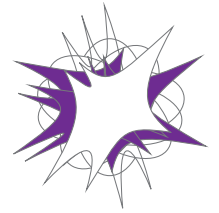


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# Immuno*flow*

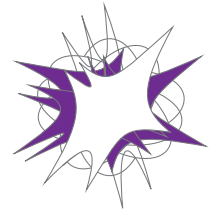
Flow cytometer with microtitre plate loader  
for the SERION Multianalyt™ technology

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multianalyt™

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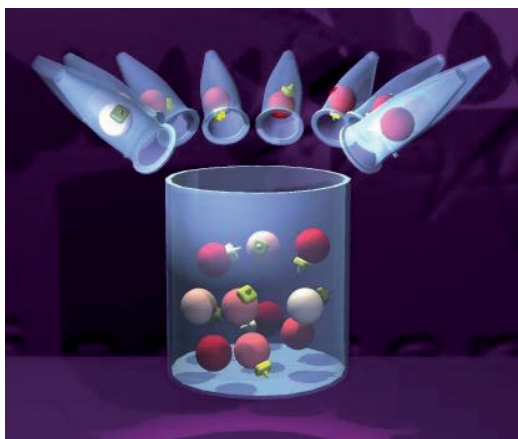


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# ImmunoFlow

The **ImmunoFlow** is a new, compact, portable, 5-parameter (FSC, SSC and three fluorescences) benchtop flow cytometer with an integrated microtitre plate loader for the analysis of processed SERION Multianalyt™ immunoassays. The integrated software, SERION easyFLOW, allows the quantitative evaluation of raw data generated by multiplexed immunoassays. Due to its small footprint, the **ImmunoFlow** can be placed conveniently even in smaller laboratories. Combination with the **Immunomat™ TWINSsystem** is the perfect solution for fully automated processing and analysis of SERION Multianalyt™ immunoassays.



SERION Multianalyt™ Particle Plex

## Technology

The SERION Multianalyt™ technology is based on small polystyrene particles. The beads are dyed with a fluorophore in ten different intensity steps. The use of the color coding in combination with the variable size of the particles leads to optically distinguishable bead populations. The differentiation of the particles by **ImmunoFlow** allows the simultaneous performance of up to 40 different immunoreactions in one set up. Due to a surface modification, each particle population can be coated with a different capture molecule.

## Immunoassay

The analysis is performed in the cavities of a microtitre plate and starts with the addition of a prepared particle suspension to a diluted sample preparation. Subsequently, the analytes of interest bind to the solid phase.

serion



multianalyt™

In a multiplex test performance, various particle populations are mixed with the diluted sample. The higher the concentration of the analyte, the more molecules bind to the capture molecule coated on the surface of the particles. In a second step, a detector molecule, usually an antibody with a high specific affinity to the analyte, is added to the reaction mixture. The detector is labelled with another fluorescent dye. The use of fluorophores with high quantum efficiency, such as Phycoerythrin, guarantees a high sensitivity in the immunoreaction. Thereby, analysis of solutions with low analyte concentration as well as highly diluted samples can be performed. The use of a multiplexing test system requires very low sample quantities. Automated processing of SERION Multianalyt™ immunoassays is evaluated on **Immunomat™ TWINS**ystem.

