

# Usage Policy

## BOKU Core Facility Biomolecular & Cellular Analysis (BMCA)

BMCA is a state-of-the-art analytical laboratory providing access to advanced instrumentation and expert knowledge. It specialises in three key areas: **biomolecular analysis**, including the characterisation of proteins and particles as well as the study of biomolecular interactions; **cellular analysis** using flow cytometry for cell characterisation and sorting; and **structural analysis**, encompassing X-ray crystallography and BioSAXS, supported by a comprehensive infrastructure for sample preparation, data collection, and data processing.

### 1. Service Modes

BMCA offers two service modes:

#### Trained user mode

Independent instrument use after appropriate training and in accordance with this usage policy.

#### Full-service mode

Experiments and, where applicable, reports are handled by BMCA staff.

The appropriate mode is determined jointly by users and BMCA staff based on experimental requirements (e.g., technical complexity, number of samples), staff availability, and financial considerations.

BMCA operates on a first-come, first-served basis, regardless of usage mode or institutional affiliation. Exceptions may be granted for time-sensitive experiments (e.g., manuscript resubmissions) with prior approval.

### 2. Access and Pricing

#### Internal Users (BOKU)

Service fees for internal users are determined by the legal basis of the project under which the work is conducted. Before starting any experiment, the Principal Investigator (PI) must provide:

- Project name
- Funding agency
- Account number for invoicing (6-digit cost centre or 10-digit internal order number)

Based on this information, the PI will receive the applicable internal pricing information upon request. BMCA reserves the right to revise service fees at any time, including for ongoing projects.

#### External Users (Non-BOKU)

After a project discussion, external users receive a customised offer. The offer must be confirmed in writing (usually by email) before experimental work begins. Pricing updates may also apply to ongoing projects unless otherwise agreed in writing.

### 3. Project Initiation

To initiate a project, please contact [bmca@boku.ac.at](mailto:bmca@boku.ac.at) to discuss available service options.

Users are encouraged to prepare the following information:

- Previous experimental attempts or relevant experience
- Publications or data demonstrating similar approaches
- A clear research objective and expected outcome

Providing this information helps ensure efficient planning and optimal use of facility resources.

### 4. Training and User Authorisation

Use of BMCA instrumentation is strictly limited to users who have successfully completed training provided by BMCA staff. Operation of any

instrument without prior training is not permitted. To schedule training, please contact [bmca@boku.ac.at](mailto:bmca@boku.ac.at).

Users are not permitted to train other users under any circumstances. Violations may result in loss of access to the facility for both the unauthorised trainer and trainee.

If an instrument has not been used for more than one year, the user must consult BMCA staff regarding refresher or retraining.

Training includes an introduction to facility safety regulations. BMCA staff may suspend or revoke instrument access if training requirements or safety rules are not followed.

## 5. Biosafety

Use of BMCA services is restricted to biosafety level 1 (BSL-1) materials.

Infectious, toxic, or otherwise hazardous biological materials must not be brought into or processed within the facility. If there is any uncertainty regarding biosafety classification, users must consult BMCA staff before commencing work.

## 6. Sample Requirements

Users are encouraged to ensure that submitted samples meet basic quality standards, including:

- Verification of sample identity (e.g., mass spectrometry)
- Confirmation of purity and/or homogeneity (e.g., SDS-PAGE, SEC-LS)
- Accurate determination of sample concentration

BMCA can assist with sample characterisation upon request; additional analyses may incur extra charges.

BMCA assumes no responsibility for negative results arising from poor sample quality.

## 7. Instrumentation

Available instrumentation includes:

- **ÄKTA go (Cytiva)** – Protein purification
- **OMNISEC System (Malvern Panalytical)** – Molecular weight & sample quality
- **Zetasizer Nano ZSP (Malvern Panalytical)** – Particle size analysis
- **Uncle (Unchained Labs)** – Thermal & colloidal stability
- **PEAQ-DSC (Malvern Panalytical)** – Thermal stability
- **PEAQ-ITC (Malvern Panalytical)** – Biomolecular interactions in solution
- **Octet R8e (Sartorius)** – Biomolecular interactions & kinetics
- **Biacore T200 (GE Healthcare)** – Biomolecular interactions & kinetics
- **CytoFLEX S (Beckman Coulter)** – Cell analysis
- **CytoFLEX SRT (Beckman Coulter)** – Cell sorting (FACS)
- **Sony SH800 (Sony)** – Cell sorting (FACS)
- **Mosquito LCP (SPT Labtech)** – Precise pipetting (nL)
- **Rock Imager 1000 (Formulatrix)** – Monitoring of crystallisation plates
- **SteREO Discovery V12 (Zeiss)** – Sample visualisation
- **FORMULATOR 10 (Formulatrix)** – Generation & optimisation of crystallisation conditions

