

**Usage Regulations
for the Service Area (Core Facility)
"Flow Cytometry"
(Flow Cytometry Core Facility – Campus Poppelsdorf: FCCF-CP)
of the Faculty of Mathematics and Natural Sciences
of the Rheinischen Friedrich-Wilhelms
University of Bonn

dated 27.02.2023**

The legally binding version of the usage regulations is the German version.

Pursuant to § 2 section 4 of the Higher Education Act of the State of North Rhine-Westphalia (Hochschulgesetz - HG) of September 16, 2014 (GV. NRW p. 547), last amended by Article 1 of the Act on the Further Amendment of the Higher Education Act and the Art Colleges Act of November 25, 2021 (GV. NRW p. 1210a), the Faculty of Mathematics and Natural Sciences of the University of Bonn has enacted the following regulations:

Preamble

The Core Facility "Flow Cytometry" (FCCF-CP) is an institution of the Faculty of Mathematics and Natural Sciences located in the laboratories of the Life and Medical Sciences Institute on the Poppelsdorf Campus. It serves as a permanent support structure for research in the life sciences, particularly for single-cell and single-molecule analysis. The joint equipment pool of the faculty is intended to be used efficiently.

§ 1 Scope

These usage regulations define the rules for using the services offered by the Core Facility. They apply to the use of the large-scale equipment provided, including control and analysis computers and the software used for data evaluation, as well as to the use of laboratory and office spaces and the services provided by the Core Facility staff. The usage regulations are binding for all users.

§ 2

Equipment, Services, and Contact Persons

- (1) The equipment available at the Core Facility is listed in Annex 1.
 - (2) Detailed descriptions of the operated devices, service offerings, sample preparation guidelines, and current contact information are also available on the website: <https://www.mnf.uni-bonn.de/en/forschung/core-facilities>¹
- For scientific inquiries, the Core Facility management serves as the point of contact; for technical questions, the Core Facility staff should be consulted.

§ 3

Eligibility for Use

- (1) The services offered by the Core Facility are primarily intended for employees of the institutes of the University of Bonn. Additionally, employees of external institutions may also place orders after consultation with the management of the Core Facility.
- (2) If not all usage requests can be fulfilled due to overbooking, the management of the Core Facility will decide on the allocation and/or access to the measurement stations.

§ 4

General Provisions

The equipment of the Core Facility represents significant material value and serves as a valuable resource for the university's research community. To ensure optimal accessibility, performance, and utilization of the equipment, the following basic rules must be observed by users:

1. Scientists requiring access to the instruments of the Core Facility must first discuss their project with the Core Facility management and—if necessary—complete training conducted by Core Facility staff. Any issues occurring during equipment operation must be documented in the logbook, and Core Facility staff must be informed immediately.

¹ Webpage-link updated 24.02.2025

2. The Core Facility management may grant permission for independent use of the instruments upon request. Independent operation is only permitted on designated devices and requires mandatory training and instruction in coordination with the Core Facility management. There is no entitlement to independent equipment use.
3. Equipment and chemicals may not be removed from the laboratory at any time. Computers connected to the devices may only be used for operating the equipment. Any additional use (e.g., internet access) is not permitted.
4. Acquired data must ultimately be backed up and stored externally. Due to limited storage capacity, older data will be deleted at regular intervals by Core Facility staff in accordance with a predefined expiration date.
5. When using the resources of the Flow Cytometry Core Facility, the "Recommendations of the DFG for Safeguarding Good Scientific Practice" (<https://www.dfg.de/de/grundlagen-themen/grundlagen-und-prinzipien-der-foerderung/gwp/kodex>²) must be followed.
6. Users of the Core Facility are generally not permitted to store samples, solutions, or other materials within the premises of the Core Facility.
7. Depending on the device, independent or assisted use of the instruments may be possible or necessary after appropriate training. Certain methods (e.g., Akoya CODEX) are performed exclusively by Core Facility staff.
8. In case of full equipment occupancy, high workload of Core Facility staff, or in the event of equipment failures and maintenance work, delays in the measurement and preparation process may occur.
9. If results obtained with significant contributions from the Flow Cytometry Core Facility are published, this contribution should be acknowledged by including the following statement: "We would like to thank the Flow Cytometry Core Facility of the Mathematical and Natural Sciences Faculty at the University of Bonn for providing support and instrumentation."
10. Failure to comply with these usage regulations and/or disrespectful behavior toward other users or Core Facility staff may result in the revocation of access to the Core Facility and its services after prior warning by the Core Facility management.
11. The maintenance, replacement, and further development of the equipment are coordinated in close consultation with the Core Facility management and the Dean's Office.