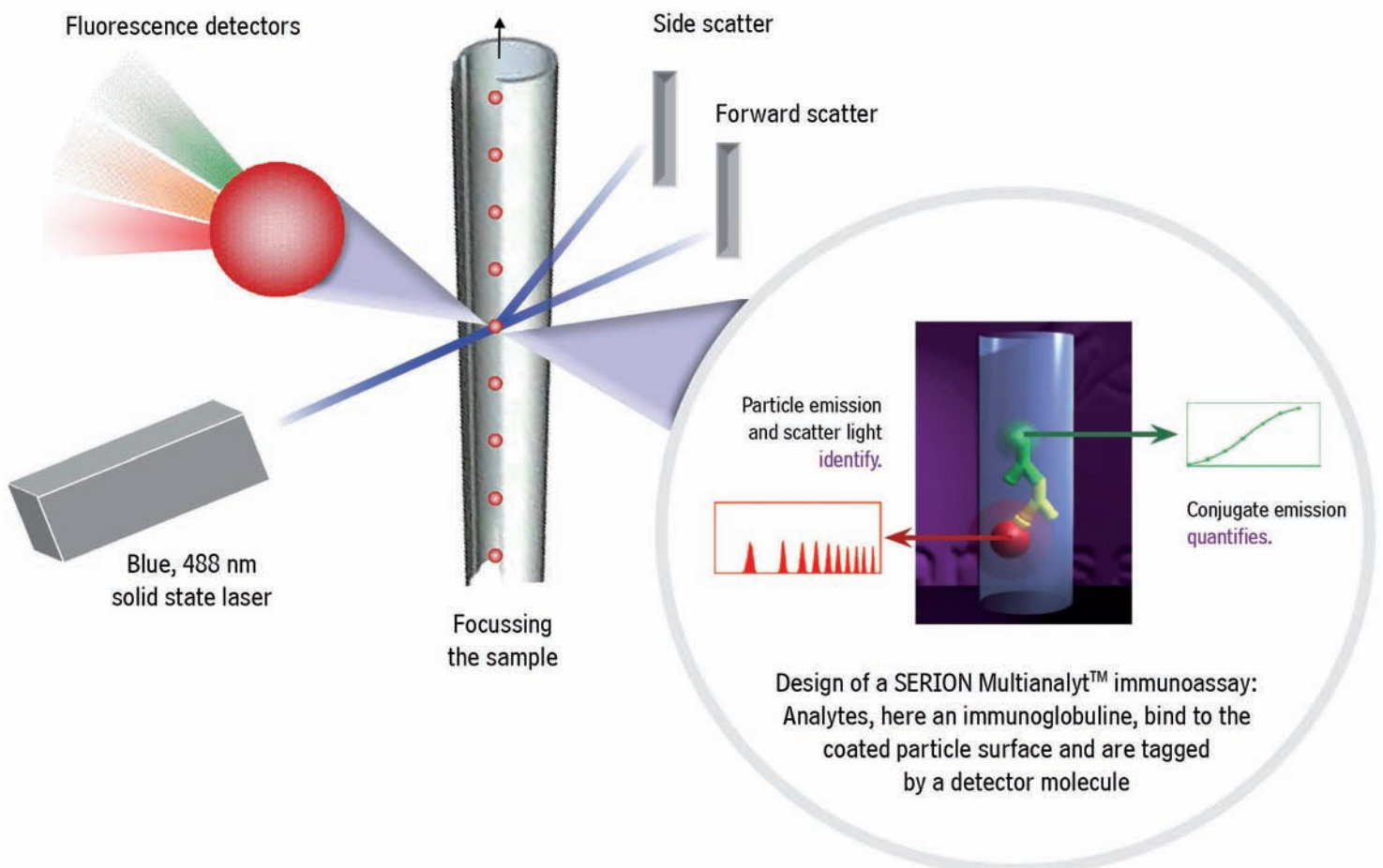
## Analysis

The analysis of processed SERION Multianalyt™ immunoassays is performed on **Immunoflow** or comparable flow cytometers. Thereby, the particles are separated and precisely gated through the focus of the laser-based detection system. The identification of the particles is performed by

their scattering of light and by their fluorescence properties. The fluorescence intensity of the bound detector molecule is proportional to the concentration of the analyte in the sample. Each particle is analysed individually. The analysis of more than a hundred particles per population assures the results statistically and guarantees the high reproducibility of the data.

## Signal Processing

The optical bank of the **Immunoflow** is based on a blue 20 mW 488 nm solid state laser focussing the particle stream within the measuring cuvette. The emitted fluorescence is deflected via mirrors and optical filters on a range of detectors. The classification of the particles is performed by the analysis of the scattering of light in order to verify their size as well as their emitted fluorescence > 670 nm on FL3. The fluorescences of the detector molecules are measured on FL1 (Fluorescein) and FL2 (Phycoerythrin) to quantify the analyte of interest. The fluorescence intensity of the bound detector molecules are proportional to the concentration of the analyte in the sample.



