

## PureCube Cartridges, 5 mL

Product	Catalog No.	Package size
PureCube Cartridge (1 x 5 mL)	16916	1 x 5 mL column
PureCube Cartridge (5 x 5 mL)	16917	5 x 5 mL columns

### Product Description

The PureCube Cartridge is an empty chromatography column that can be packed with FPLC-compatible chromatography matrices. The PureCube Cartridge is available in two sizes, with 1 mL and 5 mL bed volumes. Both column sizes exhibit excellent chemical resistance to most commonly used reagents and the end plugs include standard connections compatible with common chromatography instruments (such as ÄKTA). The void volume in each end plug is minimal, because the fluid is introduced through a narrow flow path (i.e. 1 mm hole). The 5 mL column has two layers of mesh (coarse and fine) at one end to give excellent flow distribution.

### Description of the Column Parts

#### Parts provided

1 x Column body (clear)	
2 x End Plug (white)	10-32 UNF female thread; 2 mesh layers and O-rings for sealing
2 x Stop Plug (black)	10-32 UNF female thread

#### To be supplied by user

10-32 male/luer female connector
Luer syringe (e.g. 20 mL volume)
Holder to fix column while packing (optional)
Chromatography resin (e.g. PureCube Agarose matrices)
Storage buffer: 20 mM sodium acetate, pH 6.5 with 20% (v/v) ethanol or similar

### Product Specifications

Parameter	PureCube Cartridge, 1 mL	PureCube Cartridge, 5 mL
Format	1 mL	5 mL
Dimensions	6.2 x 50	11 x 80
Column Body Material	Polypropylene	Acrylate
End Plug Material	Polypropylene	Polypropylene
Inlet/Outlet	10-32 UNF female thread	10-32 UNF female thread
pH Stability	2-14	2-14
Max. Flow Rate	6 mL/min	6 mL/min
Recommended Flow Rate**	0.5-2.0 mL/min	0.5-2.0 mL/min
Recommended Operational Pressure	Up to 5 bar (72 psi)	Up to 3 bar (42 psi)

\*\* Dynamic binding capacity strongly correlates with the flow rate and other parameters such as protein size and buffer conditions

## Shipping and Storage

Parameter	PureCube Cartridge, 1 mL	PureCube Cartridge, 5 mL
Long-term Stability	3 years after shipment	3 years after shipment
Shipment & Storage Temperature	Ambient temperature	Ambient temperature
Storage after packing	Dependent on packed resin	Dependent on packed resin

## Protocol: Packing of 5 mL PureCube Cartridges

1. Prepare storage buffer (min. 25 mL) and degas the buffer. **Note:** It is important to use degassed buffer instead of water to avoid trapping of air bubbles in the packed column.
2. The bottom end plug has been fully inserted inside the column body on delivery. Carefully remove the top end plug that is partially inserted in the column body. Avoid direct contact of the mesh with the column wall.
3. Fix the column in a holder (not supplied) with the inserted end plug facing downwards. **Note:** Using a holder makes packing easier and also allows packing of several columns in parallel.
4. Use a 10-32 male/luer female connector (not supplied) and connect it to the end plug. Fill a luer outlet syringe with storage buffer (ca. 10-15 mL) and connect it to the connector from the bottom of the column. Push the buffer back and forth a few times into the column from below, making sure to remove air bubbles. Leave a liquid level of about 2-3 cm height in the column.
5. Resuspend the resin suspension by shaking, and pipet a suitable volume into the column from the top. E.g. PureCube Agaroses are provided as 50% suspension, so for 5 mL bed volume, a total volume of 10 mL needs to be pipetted.
6. Suck the liquid out of the column from below into the syringe to make room for the resin. **Note:** Be careful not to dry the bed during the packing process.
7. Ensure that the liquid level stays high enough so that air bubbles are not trapped inside the column. If necessary, fill the liquid level up with storage buffer.
8. Keep the syringe in place. Make sure there is at least 5 mL space not filled in the syringe. Insert the top end plug carefully and push it down slowly. Make sure not to trap any air bubbles. Close the end plug with a stop plug.
9. Remove the syringe and connector from the bottom end of the column and close it with the second stop plug.
10. When connecting the column to a chromatography system (e.g. Äkta or BioLogic) pump liquid through the column at high speed (e.g. 3-5 ml/min to ensure that the particles are well settled in the bed and no air bubbles are trapped within.

**Note:** After a column is properly packed and used, it cannot be disassembled for another packing as the mesh in the end plug will be destroyed.

## Additional Information

For best results in purification of proteins carrying a His-, GST, Strep- or Rho tag, we recommend PureCube affinity chromatography matrices. Protein purification protocols, can be found on our webpage at [www.cube-biotech.com/protocols](http://www.cube-biotech.com/protocols). Also available are a range of ultrapure detergents and buffers for extraction and purification of proteins. See [www.cube-biotech.com/products](http://www.cube-biotech.com/products) for details.

**Disclaimer:** Our products are intended for molecular biology applications. These products are not intended for the diagnosis, prevention, or treatment of a disease.

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**Proteins are our passion.**