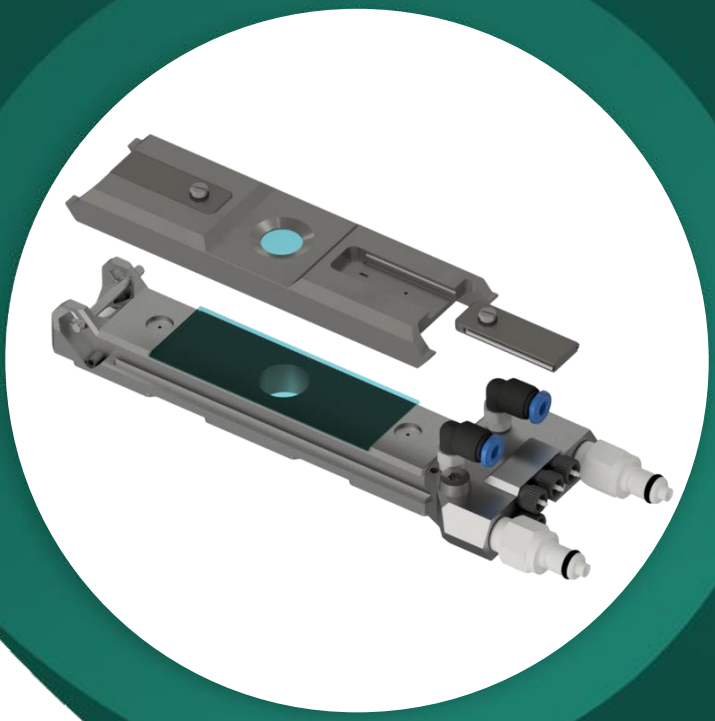
FLOW & PATCH

CELL & TISSUE TECHNOLOGY



NOW AVAILABLE!

Flow & Patch is a 3D-printed titanium chamber that brings cell experiments to the next level. It enables flow- and patch clamp studies under precise control of **temperature**, **substance concentration**, and **shear forces**, using buffer or even autologous plasma for truly physiological conditions. Cells can be directly visualized under shear, opening new possibilities in cell biology, biophysics, and research medical The core system can be purchased either as a **Flow Chamber** or as a **Patch-Clamp Chamber**. The Flow chamber includes a glass-covered observation deck for stable, high-resolution imaging, while the Patch chamber omits the glass to provide direct electrode access.

ADVANTAGES

- ✓ Fits any microscope stage
- ✓ Uses standard slides
- ✓ Compact & versatile
- ✓ Rapid setting adjustment
- ✓ Autoclavable & sterilizable
- ✓ User-friendly software
- ✓ Adjustable experimental conditions

APPLICATION

- Hematology, cell biology, biophysics, electrophysiology
- Cell shape, adhesion, aggregation
- Pharmacy & biochemistry testing
- Dose–response & reversibility
- Bioavailability with patient plasma
- Patch clamp – Ion channels

WHAT WE OFFER

The **Flow & Patch** flow chamber allows quick and easy implementation of experiments using many standard products and a design that is based on an ergonomic, space-saving geometry. All parts of the **Flow & Patch** flow chamber that encounter biological material are heat-resistant and can therefore be sterilized in an autoclave.

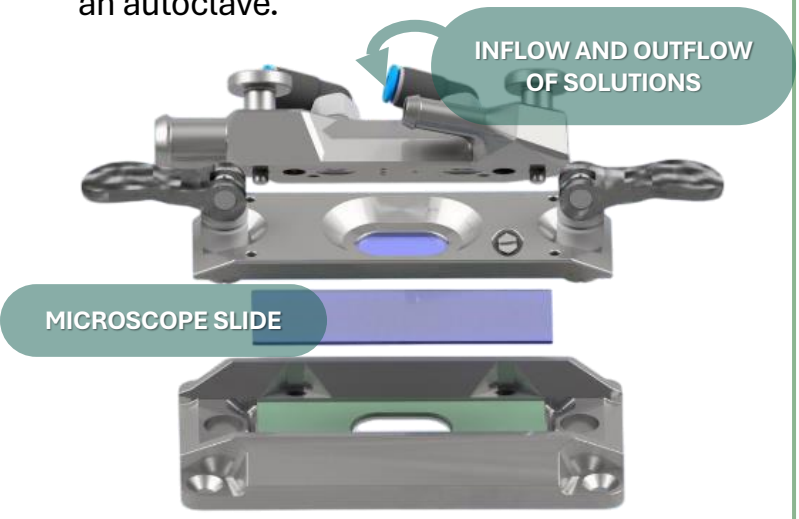


Figure 1: Flow & Patch Flow Chamber components

Additionally, all relevant materials are biologically inert so that samples are not affected, and no corrosion occurs. **Flow & Patch** is a robust and durable laboratory device.