§ 5

Services Provided

The Core Facility offers the following services:

1. Measurement Orders

1.1 Types of Measurement

a) Flow Cytometry/Cell Sorting

This service includes powering up and shutting down the devices, as well as the required cleaning procedures. These tasks are performed by Core Facility staff or a qualified representative after consultation with the management and after receiving appropriate instruction from the Core Facility staff.

b) Measurement of Soluble Biomolecules

One of the services provided by the Core Facility is the multiplex bead-based analysis of cytokines, hormones, and many other soluble biomolecules using the xMAP INTELLIFLEX® system. This service

² Webpage-link updated 24.02.2025

is carried out by Core Facility staff or a qualified representative after consultation with the management and instruction by Core Facility staff. The kits and chemicals required for these measurements must be provided by the users.

c) Measurement of Spatially High-Dimensional Protein Expression

Another service offered by the Core Facility is the use of the Akoya-CODEX system, an automated fluidics device for cyclic staining in spatially high-dimensional phenotyping applications. This service is conducted by Core Facility staff or a qualified representative after consultation with the management and instruction by Core Facility staff. The antibodies required for these measurements must be provided by the users.

A service measurement request is placed by submitting a sample along with a completed order form, which must be filled out in advance through the online booking system. The assignment to a specific device, scheduling of measurement time, and execution of the measurement are managed by the Core Facility management. Requests for measurements on a specific device must be explicitly justified on the order form.

1.2 Sample Preparation by Users

a) Flow Cytometry/Cell Sorting

The Core Facility offers a full-service solution for the use of flow cytometry and cell sorting. User samples must be prepared according to standard protocols provided by Core Facility staff.

b) Measurement of Soluble Biomolecules (xMAP INTELLIFLEX® System)

Multiplex bead-based analyses of cytokines, hormones, and many other soluble biomolecules can be performed using a specialized flow cytometer. Sample preparation (e.g., serum or cell culture medium) must be carried out by the users. For measurements involving enzymatically digested samples or similar preparations, individual consultation with the Core Facility management or staff is required.

c) Measurement of Spatially High-Dimensional Protein Expression (Akoya-CODEX)

The detection of individual cells and proteins using the Akoya-CODEX system is currently only possible through complex processing performed by Core Facility staff. Due to the difficulty of both sample preparation and processing, this analysis is only available after individual consultation with the Core Facility management or staff.

2. Consultation and Advice on Experimental Design

In preliminary discussions, it will be determined whether sufficient capacity is available for the project and whether the existing equipment is suitable to achieve the desired results. If the experimental design is deemed inadequate, the measurement request may be rejected.

3. Assisted Instrument Use – Support Operation

Users can request support when using assigned orders in cases of issues, system tests, or when new methods need to be developed and optimized using the existing systems.

§ 6

Reservations, Equipment Bookings, and Measurement Scheduling

- (1) A service measurement is requested by submitting a sample along with a completed order form, which must be filled out in advance via the online booking system. The assignment of a specific device, scheduling of measurement time, and execution of the measurement are carried out by the staff responsible for each measurement area. In cases of equipment overuse, the Core Facility management may reassign measurements to ensure optimal utilization of the available equipment pool. The processing of frozen or fixed samples is carried out after careful storage, once capacity is available again, and considering established priorities. For experiments with live cells, users are requested to arrange specific measurement appointments in advance with Core Facility staff.
- (2) Assistance with data analysis and interpretation is provided by the Core Facility management upon prior agreement.
- (3) Online calendars are used to visualize equipment occupancy and book measurement times. Users will be introduced to this system by the Core Facility management or staff.

