC 50 Hz	750mA, 250V, 5X20mm 1.2A, 250V, 5X20mm	Type I (3 pins)
New Zealand	230VAC 50 Hz	750mA, 250V, 5X20mm 1.2A, 250V, 5X20mm	Type I (3 pins)
Korea	220VAC 60 Hz	750mA, 250V, 5X20mm 1.2A, 250V, 5X20mm	CEE 7/7 (compatible with type F)
Japan	100VAC 50/60Hz	1.5A, 250V, 5X20mm 2.5A, 250V, 5X20mm	Type B
Taiwan	110VAC 60Hz	1.5A, 250V, 5X20mm 2.5A, 250V, 5X20mm	Type B





7. General Operating Instructions





7.1 Restrictions

Flowfect®**Tx** is intended for Research Use Only (RUO).

7.2 Safety and Environmental Considerations – Please read carefully!



Symbol	Meaning
	<p style="text-align: center;">Follow the instructions for use.</p> <p>To ensure safe, reliable operation, always operate the Flowfect®Tx according to the instructions in this manual.</p> <p>The Flowfect®Tx is not intended to operate continuously but rather intermittently under the control of its software, as described in these user instructions.</p> <p>The equipment must be operated only by a trained operator skilled in the intended use.</p>
	<p style="text-align: center;">Flowfect®Tx is NOT for use in a potentially explosive environment.</p> <p>Always use the power cord provided with the Flowfect®Tx. Use of an inadequate, under-rated power cord may cause an unsafe condition.</p>
	<p style="text-align: center;">Warning-Pinch Point:</p> <p>To avoid personal injury while using the System:</p> <ul style="list-style-type: none"> • Take care while installing tubing; pinch points exist between the upper and lower section of the pump's door. • Do not activate the pump while the pump head is open. • Take care while installing the Flowfect® Cartridge onto the Flowfect®Tx control unit as a pinch point exist on the control unit.
	<p style="text-align: center;">Do NOT reuse-Single Use Only</p> <p>The Flowfect® Buffer and the Flowfect® Cartridge are designed for a single use; repeated use is not supported.</p> <p>Repeated use of the Flowfect® Cartridge may cause super-heating of residual fluid, resulting in a breach of fluid seal</p>

	integrity, permanent damage to the Flowfect® Tx control unit, increased risk of exposure to biohazard to the operator, or increased risk of electric shock to the operator.
	<p style="text-align: center;">Caution, risk of electric shock</p> <p>The control unit electrodes pose an electric shock risk. An electric shock could cause death or personal injury.</p>
	<p style="text-align: center;">Biohazard Waste</p> <p>After using the Flowfect® Buffer and the Flowfect® Cartridge dispose in a biohazard container and follow your laboratory's safety instructions for proper waste disposal practices.</p>
	<p style="text-align: center;">Do not use if package is damaged</p> <p>Do not use the Flowfect® Cartridge if the packaging is open or damaged. If the seal is broken, the Flowfect® Cartridge is no longer guaranteed to be sterile.</p>
	<p style="text-align: center;">Temperature limit</p> <p>Flowfect® Buffer shall be stored at 2 – 8°C and used at room temperature (20°C).</p>

7.3 Set Up

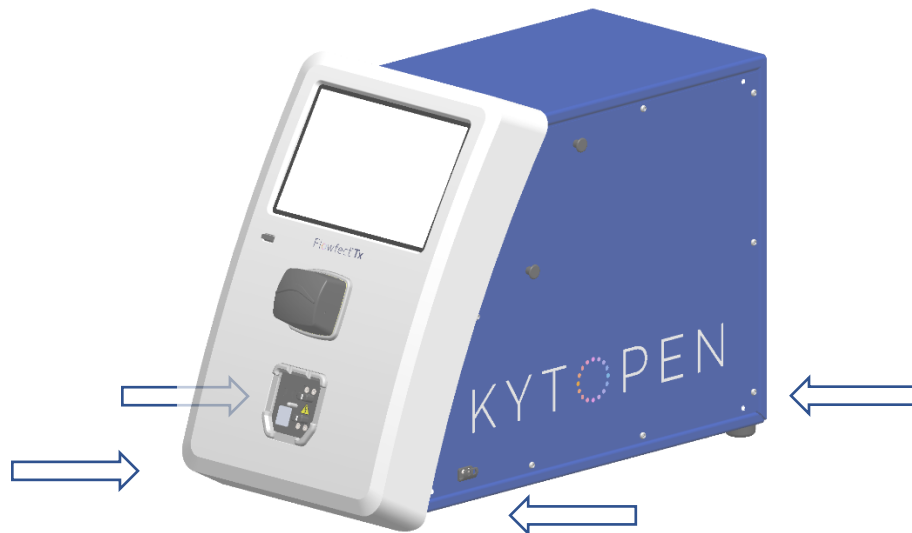
- 7.3.1 Flowfect®**Tx** installation is performed by Kytopen. Kytopen Field Service personnel are responsible for unboxing and installation of the Flowfect®**Tx**.
- 7.3.2 To turn on the control unit, press the power switch located on the back of the unit at the upper left corner. The Graphical User Interface (GUI) touchscreen will turn on, and then the system will take about 1 minute to boot up. It will then display the login screen on the GUI. The GUI is a touchscreen and users will be guided through the workflow outlined in Section 8.

7.3.3 When it is necessary to power off the unit, press the power switch located on the back of the unit at the upper left corner. Wait at least three (3) seconds before powering the Flowfect®**Tx** on again.

7.3.4 When it is necessary to move the control unit, care should be taken to lift the instrument *by two persons*, holding the instrument at the bottom of the unit at the locations indicated in Figure 1 below.



Figure 1: Hold the control unit at the bottom when moving it



7.4 Waste Disposal

Dispose all used Flowfect® **Cartridges** into a biohazard container. Refer to your laboratory's safety instructions regarding disposal practices.

7.5 Maintenance and Cleaning

Never open the Flowfect®**Tx** control unit. Do not change or modify the external or internal parts. The control unit will be serviced and maintained by Kytopen. All repairs and service are the responsibility of Kytopen.

Kytopen recommends cleaning the Flowfect®**Tx** control unit external surfaces using a non-abrasive cloth using the following cleaning agents:

- 70% alcohol (ethanol or isopropanol)
- 10% bleach
- LpH (Phenolic Disinfectant).
- Vesephene

The control unit should be cleaned between each run to ensure good working condition and limit cross contamination.

8. Flowfect®**Tx** Components

The Flowfect®**Tx** includes reusable and single use components. A diagram of the system with individual components is shown in Figure 2 and Figure 3 below.