## Data Evaluation

With **Immuno*flow***, raw data evaluation of multiplexed immunoassays is performed directly after each single sample analysis. The integrated software, **SERION easy*FLOW***, allows the automated and quantitative evaluation of measured signal intensities according to the individual **SERION Multianalyt™** immunoassays and presents the results in a clearly laid out report. Since flow cytometers are able to analyse thousands of particles per second, sample analysis is performed in a few seconds.



The software **SERION easy*FLOW*** allows a fast evaluation of **SERION Multianalyt™** immunoassays

Additionally, the validity of the test run is assessed by verification of the standard and control values as well as the number of particles analysed. By the use of the **Immuno*flow*** a standardised and valid evaluation of **SERION Multianalyt™** immunoassays is guaranteed.

The obtained data can be conveniently transferred into other data formats, e.g. Microsoft® Excel. Naturally, the software is accessible to the laboratory information system (LIS) in order to allow a convenient transfer of the collected data.

## Easy Access to Buffers and Solutions



Level sensors in containers of sheath fluid and waste guarantee the controlled and smooth running of the analysis. The easy access to fluid containers allows rapid filling or emptying, when necessary.

## Technical Support



Institut Virion\Serion GmbH offers comprehensive service and technical support for all questions concerning **Immunomat™** and **Immuno*flow***. Our service guarantees the use of the **SERION Multianalyt™** technology in routine laboratories.

## Order Information

**Immuno*flow***

**Order Nr.: VT 200**

Please visit our website [www.virion-serion.com](http://www.virion-serion.com) for more information on our products.

## Highlights of *Immuno*flow

- SERION Multianalyt™ Immunoassay Analyser

Evaluated for antibody detection in serum, plasma and cerebrospinal fluid (CSF) using SERION Multianalyt™ immunoassays.

- W x D x H: 600 mm x 450 mm x 636 mm

- Stability and Precision

The *Immuno*flow is immediately ready-to-use, when delivered. Time-consuming installations, laser adjustments or settings of the optical bank as for many other flow cytometers are not necessary.

The stable 20 mW, blue 488 nm solid state laser is superior in power and durability to many other cooled lasers. Precision analysis of highest qualities are guaranteed.

- Detection of 5 optical Parameters: FSC, SSC, FL-1, FL-2, FL-3

- High Fluorescence Intensities (< 100 MESF (FITC); < 50 MESF (PE))

- Measuring Cuvette

The *Immuno*flow contains a 200 µm x 350 µm quartz cuvette to focus the particle stream.

- Computer and Monitor

Integrated All-in-One PC without fan, optimised for low energy consumption, Intel Celeron M 1.0 GHz Processor, 512 MB RAM, Compact Flash Slot, 2 x USB, 2 x RS-232, 1 x RS-232/422/485 (auto data flow control), Keyboard and Mouse, 10.4" SVGA TFT Monitor, Microsoft® Windows™ XP.

- Software

The integrated software SERION *easy*FLOW can be used for the adjustment of the instrument parameters, such as voltages of photomultipliers and compensation. The software is recommended for the automated and quantitative evaluation of measured signal intensities directly after each single sample analysis in a clearly laid out result report. The obtained data can be conveniently transferred into other data formats, e.g. Microsoft® Excel. Naturally, the software is accessible to the laboratory information system (LIS) in order to allow a convenient transfer of the collected data.

- Easy to handle

- Universel 100 - 240 V / AC Input

The *Immuno*flow works with a regular 100 - 240 V AC Input.

Due to its small footprint, the *Immuno*flow can be placed conveniently even in smaller laboratories.

- Level sensors in fluid containers

Level sensors in containers of sheath fluid and waste guarantee the smooth running of the analysis.

- Easy access to buffers and waste containers

The easy access to fluid containers allows rapid filling or emptying, when necessary.

- Technical Support

Institut Virion\Serion GmbH offers comprehensive service and technical support for all questions concerning *Immunomat*™ and *Immuno*flow.

# Immunomat™ *TWIN*system

SERION Multianalyt™ Processor



**Immuno*flow***  
SERION Multianalyt™ Analyser

The perfect combination for the  
**SERION Multianalyt™ Technology:**  
Immunomat™ *TWIN*system and Immuno*flow*

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