§ 7

Data Provision and Storage

- (1) Upon completion of the service or measurement, the measurement data is made available for download on a password-protected server. Depending on the measurement device and software, and after consultation with Core Facility staff, data may be provided in electronic formats that can be sent via email. In such cases, individual arrangements must be made with the Core Facility management or staff. If the analyzed cells need to be returned to culture after measurement, they will be sorted into designated containers to be taken by the users.
- (2) Users performing manual operations on approved devices will be assigned a personal data and method folder during their introduction, where self-measured data and methods can be stored. Data must not be stored outside these designated folders.
- (3) Measurement data can only be stored in a limited capacity. Users must transfer the provided or self-stored data to their own storage media no later than six months after the measurement is completed and take responsibility for data backup. According to the DFG recommendations for safeguarding good scientific practice, measurement data must be retained for at least ten years. After the period specified in sentence 2, measurement data will be deleted by the Core Facility. Data stored outside designated folders, contrary to this policy, will not be secured and may be deleted at any time.

§ 8

Safety Regulations

- (1) Users are required to use laboratory and large-scale equipment, as well as control and analysis computers, only after prior instruction and in accordance with the learned operating guidelines.
- (2) The workplace must be left in the same condition as it was found. Any foreseeable disruption of laboratory operations must be avoided. Additionally, actions that could cause damage to the infrastructure or hinder other users in their work must be prevented. If a device is left in a heavily contaminated state, the time required for cleaning will be billed at the service rate. If this occurs repeatedly despite warnings, the user's measurement privileges may be revoked.

(3) The general safety regulations for laboratory work apply (BGI 850-0: Safe Working in Laboratories. Basics and Guidelines).

§ 9

Cancellations and Delays

If users are unable to keep an appointment, they must notify the Core Facility management immediately. Canceling a booking at least two hours in advance is always free of charge. A very short-term cancellation (<2 hours) must be communicated by phone to the responsible staff of the respective measurement area. In such cases, the user will only be exempt from the service fee if another user agrees to take over the measurement time. If the user fails to do so, the unused measurement time will be fully charged.

§ 10

Usage Costs

The usage costs depend on the type of equipment, such as the number of lasers, whether it is for measurement only or also includes cell sorting, and the scope of the service provided. The underlying calculations are listed below and are based on the DFG form 55.04-11/21:

A1. Flow Cytometry Equipment Class I (Service Operation)

See Annex 1

A2. Flow Cytometry Equipment Class I (Assisted Operation)

See Annex 1

A3. Flow Cytometry Equipment Class I (Application Operation)

See Annex 1

B1. Flow Cytometry Equipment Class II (Service Operation)

See Annex 1

B2. Flow Cytometry Equipment Class II (Assisted Operation)

See Annex 1

B3. Flow Cytometry Equipment Class II (Application Operation)

See Annex 1

C1. Flow Cytometry Equipment Class III (Service Operation)

See Annex 1

C2. Flow Cytometry Equipment Class III (Assisted Operation)

See Annex 1

C3. Flow Cytometry Equipment Class III (Application Operation)

See Annex 1

D. Consultations and Advising

For consultations and advising services, costs of €50 per hour (internal) and €100 per hour (external) may apply. The cost is determined based on the complexity and effort required for the assignment and will be communicated to users in advance.

E. Value-Added Tax (VAT)

If the services covered by these usage regulations are subject to VAT, the applicable VAT rate will be charged in addition. Users are responsible for any interest that may be imposed under Sections 233–237 of the German Fiscal Code (AO). Users waive the right to invoke the statute of limitations in these cases.

Annex 1:

Equipment Type	Service Operation¹	Application Operation¹	Training³
Flow Cytometry Equipment Class I (Cell Analyzers with up to 3 lasers)			
Guava® easyCyte™ HT System	45	5	22
xMAP INTELLIFLEX®	45	5	45
ADVIA 2120i	50	10	50
BD Canto II	52	12	18
BD LSR II	52	12	18
Flow Cytometry Equipment Class II (Cell Analyzers with more than 3 lasers)			
BD FACS Symphony	60	20	45
Flow Cytometry Equipment Class III (Cell Sorters & Imaging-based Systems)			
BD FACS ARIA III	80	40	240
Akoya CODEX ²	50	10	-
Additional services and applications are available upon request.			

¹The listed rates are in euros per hour

²can only be operated in service mode by trained Core Facility personnel

³one-time fee per person