Reusable Components:

- Control unit
- Power cord
- USB port protector (for use when cleaning the Flowfect®**Tx**)

Single Use Components required (quantity/amount):

- Flowfect® **Buffer** (5 - 500 mL)
- Flowfect® **Cartridge** (1)
- [**Note:** Flowfect® **Cartridge** is designed for single use; repeated use is not supported]

Materials not provided (these items must be supplied by the user):

1. USB drive (at least 16GB capacity recommended)

Figure 2: Flowfect[®]Tx control unit components



1. Graphical User Interface
2. USB port
3. Pump head
4. Electrode Contact Assembly
5. Power switch

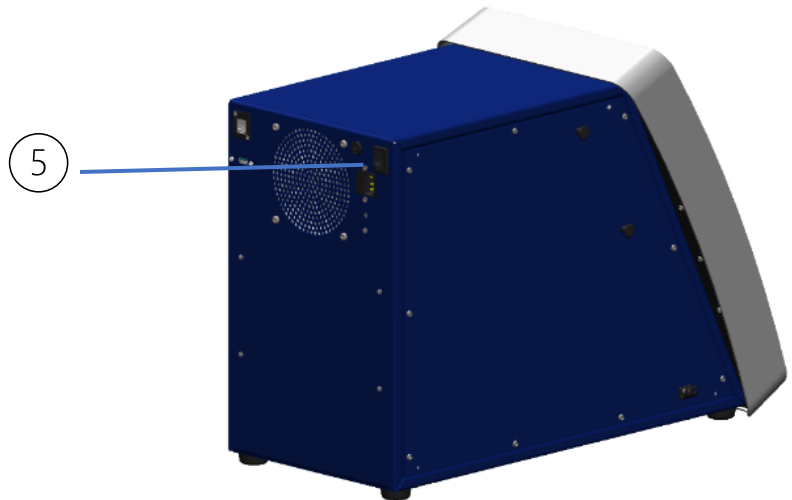
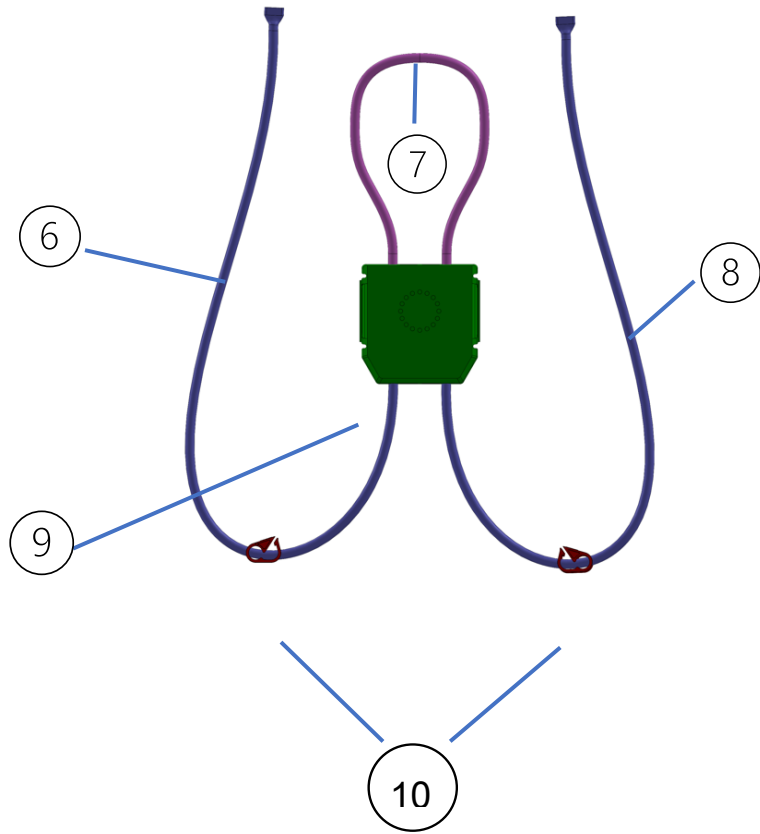


Figure 3: Flowfect® **Cartridge** components

- 6. Input tubing
- 7. Pump tubing
- 8. Output tubing
- 9. Casing
- 10. Tubing clamps



9. Workflow

9.1 Run Setup

- 9.1.1 Login using the provided username and password. If a username and password is not available, contact Kytopen.
- 9.1.2 Enter Sample ID, Volume (mL), and select the appropriate Flowfect® profile.
- 9.1.3 Optionally, enter the lot number(s) for the consumables and any notes for the run
- 9.1.4 Press **Save** to continue.

The screenshot shows the 'Perform a Run' interface. The top bar includes the Kytopen logo, a menu icon, the title 'Perform a Run', the time '6:23:14 AM 6/6/2022', and the user ID 'User ID: kytopen'. The left sidebar shows 'Workflow Status' and 'Setup' with options: Load, Process, Results, and Unload. The main area is titled 'Enter Sample Information' and contains the following fields:

- Sample ID:
- Volume (mL):
- Select Flowfect™ Profile:
 - BaselineFast
 - BaselineSlow
 - Gen1IQQFRA
 - Gen1IQQFRB
- Tubing Set Lot No.:
- Buffer Lot No.:
- Notes:

At the bottom, there is a 'Clear All' button and a 'Save >' button. The footer shows '© 2020-2022 Kytopen'.

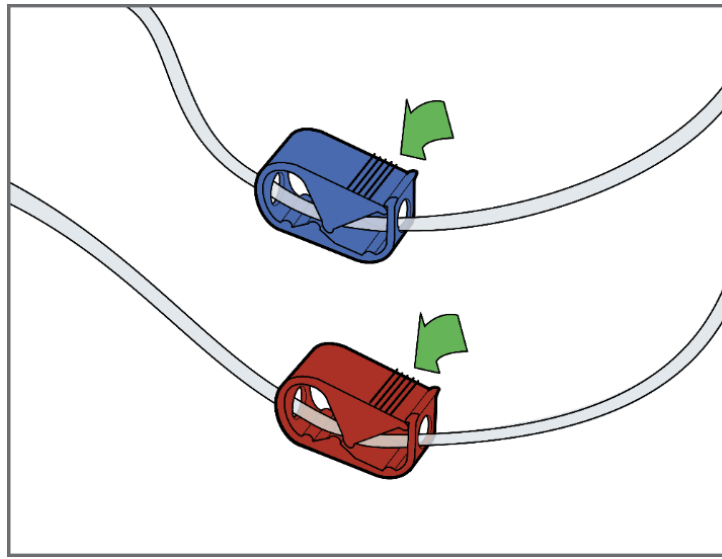
- 9.1.5 Confirm the details on the following screen, then press **Confirm** to proceed to prepare the run.