Shear stress ramps and durations are fully software-controlled, enabling precise simulation of physiological or pathological environments, while chamber temperature and wall shear stresses remain tightly regulated. Test substances can be introduced simply by changing solutions, allowing studies of reversibility and other dynamic effects.

FEATURES

All experiments require standard external equipment such as a microscope, pump, thermostat, and video capture system, while advanced functions are unlocked through five optional **software modules** (RBC Mechanics, Osmotic Fragility, Cell Adhesion, RBC Shape & Aggregation, and Patch-Clamp).

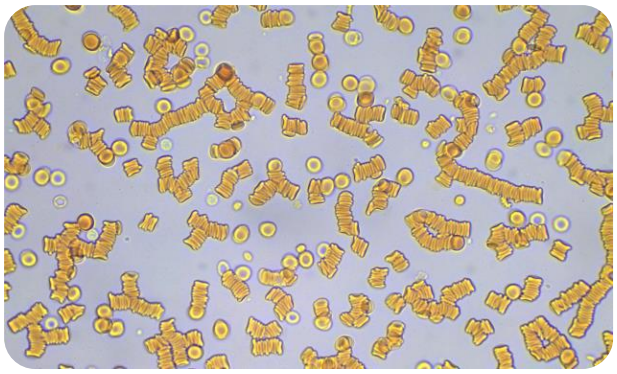


Figure 2: Rouleaux formations of erythrocytes under the microscope

These software modules can be purchased separately as **add-ons** to the core system (The Flow Chamber). A Pathology Research Module for Sickle Cell Anemia and Thalassemia is currently in development and will soon be commercially available .

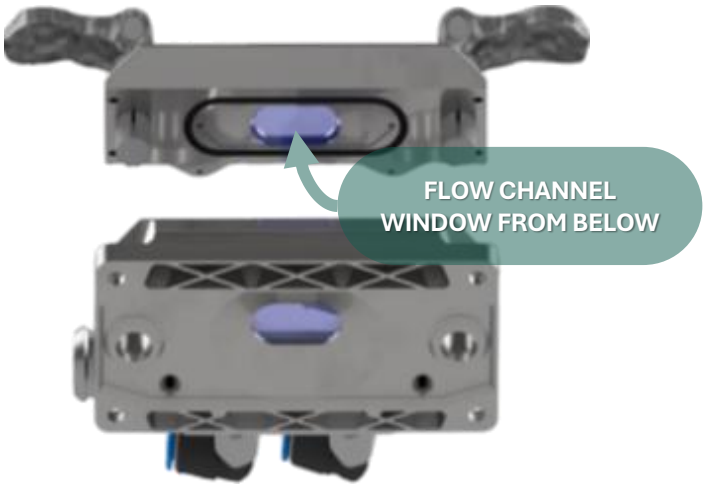


Figure 3: Flow & Patch Flow Chamber components (Bottom view)

TECHNICAL DATA

Slides	Microscope slide (DIN ISO 8037-1) Glass or polymer (individual design/coating on request)
Flow channel height	0.3 mm
Chamber width	14 mm
Chamber length	55 mm
Wall shear stress	0.25 – 10 Pa
Shear flow shut-off time	0.3 ms
Solution change time	2.0 s at 0.25 Pa shear stress
Dimensions (WxHxD):	78 x 27 x 121 mm
Material	Titan or Stainless steel (AISI 316L / EN 1.4404)
Gaskets	Silicone (FDA) and EPDM
Temperature control	Water circulation thermostat
Accuracy of Temperature	± 0,1°C
Hot water outlet	Hose nozzle 6 mm ID, 8 mm OD
Temperature sensor	Pt1000 Rod probe, 1,5 x 100 mm, LEMO 1S
Pneumatic seals	2x FESTO QSRL-M5-4

ADDITIONAL FEATURES

- ✓ **Metal components fully autoclavable (up to 140°C)**
- ✓ **The control software allows individual switching of the flow chamber inlet and outlet using a mini air compressor.**

OUR SERVICES

- ❖ **Commissioned studies (Upon request)**
- ❖ **Consulting via our hotline**
  - ▪ **Questions about application options, test setup and implementation**
- ❖ **Workshops and training courses**

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VISIT OUR WEBSITE!

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SCAN ME

LOCATION

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