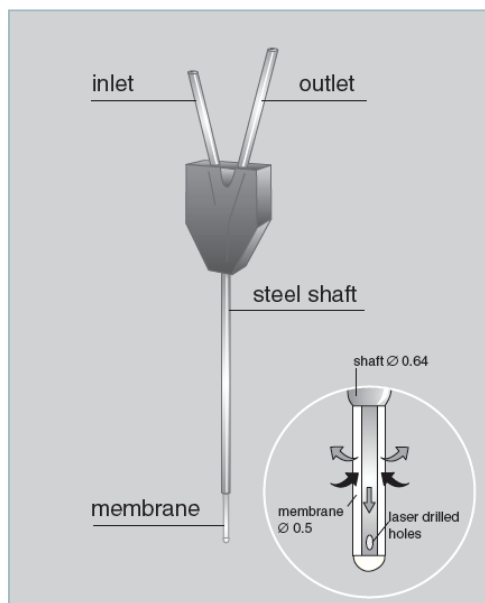


## CMA 12 High Cut-Off Microdialysis Probes User's Manual



### TECHNICAL INFORMATION

#### Membrane

Material	Polyethersulfone (PES)
Molecular Cut-Off	100,000 Daltons
Outer Diameter	0.5 mm
Length	1, 2, 3 and 4 mm

#### Probe Shaft


Material	Stainless-steel or Metal Free
Diameter	0.64 mm
Length	14 mm

#### Internal Volume

Inlet Internal Volume	Negligible
Outlet Internal Volume	3.0 µL

### Instructions for CMA 12 High Cut-Off Microdialysis Probe

1. Fill a microsyringe with perfusion fluid and mount it on the CMA Syringe Pump. The perfusion fluid must be clean, at room temperature and preferable degassed.
2. Run the pump to make sure that liquid leaves the tip of the syringe cannula.
3. Connect the desired length of tubing to the inlet and outlet of the probe. Remove the protection tube carefully. **Don't add longer outlet tubing than necessary to avoid ultrafiltration.** No longer than 500 mm. Short cannula = inlet, long cannula = outlet. Tubing Adapters and FEP tubing should be used for all connections. **To facilitate the handling of Tubing Adapters, they should be soaked in Ethanol for minimum 10 minutes.**
4. Attach the Microdialysis probe to a 11 & 12 Probe/Guide Clip on the CMA 130 *in vivo* Stand. Put the probe membrane into a vial filled with perfusion fluid.
5. Connect the inlet tubing of the probe to the syringe cannula by sliding the Tubing Adapter over the cannula.
6. Flush the probe with perfusion fluid at 8-10 µL/min for 3-4 min to wash out air. When flushing, the membrane may appear to be "sweating" which is due to ultrafiltration of fluid through the membrane. Knock on the shaft of the clip to help flush out the air. Lift up the clip with the probe from the vial and check for air bubbles inside the membrane with a microscope. Air bubbles occur as white spots.
7. Set the pump to the required perfusion flow, usually 1-2 µL/min and check for leaks. **Keep pump, probe and tubing at the same level on the bench to prevent ultrafiltration.** If the membrane still sweats it might still be air inside the probe. Repeat step 6. It might help to change flow direction in the probe by connect the inlet tubing to the outlet on the probe for a minute. Dextran MW 500 kDa 3% can be used to prevent ultrafiltration but be cautious if you are using Swivels as these can be blocked.
8. When the membrane is not sweating the system with the probe is ready for use.
9. During the experiment remember to check the fluid volume in the vials to be as calculated. **If a higher flow rate than 1-2 µL/min is required it is recommended to use a push-pull system to avoid ultrafiltration.**
10. When changing sample vials, remember to consider the internal volume in the system (see TECHNICAL INFORMATION). This causes a delay that must be calculated when using low perfusion rates and short sampling times.
11. After the experiment, put the Microdialysis probe in a vial filled with deionized water. Perfuse with deionized water to prevent salt crystal formation.
12. For further set up instructions, see CMA 120 System for Freely Moving Animals, User's Manual.

ORDER INFORMATION	Ref No.
CMA 12 High Cut-Off Probe, 1 mm, 3/pkg	CMA 8309661
CMA 12 High Cut-Off Probe, 2 mm, 3/pkg	CMA 8309662
CMA 12 High Cut-Off Probe, 3 mm, 3/pkg	CMA 8309663
CMA 12 High Cut-Off Probe, 4 mm, 3/pkg	CMA 8309664
CMA 12 High Cut-Off Probe Metal Free, 1 mm, 3/pkg	CMA 8011221
CMA 12 High Cut-Off Probe Metal Free, 2 mm, 3/pkg	CMA 8011222
CMA 12 High Cut-Off Probe Metal Free, 3 mm, 3/pkg	CMA 8011223
CMA 12 High Cut-Off Probe Metal Free, 4 mm, 3/pkg	CMA 8011224
CMA 12 Guide Cannula, 3/pkg	CMA 8309024
CMA 12 Guide Cannula, 30/pkg	CMA 8309025
Tubing Adapter, 10/pkg	CMA 3409500
FEP Tubing, 1 m, 1/pkg	CMA 3409501
FEP Tubing 1 m, 10/pkg	CMA 8409501
Tubing Connector, 3/pkg	CMA P000113
CMA 11 & 12 Probe Clip 	CMA 8309013
Perfusion Fluid CNS Dextran	CMA 8050151
Microsyringe 1 mL	CMA 8309020
Microsyringe 2.5 mL	CMA 8309021
Glass Ionomer Cement Kit	CMA 750027
Trephine Drill Bits	CMA 8011158
Anchor Screw Drill Bits	CMA 8003264
Anchor Screws	CMA 7431021
Anchor Screw Driver	CMA 8309637
CMA 130 In-Vitro Stand with CMA 11&12 Clips	CMA 8309102

## WARRANTY

The probes manufactured by CMA Microdialysis are warranted to be free from defects in material and workmanship for a period of two years from the manufacturing date if stored in the original package.  
Claims should be forwarded without delay to CMA Microdialysis or to your local distributor.

*The CMA 12 High Cut-Off Microdialysis Probes are not intended for use in humans. They are only suitable for laboratory research in animals.  
CMA Microdialysis only guarantees single usage of CMA 12 Microdialysis Probes.*



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