9.2 Installing the Flowfect® Cartridge

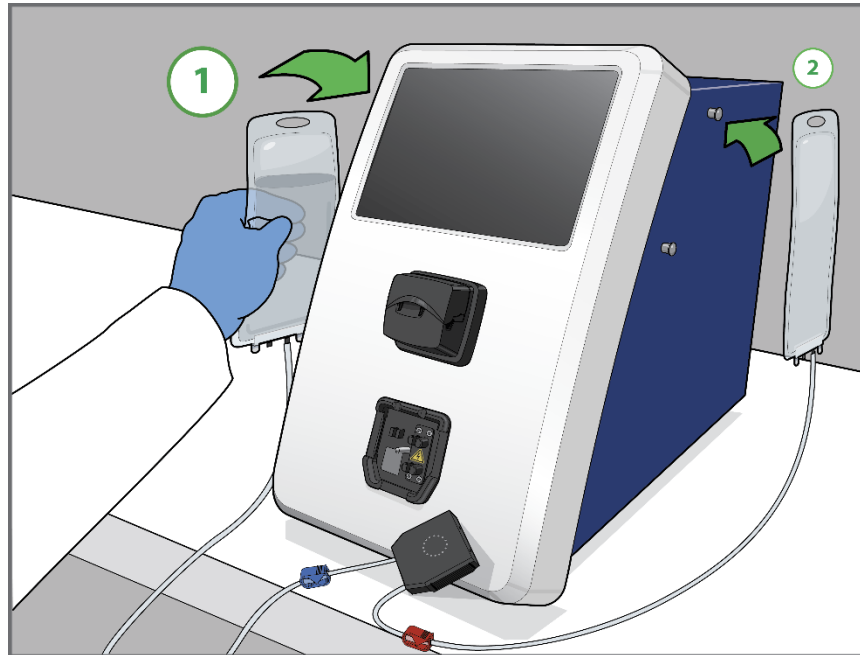
The software will guide the steps to load the Flowfect® **Cartridge** properly before starting the run. Follow the steps below and the on-screen prompts to ensure all components are prepared for the run.

9.2.1 Prior to opening the Flowfect® **Cartridge**, inspect the packaging to ensure it is properly sealed. If the seal is broken or compromised, use a new Flowfect® **Cartridge** and contact Kytopen.

9.2.2 Ensure clamps on the input and output tubing are closed (see below). This prevents unintended flow of liquid. Press **Confirm** on the GUI to proceed.

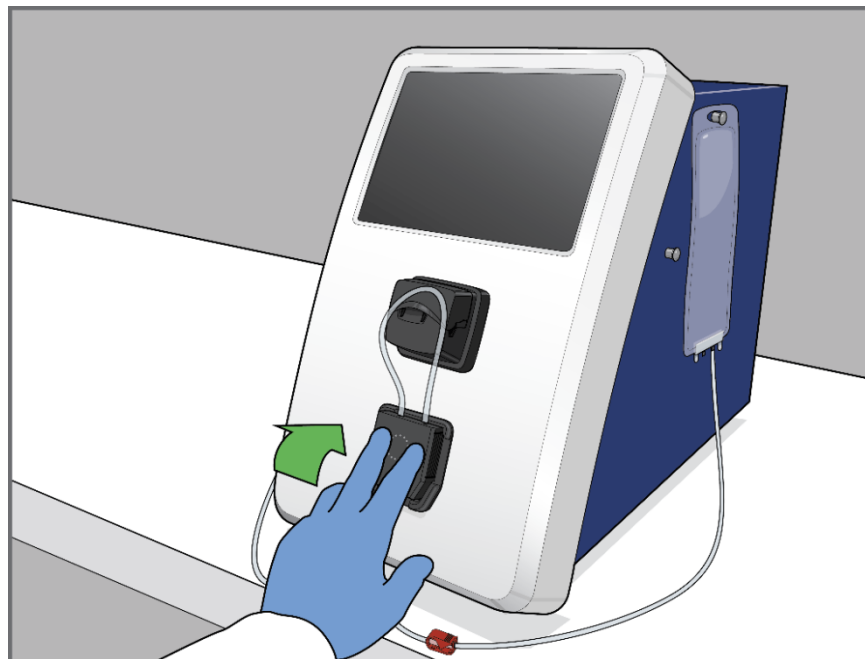


9.2.3 The input and output bags can be hung on the left-hand and right-hand sides of the control unit, respectively. Ensure the tubing is not twisted or restricted. Press **Confirm** to proceed.

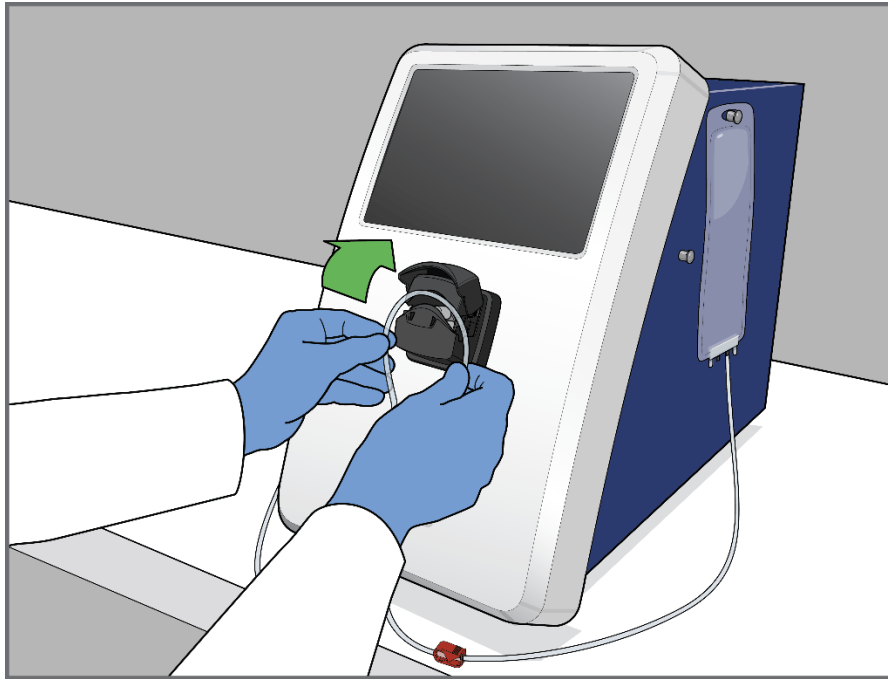


9.2.4 Mount the casing onto the control unit as shown below. An audible click indicates that the cartridge is fully seated. Press **Confirm** to proceed.

Note: If the software detects the casing is not properly seated, a warning message will appear on screen.

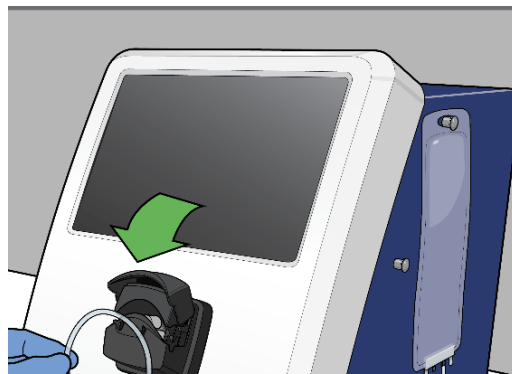


- 9.2.5 Open the pump head by pushing it upward. Install the pump tubing around the pump rollers. Be careful to ensure the tubing is centered on the pump rollers.

