

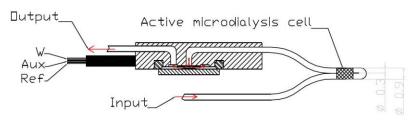
MICRODIALYSIS CATHETER FOR "IN VITRO" MEASUREMENT

Type: MDC1

Description

The microflow cell FC2 (BVT Technologies, a.s.) connected with microdialvsis catheter PME011 (Probe Ltd., Scientific, UK) enables continuous monitoring lowof molecular substances in circulating blood without withdrawing blood from the tested





body. (The device is not approved for human use as a whole; the microdialysis catheter has the approval for medical use). The device can be also used for measurement in fermentation reactors, in subcutaneous tissues or in special scientific apparatuses. The main advantage of this catheter is in a special membrane which produces a "plasma-like" or "prefiltered sample" sample without the need for blood centrifugation or deproteinization. MDC1 makes online monitoring of different blood parameters (biochemical compounds actual concentration or kinetics of enzymatic reactions) possible. The device is also convenient for pharmacological studies. The device can be used only for non human applications.

Technical parameters

Size	MicroEye tip (protective sheath) cross-section diameter c.0.7 x 0.5 mm		
Materials	Medical grade polyamide, ABS hub		
Inflow tubing	0.28 x 0.95, 410 mm (ID x OD, length)		
Outflow tubing	0.28 x 0.95, 210 mm (ID x OD, length)		
Inflow tube fitting	Standard luer-lock connector		
Blood catheter hub	Male luer fitting with a locking luer-nut to engage and seal catheter		
Usage time	Up to 48 hours "in vivo" more than 100 hours " in vitro"		
Dialysis lag-time	Dependent on perfusion rate and method of detection. Typically less than 5 minutes		



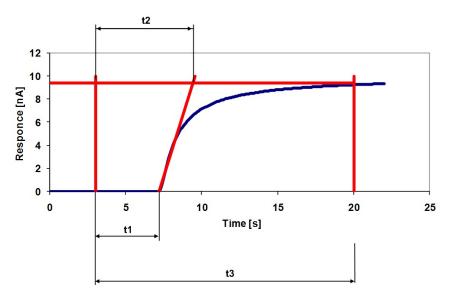
The range of substances that can be monitored using this catheter

- Electrolytes (such as potassium, magnesium etc.)
- metabolites 2) Energy (glucose, lactate, pyruvate, etc.)
- 3) Amino acids (glutamate, GABA, etc.) Hormones and neurotransmitters (dopamine, serotonin, etc.)
- 4) Inflammatory mediators and growth factors (cytokines, etc.)
- their 5) Drugs and metabolites (unbound "free fractions and /or

Technical parameters

Delays:

t1 = the delay of a response after tested compound concentration change t2 = the time in which the system would reach the stable state t3 = the estimation of the real stable state time



Potential use

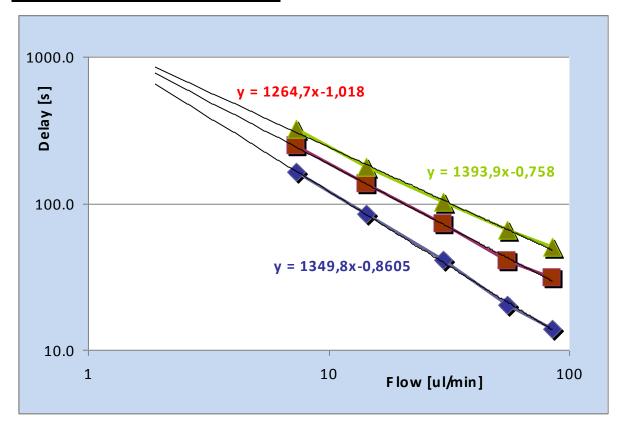
The list of possible substances that can be continuously monitored using this catheter:

- Electrolytes (such as potassium, magnesium etc.): MDC1 + conductometric cell or MDC1 + Capillary electrophoresis microchip - in development,
- Energy metabolites (glucose, lactate, pyruvate, etc.) MDC1 + sensor AC1.W2.RS - glucose or AC1.W2.RS - lactate or AC1.W2.RS - pyruvate,
- Amino acids (glutamate, GABA, etc.) MDC1+sensor with detection element which detect glutamate, GABA and next amino acids,
- Hormones and neurotransmitters (dopamine, Acetylcholine) MDC1 + sensor AC1.W2.RS other bio-recognition element or neurotransmitters.
- Inflammatory mediators and growth factors (cytokines, etc.) MDC1 + sensor with proper bio-recognition,
- Drugs and their metabolites (unbound "free fractions and /or total) MDC1 + sensor with proper bio-recognition,
- Biotechnologies, drugs development and production MDC1 + sensor with proper bio-recognition.

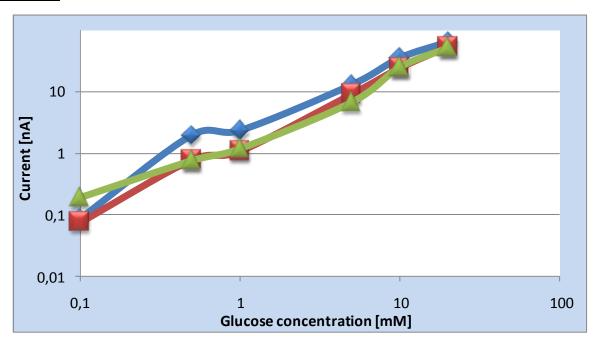
In each application the flow rate and concentration range must be optimized. In some cases the methodology of detection must be developed. The measurement of another compounds concentrations can be prepared on customer's demand.



Typical dependence of delays for low molecular weight compounds (100 - 200 daltons) - measured for glucose



<u>Example of calibration curve for glucose (Sensor AC1.W2.RS with Glucose oxidase)</u>





The delays at optimum performance flow (5 - 20 µl/min)

Flow rate [µl/min]	t ₁ [s]	t ₂ [s]	t ₃ [s]
7.3	62.2	100.3	162.8
14.3	30.6	59.1	93.5

Accessories

• Linear pump

Example of Order

• 5 pieces - MDC1

Ordering Information

- The order is specified by whole product code
- Minimum order quantity 1 MDC1
- Delivery time for standard MDC1 Microdialysis catheters 4 weeks from receipt of order
- Delivery time for non-standard MDC1 Microdialysis catheters depends on final technical specification of order