INCEPTUM™

OPEN CARTRIDGE USER MANUAL

VERSION 1.0

Q BIOTECH CORP CUSTOMER SUPPORT

For technical support please contact us at:

💻www.q-biotech.com

✉ info@q-biotech.com

NOTICE

All aspects of this instrument, including its design, functionality, and features, are subject to intellectual property protection. Unauthorized reproduction, distribution, or use of this instrument or any of its components is prohibited, violations will be prosecuted to the full extent of the Law.

Q Biotech Corp reserves the right to modify its products and services at any time. This user manual is subject to change without notice. Although this manual has been written to ensure accuracy, Q Biotech Corp assumes no liability for errors or omissions, or for any damages resulting from the use of this information. Q Biotech Corp assumes no liability for misuse of its products or software.

Tygon is a trademark of Norton Co., Windows is a trademark of Microsoft Corporation.

Inceptum™ is protected by US and international Patents Pending.

OVERVIEW

The *Inceptum™* system is a fully automated personal chromatography system for purification of proteins, RNA, and DNA.

The open cartridges provide all the necessary external connections to attach up to two columns and up to three buffer solutions, as well as a sample inlet. The sizes of the columns and volumes of buffer solutions are limited only by the chosen application protocol. *Inceptum™* provides a disposable, easy to change, fluid drive and measurement system for user-defined purification.

Open cartridges require manual setup or a custom batch protocol.

Features

- Provides easy to use, fully automatic, rapid DNA, RNA, and protein purification.
- Platform provides integrated data capture (UV and conductivity) and complete control of fluidics components.
- Gradient elution and exchange of proteins or nucleic acids into a convenient buffer during the purification process, in the same purification run.
- Utilizes chemistries such as affinity, ion exchange, Ni-NTA, and other water-based chemistries.
- Flow rate capabilities range between 1-40 mL/min.
- Isocratic or gradient flow with two inputs
- Design prevents cross-contamination.
- Compatible with external fraction collector
- Two column system
- Minimal setup time
- Low maintenance design with easy setup and minimal maintenance.
- Fully disposable fluidics path. No wetted components are inside of the instrument.

UNPACKING

When opening the box, remove cartridges from disposable bags and carefully inspect for any damage that may have occurred during shipment. Avoid damaging the Luer-locking valves on the front of the cartridge or the gold contact pads at the rear. If you suspect that there are any damaged or missing components, immediately contact Q-Biotech.

CAUTION

- Do not use organic solvents on or in the cartridge.
- Avoid using materials or heat that may cause the plastic to warp.
- Dropping cartridge may cause damage and result in defects.
- Do not freeze the cartridge.
- Refrain from overtightening Luer-Locks.
- Do not forcefully try to remove cartridge from *Inceptum™* which may cause damage to the valves.

OPERATION

1.1 Turn on the *Inceptum™* system and allow valves to reset.

1.2 Connect system to a Windows™ computer via the type-C USB port at the rear panel and run the *Inceptum™* system software.

1.3 Click on the "Connect to instrument" icon in the software toolbar. It will turn green, and you will see valve data populate the data log window.

1.4 Remove the cartridge from its packaging and check the valve orientation. The valves must be oriented as shown in Figure 1 to allow cartridge insertion and correct operation.

