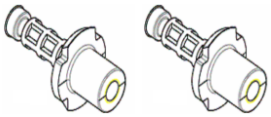
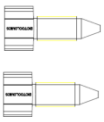
Proteus FliQ FPLC Column

Technical Datasheet

Protein Ark offers a range of empty low pressure chromatography columns. The column parts are made of polypropylene which shows excellent chemical resistance to the most commonly used reagents. Both end adaptors contain the standard 10-32 UNF connections compatible with common chromatography instruments (including AKTA FPLC's). The maximum operational pressure for a 1 ml FliQ column is up to 5 bar, while the maximum operational pressure for a 5 ml, 10 ml or 20 ml FliQ column is up to 3 bar.

Description of a Proteus FliQ 1 ml column

Column Part	Description
Column Body 	Internal diameter 6.2 mm. Volumetric marks at 0.1 ml intervals. Contains a locking mechanism at both ends. Quantity supplied: 1
End Adaptors 	Contains a 10-32 UNF female thread at one end and an O-ring and frit disc at the other end. This results in a minimum void volume. Quantity supplied: 2
Stop Plugs 	10-32 UNF male thread. Used to create a finger-tight seal for a packed column. Quantity supplied: 2

Proteus FliQ 1 ml column Parts

The following packing procedure can be used for general guidance. End-users may develop suitable packing protocols for their own resin.

Packing a Proteus FliQ 1 ml column:

- Insert one End Adaptor into one end of the Column Body. Ensure that the catch on the tab of the End Adaptor (characterized by a small engraved line on the top surface) is aligned with the open groove on the top of the Column Body. Push the End Adaptor until it is fully engaged with the shoulder of the Column Body.

- Screw a 10-32 male/luer female connector (not supplied) to the End Adaptor. Most FPLC users have these connectors which can also be purchased from Protein Ark (order code: GEN-10.32).

10.32 UNF male thread / Luer female connector. These connectors are used to connect syringes to the following 6.2 mm, 11 mm and 16 mm i.d. columns.

Use a syringe pre-filled with 1-2 ml of water to fill the column to a level of 0.2-0.3 ml.

- Fill the column with 50% resin slurry and suck the bed down with the syringe, taking care not to dry the resin bed. Repeat this step until the packed volume (under suction) reaches the desired level. ***Note: the desired packed volume depends on the type of resin. As a guide, the packed volume should be 1.2 - 1.4 ml for agarose-based spherical particles.***

- Keep the syringe in place. Pipette in water to fully fill the column. Carefully insert the top End Adaptor to avoid trapping air bubbles. Push it down slowly until the liquid level reaches the thread. Stop pushing and screw a Stop Plug finger tight to seal the top of the column. Then push the top End Adaptor down until it is fully engaged in the locking mechanism.

- Remove the 10-32 male/luer female connector and the syringe. Screw another Stop Plug finger tight into the bottom End Adaptor.*

Packing a Proteus FliQ 5ml, 10 ml or 20 ml column:

Unpacked

Packed

- Slightly dampen the double O-rings in each End Adaptor with storage buffer.

- Carefully insert one End Adaptor into one end of the Column Body. Avoid direct contact of the mesh with the column wall. Push the End Adaptor slowly until it is fully engaged in the Column Body.

- Screw a 10-32 male/luer female connector (not supplied) to the End Adaptor inserted into the Column Body. Most FPLC users have these connectors which can also be purchased from Protein Ark (order code: GEN-10.32). Keep the open side of the column upward and vertical. Hold the column by hand or with a stand.

- Use a 20 ml (5 and 10 ml column) or 50 ml (20 ml column) syringe pre-filled with 2-5 ml of water (or storage buffer) to fill the column to a level of 1-2 ml. This step purges the air out of the End Adaptor. Keep the syringe in place.

- Shake to mix the resin well. Pour or pipette the 50% resin slurry into the top of the Column Body. Suck the bed down with the syringe until the meniscus is 2 ml above the resin bed. The level of the packed resin will be clearly visible. The bed permeability decreases with the bed height increase. Note that 1 cm column corresponds to approximately 1 ml bed volume for FliQ 5 or 10 columns and a 2 ml bed volume for a FliQ 20 column. If the syringe is full with buffer, discharge the liquid and re-connect the syringe to the bottom End Adaptor. Be careful not to dry the bed during the packing process. Repeat this step until the packed volume (under suction) reaches the desired level.
  Note: the desired packed volume depends on the type of resin. As a guide, the packed volume should be 6 ml (with the FliQ 5 column), 12 ml (with the FliQ 10 column) and 24 ml (with the FliQ 20 column) for agarose-based spherical particles.

- Keep the syringe in place. Be sure that there is at least 5 ml additional capacity in the syringe. Pipette in water (or storage buffer) to the top off the column. Carefully insert the top End Adaptor to avoid trapping air bubbles. Push it down slowly until the two O-rings are inserted into the column body. Screw a Stop Plug finger tight to seal the top of the column. Push the top End Adaptor down until it is fully engaged in the column body.

- Remove both the 10-32 male thread/female luer connector and the syringe. Screw another Stop Plug finger tight into the bottom End Adaptor. The column is now primed for use or for short-term storage.*

*Depending up on the nature of individual resins, you may want to settle the resin bed further. Pre-fill a syringe with storage buffer and connect it to a 10-32 male/luer female connector. Purge out any air and the remove the top Stop Plug. Attach the pre-filled syringe to the top End Adaptor making sure that no air is trapped. Remove the bottom Stop Plug. Push through at least 5 bed volume of liquid under pressure (e.g as fast as possible) by hand. Seal the bottom with a Stop Plug. Disconnect the syringe and then seal the top of the column. This step can also be done by connecting the column to a chromatography system (such as AKTA). Pump through 10 CVs of equilibration buffer at a flow rate at least 30% higher than your operational flow rate. Always ensure that the back pressure is remains under 3 bar.

Specifications:

Maximum pressure 1 ml column:	5 bar (70 psi)
Maximum pressure 5, 10 & 20ml columns:	3 bar (42 psi)
pH stability:	2-14
Recommended flow rate:	0.5-2 ml/min
Chemical compatibility:	All common aqueous solutions: Denaturants e.g. 8 M Urea, 4 M guanidine hydrochloride and chaotropic salts.
1 ml column housing:	Medical grade polypropylene
5 ml, 10 ml& 20 ml column housing:	Acrylic
Bed dimensions of the 1 ml column:	33 x 6.2 mm
Bed dimensions of the 5 ml column:	52 x 11.0 mm
Bed dimensions of the 10 ml column:	104 x 11.0 mm
Bed dimensions of the 20 ml column:	100 x 16.0 mm
End Adaptors (polypropylene):	10-32 UNF female thread (1/16")
Stop plug:	10-32 UNF male thread (1/16")

Ordering Information

Product	Quantity	Order Code
Proteus 1 ml FliQ column	1 unit (1 column body, 2 End Adaptors, 2 Stop Plugs)	GEN-FliQ1
Proteus 5 ml FliQ column	1 unit (1 column body, 2 End Adaptors, 2 Stop Plugs)	GEN-FliQ5
Proteus 10 ml FliQ column	1 unit (1 column body, 2 End Adaptors, 2 Stop Plugs)	GEN-FliQ10
Proteus 20 ml FliQ column	1 unit (1 column body, 2 End Adaptors, 2 Stop Plugs)	GEN-FliQ20
10.32 packing connector	Luer/Thread connector for packing FliQ columns (1 pc)	GEN-10.32

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