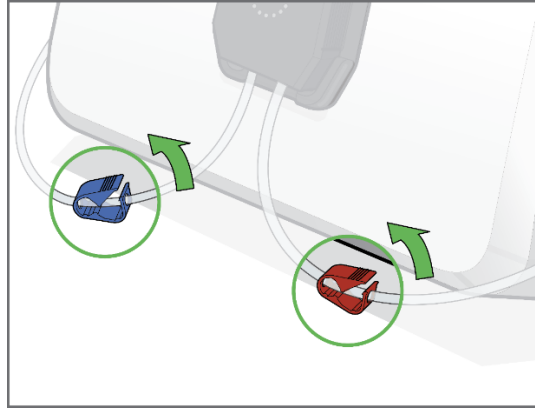


- 9.2.6 Close the pump head by lowering it. Press **Confirm** to proceed.

Note: If the software detects the pump head is not properly closed, a warning message will be displayed on screen.



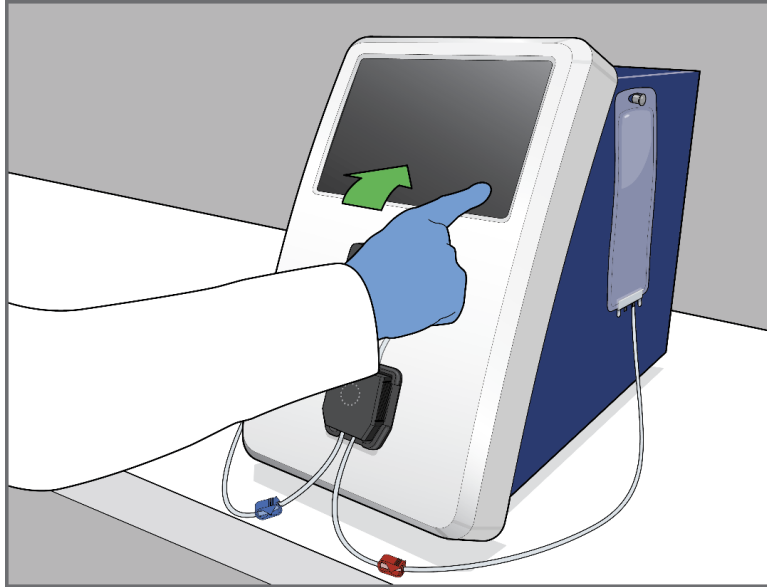
- 9.2.7 Open the tubing clamps to allow fluid flow.



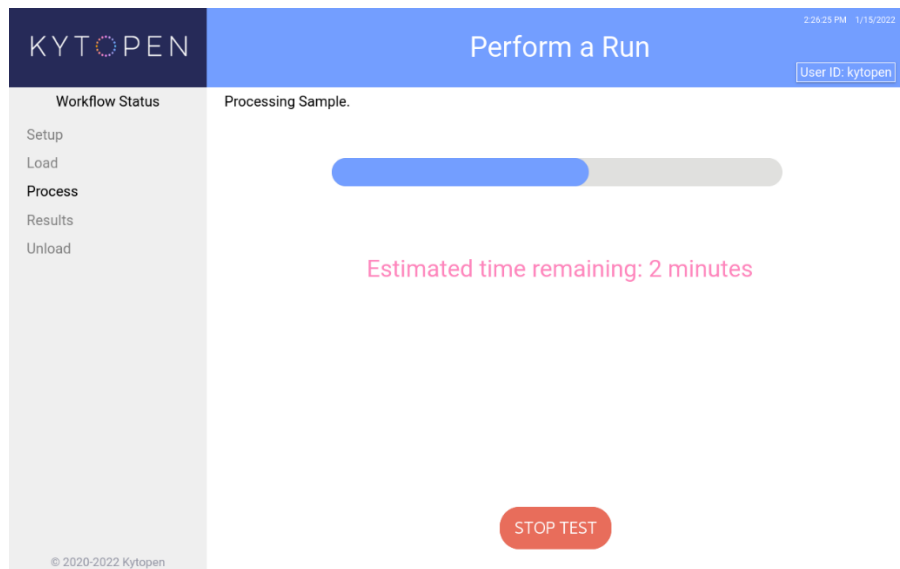
9.2.8 Verify that all setup steps are indicated as completed on GUI, under “Load” sidebar option.

