

IGG ANTIBODY PURIFICATION CARTRIDGE
USER MANUAL
VERSION 1.1

Q BIOTECH CORP CUSTOMER SUPPORT

For technical support please contact us at:

🌐 www.q-biotech.com

✉ info@q-biotech.com

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OVERVIEW

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

The antibody cartridges provide all the necessary internal attachments to two columns and two buffers, as well as a sample inlet and outlet for collection. *Inceptum™* provides a disposable, easy to change, fluid drive and measurement system for user-defined purification.

Antibody cartridges come with a preinstalled batch protocol ready for you to use.

Features

- Provides easy to use, fully automatic, rapid antibody purification.
- Platform provides integrated data capture (UV and conductivity), step elution of antibodies and buffer exchange into phosphate-buffered saline (PBS), in the same purification run.
- Utilizes protein G affinity capture and size exclusion.
- Design prevents cross-contamination.
- Compatible with external fraction collector. Fraction collector is not required but can be used.
- 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.

Manual Valve

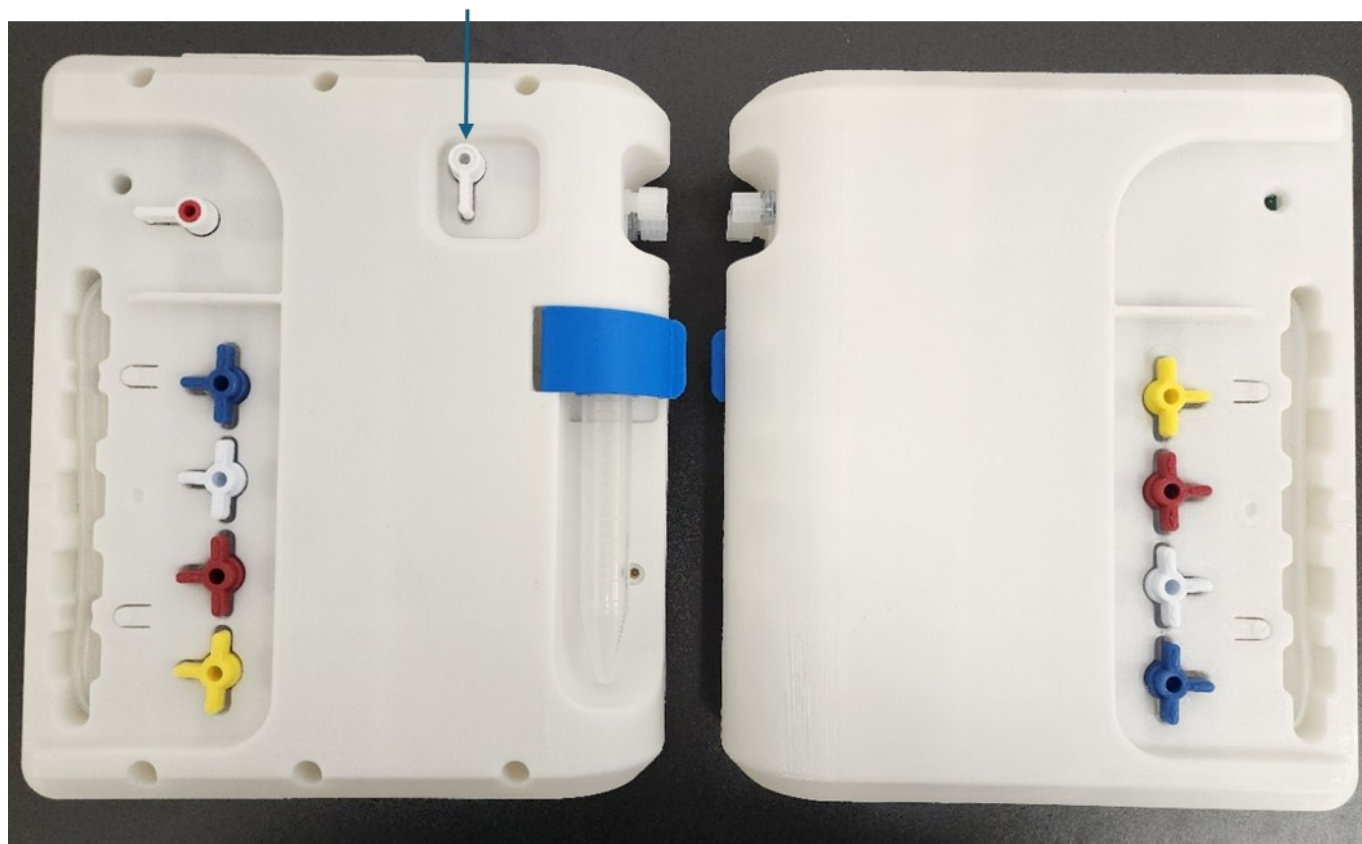


Figure 1. Proper Valve Orientation. Manual valve selects flow to the collection tube (direction as shown), or, to the outlet port (turn valve 90° counter-clockwise).

- 1.5 Insert the antibody 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.