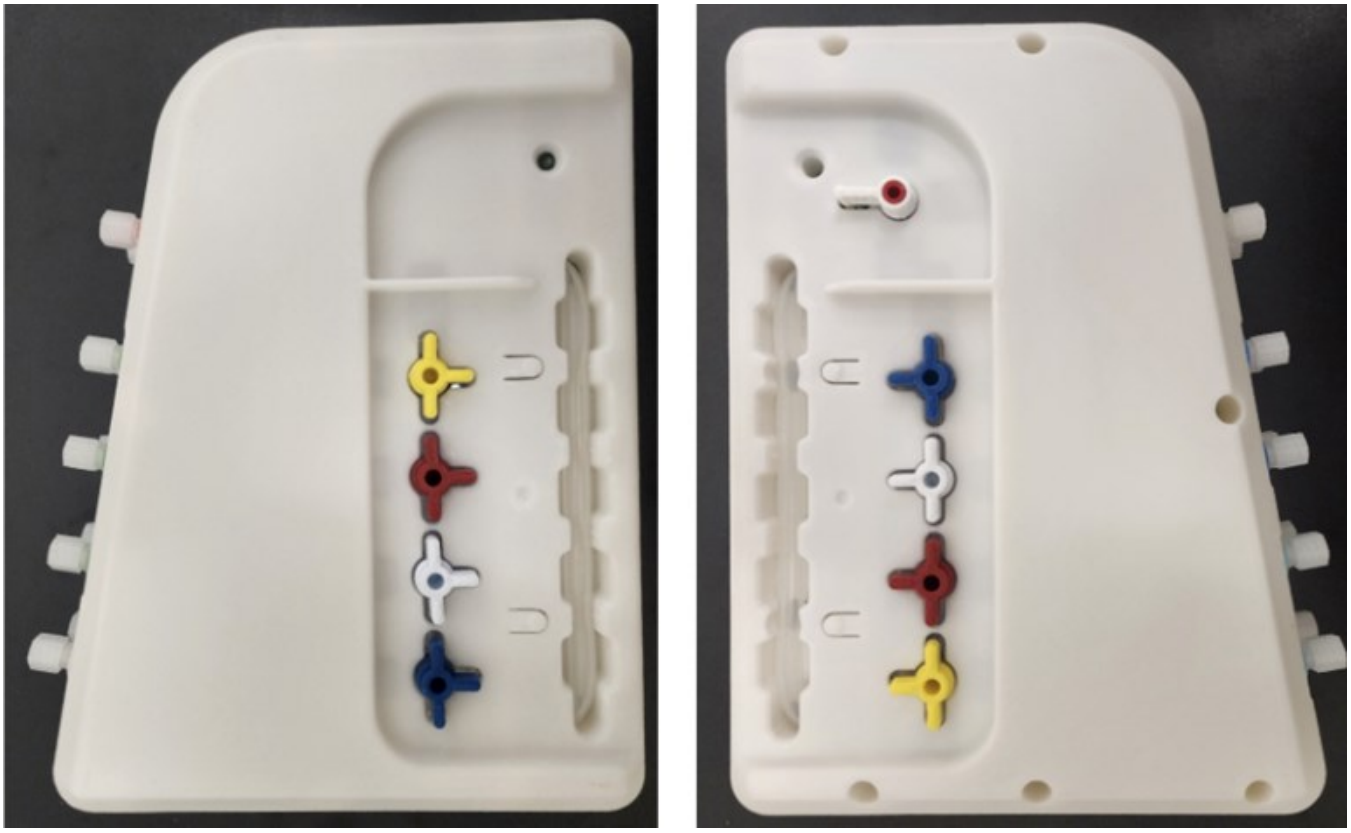

Figure 1. Proper Valve Orientation

1.5 Insert the open cartridge into the cartridge slot at the front of the Inceptum™ system ensuring the gold contact pads have good connection to the cartridge interface pins on the instrument. The cartridge LED indicator light will illuminate green on the instrument. DO NOT force the cartridge into the slot. The cartridge should insert readily into the slot.

a. If there is difficulty inserting the cartridge, visually verify that the slot is not obstructed. If the valve slots are misaligned, turn off the instrument, wait 5 seconds, and turn it back on. This will reset the valve slots to the correct orientation. Any previously entered batch settings will be preserved by the software.

1.6 Following insertion, the instrument will detect the cartridge, and the "cartridge" indicator LED will turn green. Autocalibration will begin. The autocalibration progress bar must reach 100% before the cartridge can be used. If the autocalibration fails, remove and re-insert the cartridge. If the autocalibration fails again, perform troubleshooting steps outlined below. If the problem persists, the cartridge may not be operational and could require replacement. Please contact customer service for replacement options.