9.3 Performing a Run

9.3.1 To begin Run, press **Start** on the control unit GUI.

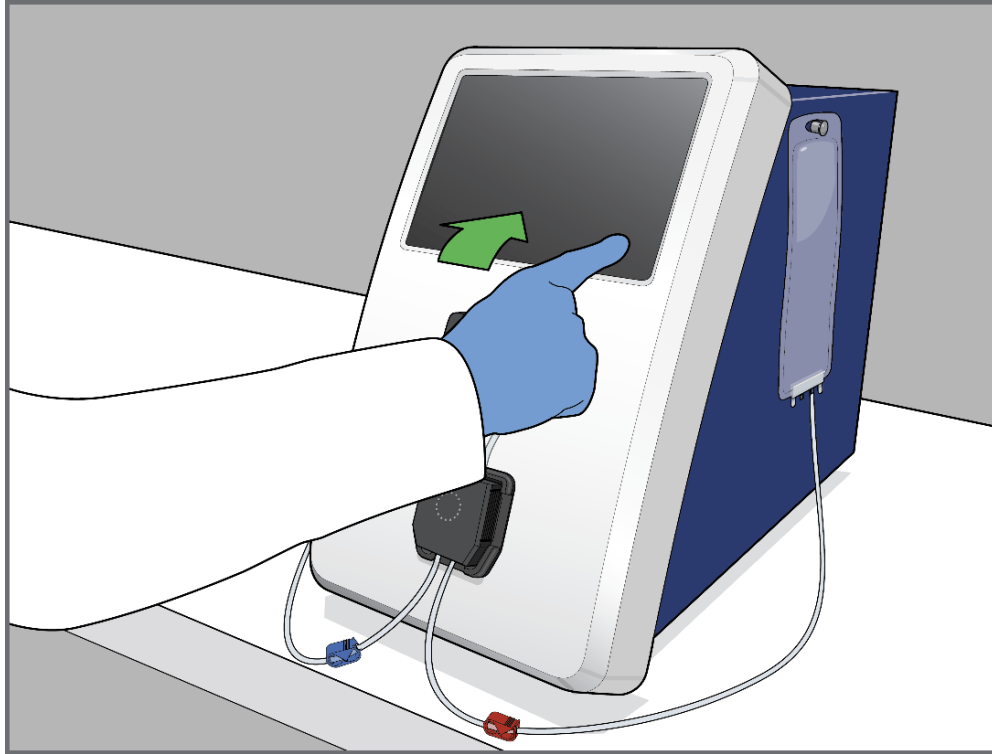


9.3.2 Once a Run has started the user will be presented with the page below.

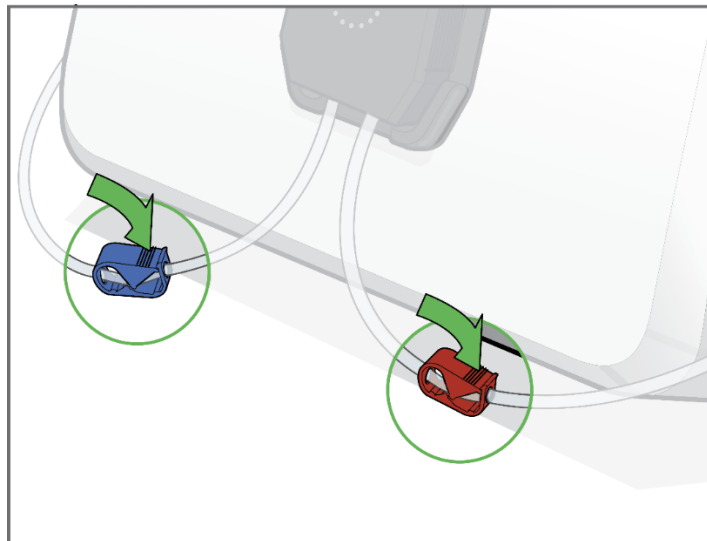


9.3.3 If for any reason, a Run must be stopped while still processing, press **Stop Test**. Confirm the stop by pressing **Yes** on the following screen.

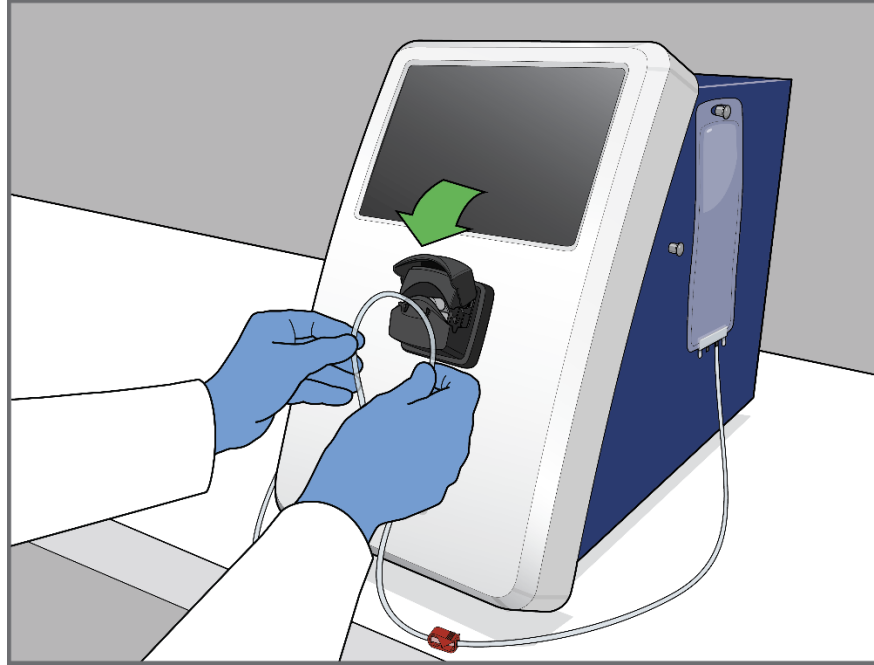
9.3.4 At end of run, confirm that no errors have occurred, and press **Run Complete** to complete the run. The software will then guide the removal of the Flowfect® **Cartridge**.



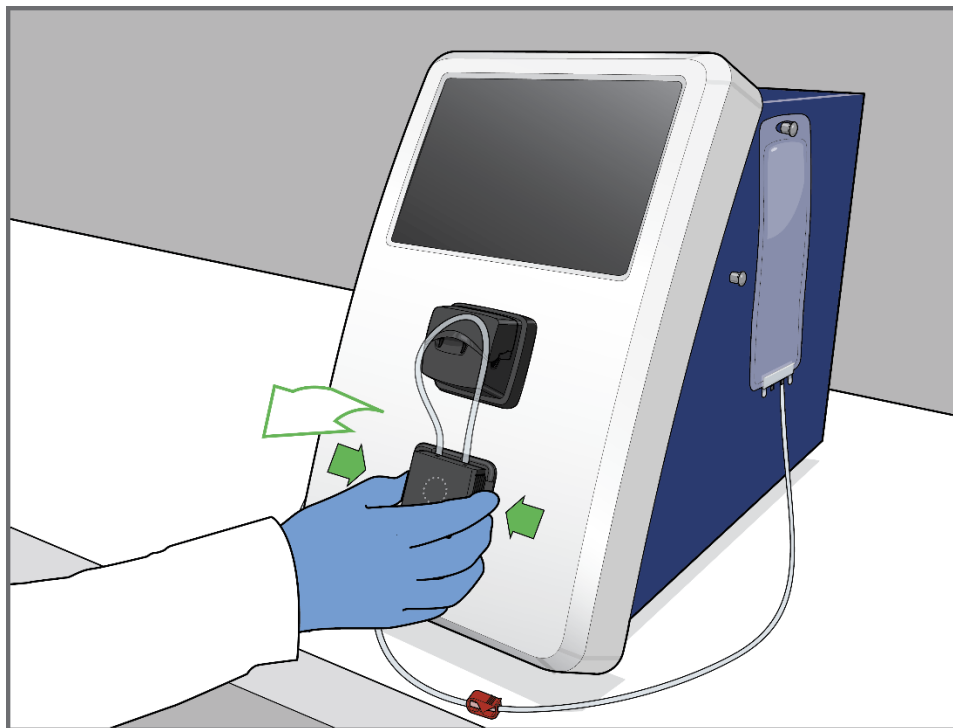
9.3.5 Close the clamps on completion of the run to prevent liquid flow. Press **Confirm** to proceed.



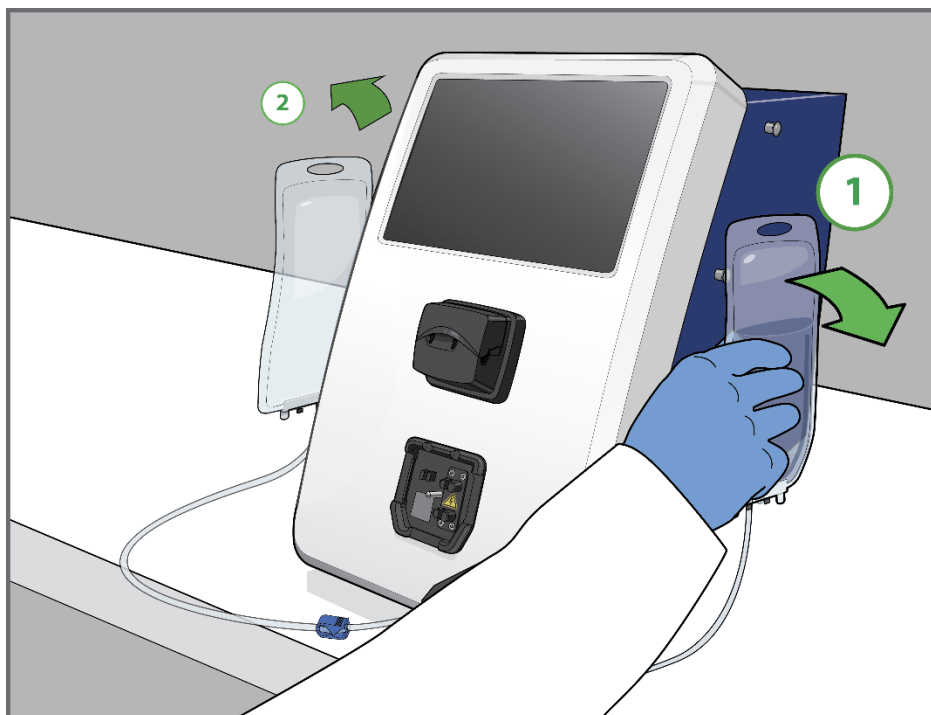
9.3.6 Open the pump cover and remove the tubing from the pump rollers. Press **Confirm** to proceed.



