



## INSTRUCTIONS FOR USE



### OFM TUBING

### FOR LABORATORY USE



Instructions for product type:

OFM-PP2-XX-LB

OFM-PS3-XX

OFM-PL3-XX

OFM-PL3-XX-LB

OFM-T1-XX-LB

OFM-T2-XX-LB



**READ** Instructions for use before using the product! **ALWAYS** follow the warnings, cautions, and notes throughout this document. If you have questions regarding the safe or correct use of the product, please contact **your distributor**.

This document is available via download link. If required, a paper version can be requested from the distributor.

## 1 Intended Use

The OFM Tubing is used to operate OFM probes in tissue during preclinical studies / laboratory use.

**The investigator is responsible for the specific use of the products and compliance with all national regulations regarding the use of laboratory animals.**

For this purpose, a physiologically compatible liquid ('perfusate') is pumped out of the OFM Perfusate Bag through the OFM Catheter at a very low flow rate (0.1-10  $\mu\text{l}/\text{min}$ ) ('microperfusion'). Due to the open and membrane-free exchange surface, the perfusate can absorb practically any substances in the surrounding environment.

### CAUTION



**DO NOT** use on humans! This OFM Tubing has **NOT** been approved for use on humans!

**USE** OFM Tubing on laboratory animals or ex-vivo setups **ONLY**.

**DO NOT** use OFM Tubing on household pets and other non-laboratory animals.

**DO NOT** use inflammable fluids or any other dangerous liquid (e.g. acids, alkaline solutions, solvents, detergents, etc.) or hot fluids ( $>45^{\circ}\text{C}$ ) as perfusate! These liquids could damage the OFM Tubing.

OFM Tubing are available as:

- **Push-Pull Tubing** OFM-PP2-XX(-LB)
  - Combined Push-Pull Tubing for 1 OFM probe
  - One Luer for connection to OFM Bag (push side)
    - Predefined lengths for different use cases
    - Universal length of 1m for universal use, can be cut individually
- **dOFM 3-Channel Push Tubing** OFM-PS3-XX
  - Luer lock pre-mounted for use with OFM Perfusate Bag
  - For connection from OFM Perfusate Bag to pump head (push side)
  - For up to 3 OFM probes
- **dOFM 3-Channel Pull Tubing** OFM-PL3-XX(-LB)
  - For connection from OFM probe to sample collection (pull side)
  - For up to 3 OFM probes
  - Low-Bind version available
- **Push-Pull Tubing** OFM-T1-XX-LB
  - Low-Bind Tubing 0.25mm
- **Push-Pull Tubing** OFM-T2-XX-LB
  - Low-Bind Tubing 0.13mm

XX - stands for different lengths and diameters. For more details refer to price list.

LB - stands for OFM Tubing with low bind properties.

All OFM Tubing are Gamma-irradiated.



Figure 1: OFM-PP2-XX(-LB)  
Combined 1-Channel Push-Pull  
Tubing (predefined or universal  
length)



Figure 2: OFM-PS3-XX  
3-Channel Push Tubing



Figure 3: OFM-PL3-XX(-LB)  
3-Channel Pull Tubing



Figure 4: OFM-T1-XX-LB  
Push-Pull Tubing 0.25mm



Figure 5: OFM-T2-XX-LB  
Push-Pull Tubing 0.13mm

## 2 Directions for Use

### 2.1 Preparing OFM Tubing, OFM Bag und Microperfusion-Pump

This is a general instruction suitable for most OFM Tubing, for further details refer to the corresponding specific instructions for use:

1. Unpack OFM Tubing and OFM Perfusate Bag.
2. Connect Push-Part of OFM Tubing with the filled OFM Perfusate Bag. For more details, refer to the instructions for the use of OFM Perfusate Bag.
3. Remove the cover of the pump head.
4. Insert OFM Tubing into the pump head according to the instructions for use for OFM Microperfusion-Pump.
5. Insert OFM Tubing analogue into second pump head.
6. Reattach cover of the pump heads. Do not jam the OFM Tubing between pump and cover.

## 2.2 Connecting up to 3 Linear OFM Probes

Connect and operate Linear OFM Probes as shown in Figure 6:

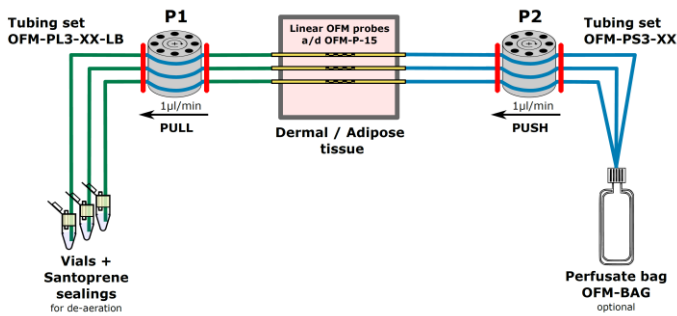


Figure 6: 3-Channel Push-Pull-Sample-Mode

1. Implant Linear OFM Probes according to the specific instructions for use.
2. Connect inlet of the Linear OFM Probe to the PUSH-Tubing.
3. Flush inflow (e.g. 5-10µl/min) while slowly removing the guide wire.
4. Immediately connect outlet of the Linear OFM Probe via PULL-Tubing to sample container.
5. Flush whole system (e.g. 5-10µl/min).
6. Apply strain relief to the tubing to avoid unintentional slipping or snagging.
7. Now the OFM System is ready for sampling.