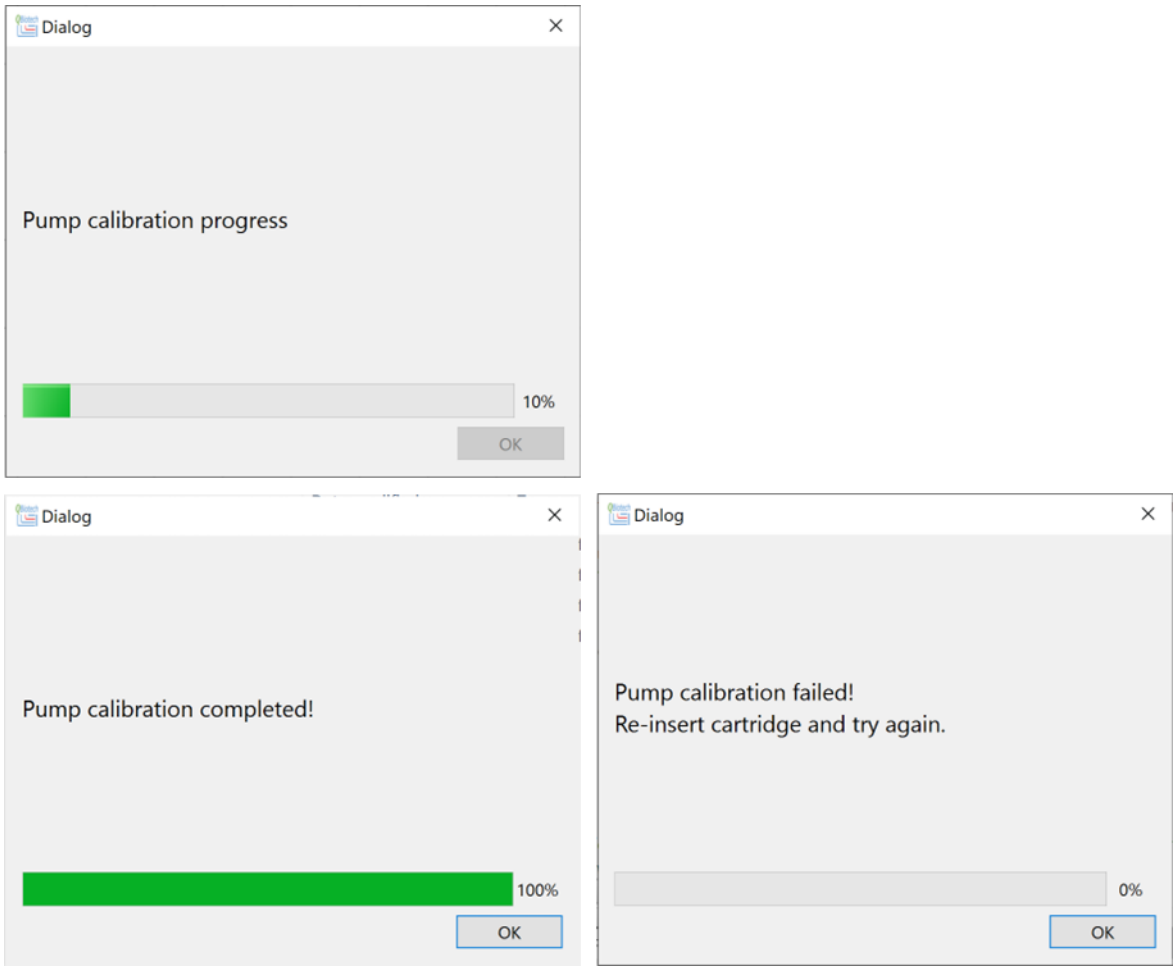

Figure 2. Autocalibration progress bar

1.7 You are now ready to attach necessary columns and tubing to run your batch protocols.

1.8 The Open cartridge is designed to allow full customization of solutions and batch protocols. Refer to the system view window in the *Inceptum™* software as well as the labels on the front face of the cartridge to assist with proper tubing configuration. The first number indicates the assigned valve, while the second number indicates the port utilized when that valve is at the numbered position. Buffer solutions, columns, and waste containers can be connected as required per your batch protocol.

1.9 There are 10 labeled points of attachment on the front face of the open cartridge. They are compatible with Luer-Lock or Luer slip connectors. Rotate counterclockwise to remove the locking cap and rotate clockwise to engage appropriate adapter.

1.10 When the batch protocol is finished, a notification will appear confirming completion. Make sure that the fluid connections are secured (either disconnected or pinched off) in order to prevent accidental fluid flow and mixing once the cartridge is disengaged. Once this is complete, click the 'eject cartridge' icon on the software toolbar. The instrument will automatically return the valves and pumps to their default positions. The instrument will disengage from the cartridge and the software will provide a prompt to remove the cartridge when ready.

1.11 Remove the cartridge and refrigerate for reuse as necessary. Do not leave the cartridge in the instrument when not in use.

MAINTENANCE AND TROUBLESHOOTING

- The cartridge should easily slide into the slot. If there is difficulty inserting the cartridge, visually verify that the cartridge slot is not obstructed, then turn off the instrument, wait 5 seconds, and turn it back on and attempt to reinsert the cartridge.
- If the cartridge will not come out of the slot after clicking the ‘eject cartridge’ icon, then turn off the instrument, wait 5 seconds, and turn it back on allowing the valves to reset and gently try again.
- If the valves on the cartridge are misaligned, manually adjust the valves as seen in Figure 1, turn off the instrument, wait 5 seconds, and turn it back on. Attempt reinsertion.
- If the cartridge requires cleaning, wipe the surface with a 70% ethanol solution. Do not spray the cartridge with the solution, wipe only.
- If the software will not connect to the instrument or if the is no data populating the data log window after connecting to the instrument, Click the “configure serial port for instrument connection” icon in the toolbar and ensure the port is open and reattempt connection. If the problem persists, remove and re-insert the USB-C cable making sure it is fully inserted. Windows will provide audible notification of removal and insertion of the cable. Ensure that the cable supports data transfer.

SPECIFICATIONS

Open Cartridge

Separation media	User provided, up to 2 columns, unlimited volume (external placement).
Buffer capacity	Unlimited, connection provided (Luer-Lock or slim-line sterile connector)
Wetted materials	Silicone, polyethylene, Tygon, quartz, gold, polycarbonate

WARRANTY

The *Inceptum™* Open Cartridge is warranted for six months against defects in materials and workmanship. If any defects should occur during the warranty period, Q Biotech Corp will repair or replace the cartridge at its discretion, without charge. However, the following defects are specifically excluded:

- Defects caused by improper operation
- Repair or modification performed by unauthorized personnel
- Defects caused by using damaged or modified cartridges
- Damage caused by deliberate or accidental misuse
- Damage caused by disaster
- Damage due to improper solvents or samples

ORDERING INFORMATION

cat #	Name
I1001	Inceptum™ Chromatography system
C1101	Inceptum™ Antibody purification cartridge
C1103	Inceptum™ Open cartridge, standard

Cartridges can be ordered online at https://q-biotech.com/