9.3.7 Remove the cartridge by pressing inward from both sides as shown in the image below. Press **Confirm** to proceed.



9.3.8 Remove the bags and discard Flowfect® **Cartridge**. Press **Confirm** to proceed.



9.3.9 (Optional) To perform a new run, press **Setup new Run**.

9.3.10 To log out, press the **User ID: <username>** button in the upper right-hand corner

9.4 Post Transfection

Kytopen recommends removing the output vessel from the Flowfect® **Cartridge** to continue your specified biological workflow. Discard used Flowfect® **Cartridge** after single use.

To conduct another run, begin at step [8.1](#), Run Setup.

10. Troubleshooting

The control unit is delivered with the ability to run all profiles provided by Kytopen. Any necessary software updates will be managed by Kytopen personnel.

The following table is to provide guidance using Kytopen's technology. If you need further help, please reach out to the Kytopen support team.

Error message on screen	Stops Run	Potential root cause(s)	Action to take
Run ended because no fluid flow was detected	Yes	Tube clips left on; Wrong buffer fluid used; Tubing was not placed properly in the pump; Input bag is empty (old consumable in use)	Confirm that the consumable is correctly loaded, tubing is connected to the pump head and all clamps have been removed
Run ended because the Flowcell was not detected	Yes	If at start of run - casing is not properly seated; If mid-run - casing seating was marginal, and casing popped out; Or user pulled casing off mid-run	Remove and re-seat the casing. Ensure both sides of the casing are pressed and clipped into the seat. If this error has occurred more than once, replace the cartridge with a new one
System error (pump). Do not continue use of the system. Contact Kytopen for support.	Yes	Pump motor driver has failed	Hardware failure – contact Kytopen
Run ended because the pump head was opened.	Yes	User opened the pump cover mid-run; Or pump detection switch failed mid-run	User must wait until instructed to open the pump; If this continues to happen on its own, stop using the unit and contact Kytopen
Run ended because signal to Flowcell was not as expected.	Yes	Wrong buffer fluid used; Pump clips not fully open – fluid restriction; Fluid leak caused internal short circuit	Replace the consumable and restart; If this continues to happen on subsequent runs, stop using the unit and contact Kytopen

Error message on screen	Stops Run	Potential root cause(s)	Action to take
Insufficient amplifier signal. Do not continue use of the system. Contact Kytopen for support.	Yes	Something is disconnected internally in the TX unit	HW failure – contact Kytopen per UI message
Run ended because signal to Flowcell could not be analyzed.	Yes	Experimental waveform is beyond system limits (would likely be seen only when using a non-validated waveform)	Contact Kytopen
Run ended because Stop button on screen was pressed.	Yes	User manually stopped the run	Depends on the reason for manual stop
A bubble was detected.	No	Microbubbles formed in the flowcell during the run A bubble formed due to incomplete wetting of the tubing and was eventually pushed into the flowcell	Small bubbles are unlikely to significantly impact biological results. Monitor any potential impact to biological results

Observed Failure	Potential root cause(s)	Action to take
Fluid leaking at tubing weld joint	Inadequate tube weld <ol style="list-style-type: none"> Mismatched dimensions of welded tubing Incompatible materials of welded tubing Tube welder incompatible with tubing type 	Manually stop the Run by pressing ‘Stop Test’ and confirm that you want to stop the run. Discard used Flowfect® Cartridge as a biohazard. Use sanitizing agent to sanitize surfaces that were exposed to the leaked fluid. <ol style="list-style-type: none"> Choose tubing that matches the dimensions of the Flowfect® Cartridge Choose tubing material that is compatible to be welded to the tubing

Observed Failure	Potential root cause(s)	Action to take
		material of the Flowfect® Cartridge 3. Choose tube welder compatible with the tubing material of the Flowfect® Cartridge
Fluid leaking inside of the casing of the Flowfect® Cartridge	Flowfect® Cartridge has already been used.	Manually stop the Run by pressing 'Stop Test' and confirm that you want to stop the run. Discard used Flowfect® Cartridge as a biohazard. Use sanitizing agent to sanitize surfaces that were exposed to the leaked fluid. Use an un-used Flowfect® Cartridge
Significant fluid is remaining in the Input reservoir at the end of a run, and no error was reported	If using a 2D bioprocessing bag as the Input reservoir, if the bag is not vertical, the fluid can be trapped in a corner and not reach the exit of the bag	Ensure the Input reservoir is vertical during the run. Ensure adequate length of input tubing such that the Input reservoir remains vertical during the run

10.1 Download Log Files (optional)

There are two types of logs available to download. The Run Log File provides basic functional logs for runs. This includes run start/stop times, errors, as well as subsystem activations and notifications. This log is unencrypted and intended for end-user evaluation.

The Detailed Log files contain more information and are intended for system evaluation and troubleshooting. This file is encrypted, and accessible by Kytopen personnel only.

10.1.1 To download Flowfect® log files insert a USB drive into the USB port located on the front of Flowfect®**Tx** control unit.

10.1.2 Open the menu by pressing the three horizontal lines in the upper left corner

10.1.3 Select **History** from the menu. Download buttons will be available for each log type. The download will be initiated immediately.

The screenshot displays two sequential screens from the KYTOPEN application. The top screen is the 'Menu' page, and the bottom screen is the 'History' page.

Menu Screen: The header includes the KYTOPEN logo, a hamburger menu icon, the title 'Menu', the date and time '9:21:57 AM 7/12/2022', and the user ID 'User ID: kytopen'. The main content area contains six menu items in a vertical list: 'Perform a Run', 'History', 'Audit Trail', 'Admin', 'Help', and 'Date and Time'.