## 2.3 Connecting the cOFM Probe

cOFM Probe can be operated using Microperfusion-Pump and Tubing (Figure 7) or syringes (Figure 8):

Connect and operate cOFM Probe as follows:

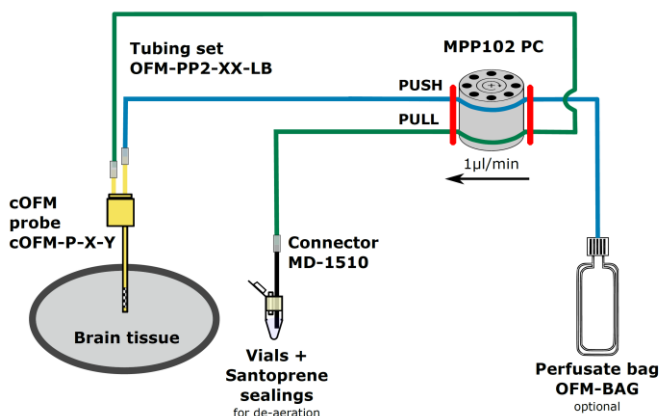


Figure 7: cOFM Probe connected to Microperfusion-Pump via Combined 1-Channel Push-Pull Tubing.

Setup according to Figure 7:

1. Connect the Luer of the OFM tubing (OFM-T1-XX-LB or OFM-T2-XX-LB) to the filled OFM Perfusate Bag.
2. Connect the Push channel to the inlet of the Sampling Insert.
3. Connect outlet of the Sampling Insert to the Pull channel and to the sample container or an optional fraction collector (not shown here).
4. Flush all tubing of the Sampling Insert with a higher flow rate, e.g. 5 $\mu$ l/min.
5. Replace the Healing Dummy with the Sampling Insert. For more details, refer to the manual of the cOFM Probe.
6. Perform a run-in phase at sampling flow rate for one hour, before starting sampling.
7. Apply strain relief to the tubing to avoid unintentional slipping or snagging.

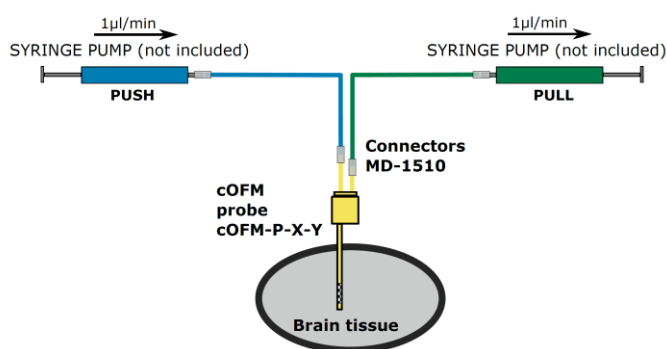


Figure 8: cOFM Probe connected to syringe pumps.

Setup according to Figure 8:

1. Connect the Push channel to the inlet of the Sampling Insert and the PUSH syringe mounted within a syringe pump.
2. Connect outlet of the Sampling Insert to the Pull channel and the PULL syringe mounted within a syringe pump or an optional fraction collector (not shown here).
3. Flush all tubing of the Sampling Insert with a higher flow rate, e.g. 5 $\mu$ l/min.
4. Replace the Healing Dummy with the Sampling Insert. For more details, refer to the manual of the cOFM Probe.
5. Perform a run-in phase at sampling flow rate for one hour before starting sampling.
6. Apply strain relief to the tubing to avoid unintentional slipping or snagging.

## 2.4 Removing OFM Tubing (Step-by-Step)

1. Stop Pump(s).
2. Remove the strain relief.
3. Disconnect OFM Tubing.



### BIOHAZARD

Used and removed OFM Tubing are biohazardous and must be disposed accordingly!

### 3 Combination with Other Products

For optimal performance, operate the OFM Tubing with manufacturer-approved accessories like:

- Microperfusion-Pump MPP102 PC
- Linear a/d OFM Probe (preclinical)
- Concentric cOFM Probe (preclinical)
- OFM Perfusate Bag (preclinical)



#### CAUTION

When using above-listed products with the OFM Tubing, ALWAYS observe the Instructions for Use of the respective product!



**JOANNEUM RESEARCH** Forschungsgesellschaft m.b.H.  
HEALTH - INSTITUTE FOR BIOMEDICINE AND HEALTH SCIENCES  
Leonhardstraße 59 / Neue Stiftingtalstraße 2  
8010 Graz  
Austria

Phone: +43 316 876-4000

Fax: +43 316 8769-4000

E-mail: [ofm@joanneum.at](mailto:ofm@joanneum.at)

Web: [www.joanneum.at/health](http://www.joanneum.at/health)

[www.openflowmicroperfusion.com](http://www.openflowmicroperfusion.com)

Doc. No.: UM\_OFM-Tubing\_1-0

Date: 15-NOV-2021