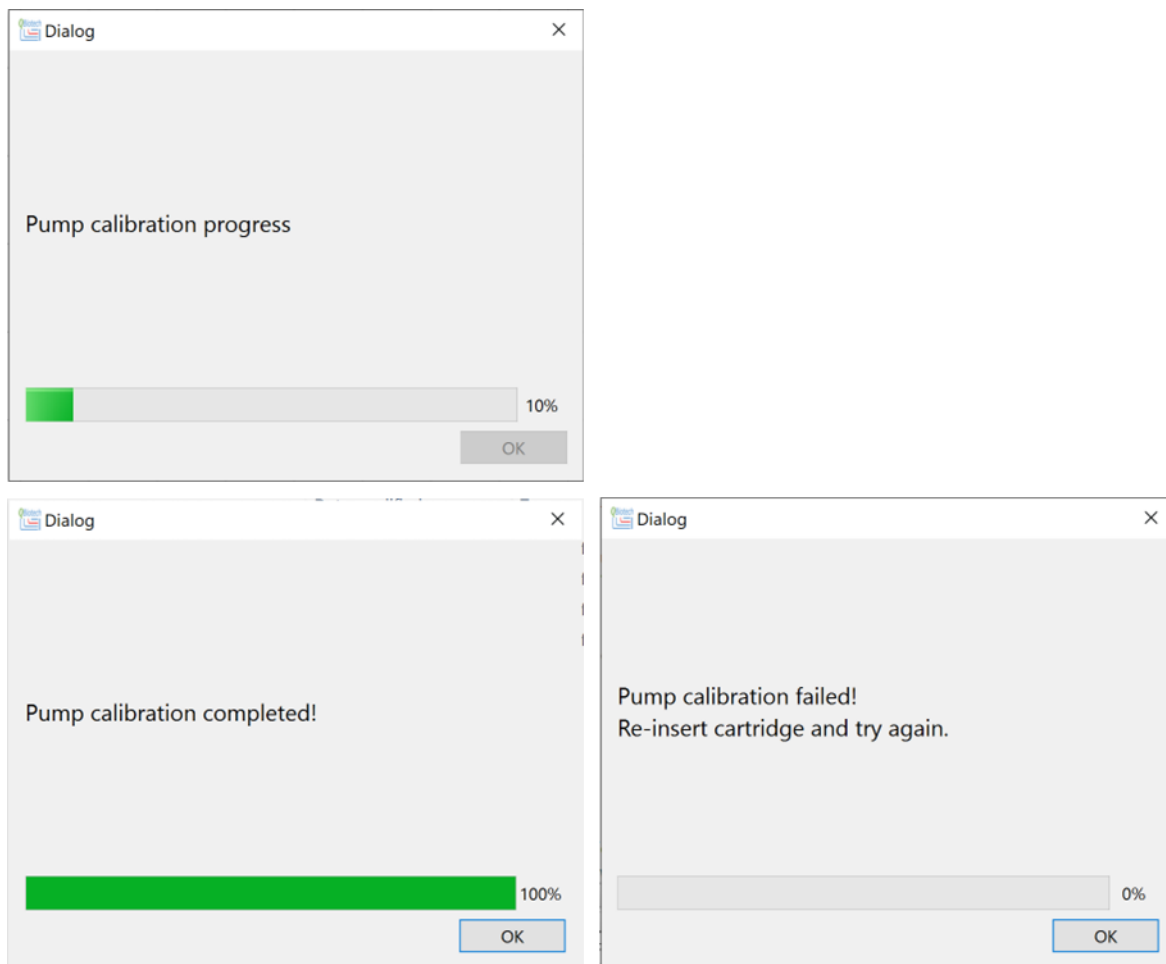


Figure 2. Autocalibration progress bar

- 1.7 You are now ready to attach necessary input and output collection to run your batch protocols.
- 1.8 The Antibody cartridge is designed to be easy to use with a premade batch protocol that will automatically load after the cartridge has been calibrated. This protocol works well for small sample volumes and is automatically set for a 1mL sample size.
- 1.9 If using larger sample volumes: The sample loading time will need to be adjusted to intake the full sample size. The wash time for larger volumes will also need to be adjusted by increasing the time to allow the OD to decrease down to the baseline.
- 1.10 There are 2 points of attachment on the front face of the antibody cartridge. They are compatible with Luer-Lock or Luer slip connectors. The connector on the right will be used to inject your sample using a syringe or an intake tube for samples larger than 5mL. Rotate the syringe clockwise onto the connector and inject your sample. While keeping the syringe pressed down all the way, rotate counterclockwise and remove.

- 1.11 The connector to the left can be used to connect to an optional fraction collector in addition to the collection tube located on the left side. The preferred collector can be chosen by using the manual valve on the upper left side of the cartridge.
- 1.12 Start new run and fill out purification info. The batch protocol will be pre-populated. You can select a different protocol if required.
- 1.13 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.



- 1.14 Remove the cartridge and refrigerate for reuse as necessary. Do not leave the cartridge in the instrument when not in use. The antibody cartridge can be used up to two times.
- 1.15 Warning: When removing the cartridge do not tilt to the side immediately, as cartridge might leak from the output. To prevent this, make sure to close off external output and turn manual valve to external output before removal.

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 there is no data populating the data log window after connecting to the instrument, 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. If the problem persists, click the "configure serial port for instrument connection" icon in the toolbar and ensure the port is correct and reattempt connection.

SPECIFICATIONS

Antibody Cartridge

Separation media	Manufacturer provided, internal 1ml Protein G column, 10 ml Desalting column.
Buffer capacity	Predetermined 240 mL PBS, pH7.4, 30ml glycine buffer, pH 2.5
Wetted materials	Silicone, polyethylene, Tygon, quartz, gold, polycarbonate

WARRANTY

The *Inceptum™* Antibody 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	<i>Inceptum™</i> Chromatography system
C1101	<i>Inceptum™</i> Antibody purification cartridge
C1103	<i>Inceptum™</i> Open cartridge, standard

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