History Screen: The header includes the KYTOPEN logo, a hamburger menu icon, the title 'History', the date and time '3:36:50 AM 6/7/2022', and the user ID 'User ID: kytopen'. Below the header is a table with the following data:

Date	User	Sample ID	Profile	Volume	Result
6/6/2022 06:23	kytopen	OQ-R1A	Gen1IQOQFRA	20	Seating fault
6/6/2022 06:22	kytopen	OQ-R1A	Gen1IQOQFRA	20	Seating fault
6/2/2022 04:15	kytopen	iq-r3b	Gen1IQOQFRB	20	User Software Stop
6/2/2022 04:12	kytopen	iq-r2b	Gen1IQOQFRB	20	User Software Stop
6/2/2022 04:08	kytopen	iq-r1b	Gen1IQOQFRB	20	User Software Stop
6/2/2022 04:02	kytopen	iq-r3a	Gen1IQOQFRA	20	User Software Stop
6/2/2022 03:59	kytopen	iq-r2a	Gen1IQOQFRA	20	User Software Stop
6/2/2022 03:54	kytopen	OQ-R1A	Gen1IQOQFRA	20	User Software Stop

Below the table is a pagination control showing '< 1 2 3 >' and 'Results: 1 - 8 of 20'. At the bottom of the screen, there are three buttons: '< Back', 'Download Detailed Logs', and 'Download Basic Logs'. The footer contains the copyright notice '© 2020-2022 Kytopen'.

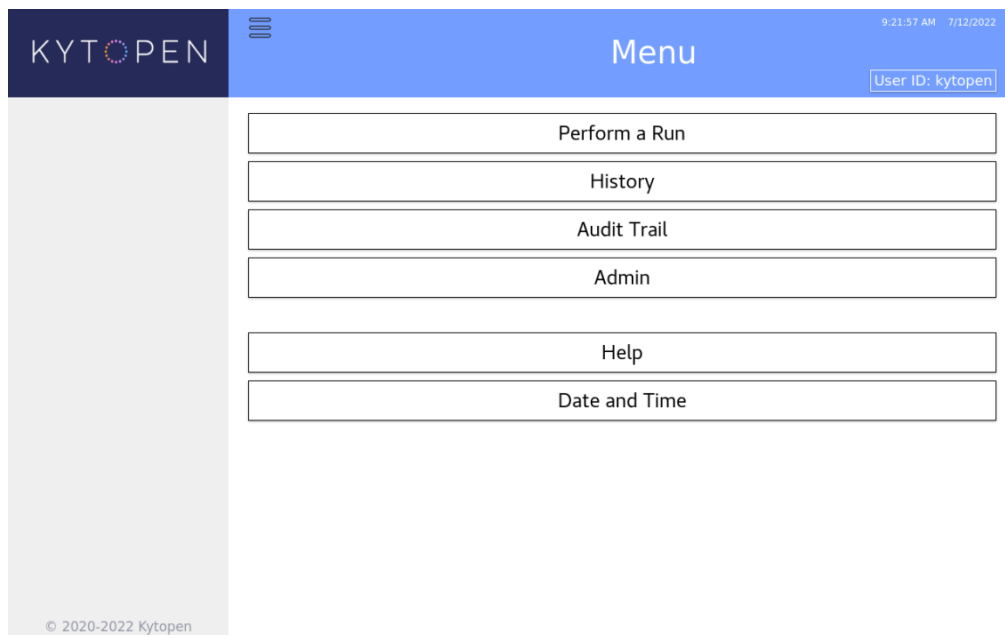
In the event of an error, Kytopen recommends sending the Detailed Log to Kytopen Support for troubleshooting help.

10.2 Upload new Flowfect® Profile (optional)

If a new Flowfect® profile is needed, Kytopen will provide the encrypted file for use. To upload the profile to the Flowfect®**Tx** instrument, follow the steps below:

10.2.1 Insert a USB drive with the new profile to the front port on the Flowfect®**Tx**. Ensure the profile is in the top-level folder of the USB drive.

10.2.2 Open the menu and select **Admin** and then **Settings Files**



KYTOPEN Admin 9:22:34 AM 7/12/2022

User ID: kytopen

- User Accounts
- Basic Run Logs
- Detailed Run Logs
- Lifetime Logs
- Audit Logs
- Settings Files
- Firmware Update
- Data Backup
- Data Restore

[< Back](#)

© 2020-2022 Kytopen

10.2.3 Click the **Upload Profile** button to upload the encrypted file. The software will automatically scan the USB drive for new Flowfect® profiles

KYTOPEN Settings Files 9:22:53 AM 7/12/2022

User ID: kytopen

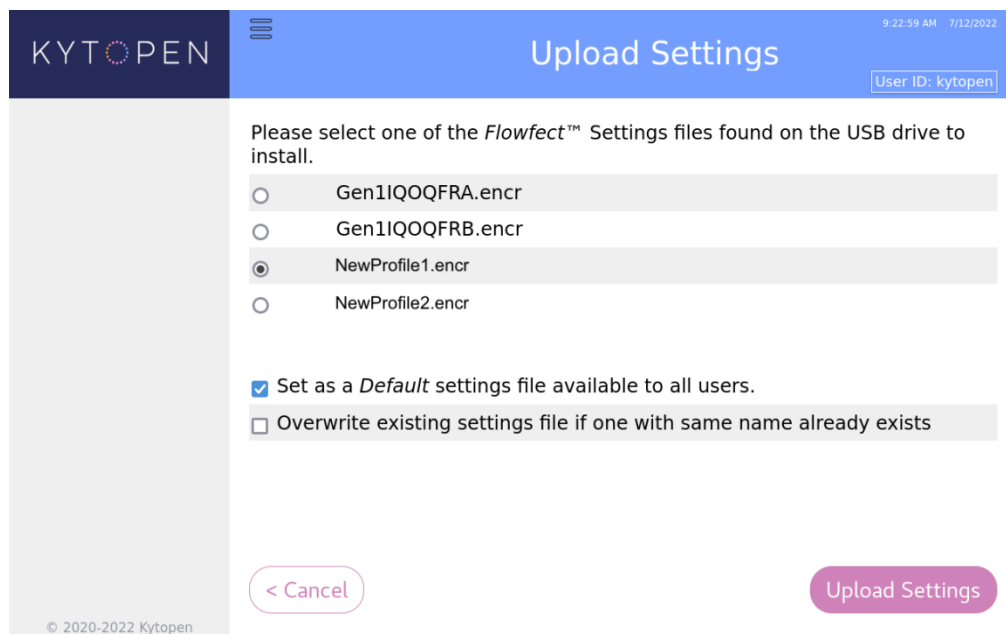
Profile	Description	Default
Collaboration 1	Primary collaboration profile	✓
Collaboration 2	Secondary collaboration profile	✓
BaselineFast	Testing cartridge baseline fast	✓
BaselineSlow	Testing cartridge baseline slow	✓
Gen1IQQFRA	Testing of representative settings at tw...	✓
Gen1IQQFRB	Testing of representative settings at tw...	✓

[<](#) **1** [2](#) [>](#)
 Results: 1 - 7 of 10

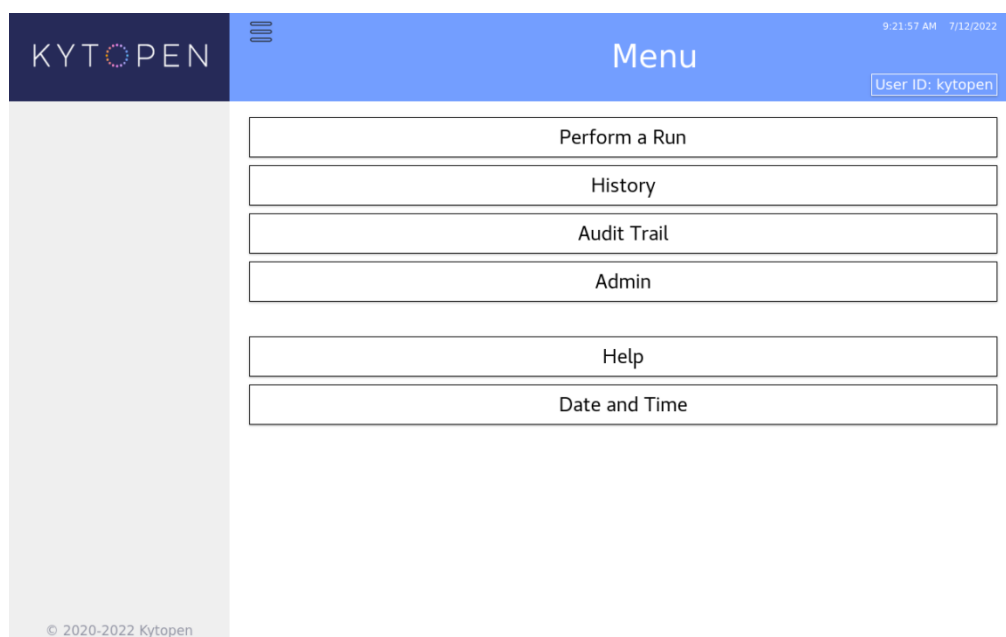
[< Back](#)
[Upload Profile](#)

© 2020-2022 Kytopen

10.2.4 Select the new profile using the software GUI and click **Upload Settings**. Ensure the box to make it a default profile is checked. The new Flowfect® profile will now be available for runs.



10.2.5 To perform a new run, open the menu and select **Perform a Run** to return to the run screen.



11. Document Change History

Version	Detailed Description of Change
0	Initial Release
1	<ul style="list-style-type: none"> • Updated Section 3, Intended Use statement, to more accurately describe the intended use of the system, as follows: replaced “The system produces engineered cells (via cell transfection) <u>for downstream processing and analysis by the manufacturer prior to delivery of the material for therapeutic applications</u>” with “The system produces engineered cells (via cell transfection) <u>which are then further processed and analyzed by the manufacturer prior to release of the material for therapeutic applications</u>”. • Removed the description of Flowfect®Tx from Section 3, as Section 3 is for Intended Use Statement only. • Added Pollution Degree in Section 5.2, Environmental Specifications. • Added required fields in Section 8.1, Set up to align with Quick Start Guide steps. • Added Section 9.2 Upload new Flowfect® Profile (optional).
2	<ul style="list-style-type: none"> • Updated company address in Section 1.1 from 501 Massachusetts Ave. to 750 Main Street, due to the facility relocation in August 2022.
3	<ul style="list-style-type: none"> • Updated Section 5.2 Environmental Specifications
4	<ul style="list-style-type: none"> • Updated cover page with new design. • Section 1: Moved Regulatory information to new section, Section 4. Added Kytopen as legal manufacturer with symbol. Added phone number and hyperlinked support email. • Section 2: Removed reference to Flowfect® Array. • Added new Section 4: Regulatory Information with applicable standards. • Section 5: formatting of glossary terms. • Section 6.3: Israel amp reference removed • Section 7.3.2: Additional warnings added to “Do NOT reuse-Single Use Only”, “Do not use if package is damaged” and “Temperature limit” • Section 8: Additional wording added on turning on control unit, USB port protector added, USB drive size recommendation added, and power button changed to power switch.

Version	Detailed Description of Change
	<ul style="list-style-type: none"> • Section 9 Workflow: Login step added, option to add lot numbers and notes for the run, confirmation steps added and general reformatting. Installing the Flowfect Cartridge Added notes that software will guide user on loading and removal the Flowfect® Cartridge, inspecting the Flowfect® Cartridge for seal integrity prior to use, confirmation steps added in workflow, note added to ensure the tubing is centered on pump rollers, note added that warning message will be displayed on screen if the software detects pump head is not properly closed, optional step to perform a new run and logout in • Section 10, Troubleshooting: Added “Ensure both sides of the casing are pressed and clipped into the seat” to Action to take for “Run ended because the Flowcell was not detected”. Changed “Potential root cause” of “Run ended because signal to Flowcell could not be analyzed” to “Experimental waveform is beyond system limits (would likely be seen only when using a non-validated waveform” Potential root causes and Actions to take added/updated for “A bubble was detected”, “Fluid leaking at tubing weld joint”, “Fluid leaking inside of the casing of the Flowfect® Cartridge” and “Significant fluid is remaining in the Input reservoir at the end of a run, and no error was reported” • Section 10.1 Download Log Files (optional): Removed FAT 32 formatted USB drive reference. Added steps 10.1.1, 10.1.2 and 10.1.3 for inserting USB drive and opening menu and selecting History on GUI, arrows removed from screenshots. • Flowfect®Tx – Quick Use Guide: Formatting changes.

Flowfect®Tx – Quick Use Guide

<p>Start-up</p>	<p>1 - Turn the Flowfect®Tx control unit power on (power switch on the back of unit)</p> <p>2 - Prepare & clean Flowfect®Tx control unit with 70% alcohol.</p>
<p>Enter Run Information</p>	<p>3 - Enter sample ID and run volume.</p> <p>4 - Select the Flowfect® profile.</p> <p>5 - Press Save to confirm run parameters.</p>
<p>Prepare Run Sample</p>	<p>6 - Ensure clamps on tubing are closed.</p> <p>7 - Fill output bag with recovery media</p> <p>8 - Cultivate cells and prepare payload; perform media exchange into Flowfect® Buffer with desired concentration.</p> <p>9 - Fill Input bag with cells, payload, and Flowfect® Buffer</p>
<p>Flowfect® Cartridge Loading</p>	<p>10 - Mount the Flowfect® Cartridge onto the control unit. An audible click indicates that the cartridge is fully seated.</p> <p>11 - Route tubing through pump and close pump head.</p> <p>12 - Open clamps.</p>
<p>Run and Disassembly</p>	<p>13 - Ensure clamps are open and tubing is unobstructed before running by pressing the Start button.</p> <p>14 - Process Sample</p> <p>15 - After run is complete, close clamps and disconnect (optionally using a heat-sealer) the output bag for processing.</p> <p>16 - To download log files, select the History option in the menu and select the log type for download.</p> <p>17 - Disassemble the rest of the Flowfect® Cartridge and dispose in a biohazard waste container.</p>