## 8. General Laboratory Equipment

Basic equipment available for users includes:

- Personal protective equipment (coat, safety glasses, gloves; limited supply available)
- Pipettes and tips (single- and multi-channel)
- Plastic reaction tubes (non-sterile)
- Glass bottles and beakers
- Syringes and sterile syringe filters (0.22 µm)
- pH electrodes (micro and standard)
- Balances
- Magnetic stirrer and vortex mixer (heatable)

- Ultrapure water system (Milli-Q)
- Ultrasonic bath (heatable)
- Vacuum filtration pump
- Refrigerated centrifuge (compatible with 1.5/2 mL tubes, 15/50 mL tubes, and plates)
- Fridge (4°C)
- Freezer (-20°C)
- **DeNovix (DeNovix Inc.)** – Protein, DNA & RNA concentration determination by absorbance and fluorescence in microlitre or cuvette mode
- **Stunner (Unchained Labs)** – Concentration determination and characterisation of proteins, DNA, RNA, LNPs and VLPs by UV/Vis absorbance and (multi-angle) DLS in 96-well format

Users should inform BMCA staff when supplies are running low. Improper use, inadequate cleaning, damage, or loss of equipment may result in charges for cleaning, repair, or replacement.

## 9. Instrument Booking and Access

All instrument use must be booked via the management software [PPMS](#).

- **Internal Users (BOKU):** log in with BOKU credentials to request an account.
- **External Users (Non-BOKU):** send name, email, phone number, PI name, and billing address to [bmca@boku.ac.at](mailto:bmca@boku.ac.at) to set up a user account.

Most instruments are available:

**Monday–Friday, 09:00–17:00**

BOKU internal users may access to the flow cytometry lab (B01-021) 24/7 after training, which includes instruction on the use of the emergency device.

Usage of most instruments (i.e., Octet, Uncle, Zetasizer, CytoFLEX S, Sony sorter and CytoFLEX SRT) is automatically tracked via PPMS, and users must log in at the instrument. For other instruments (i.e., ITC, DSC, SPR, OMNISEC, and protein crystallisation systems), users must manually order the number of samples or crystallisation

packages in PPMS. Specific consumables (excluding basic laboratory supplies such as gloves, pipette tips, and reaction tubes) must also be ordered via PPMS based on actual usage.

Bookings (except flow cytometers in B01-021) require confirmation by BMCA staff and must be submitted at least **one working day (24 hours)** in advance.

Cancellations within 24 hours must be made in person or by telephone. Unused bookings must be cancelled, or they will be fully charged.

Bookings may not exceed seven consecutive days unless approved in exceptional cases (e.g., manuscript revisions or short-term external visits).

BMCA staff may cancel bookings at short notice if instruments require maintenance or repair. Users will be notified as early as possible, and where feasible, such interruptions will be planned to minimise disruption.

Users are expected to handle instruments with care, use resources responsibly, follow all instructions and protocols provided by BMCA staff, and consult BMCA staff if issues arise or if anything is unclear.

While every effort is made to ensure reliable instrument performance, BMCA cannot be held responsible for interruptions due to instrument malfunction or failure. BMCA is not liable for any resulting loss of samples or preparatory work.

## 10. User Samples and Reagents

All samples and reagents must be clearly labelled with:


- compound name
- user name
- date
- relevant hazard information, including GHS hazard labels/pictograms where applicable.

Unlabelled materials may be discarded.

Users may store materials temporarily during active projects but must remove them after project completion. Uncollected materials may be discarded.

For full-service projects, users will be notified once experiments have been completed. If desired, remaining materials should be collected in a timely manner. Materials that are not collected will be discarded. Shipping costs for returning materials are the responsibility of the user.

## 11. Waste Disposal

All biological samples and contaminated disposables must be discarded in designated containers labelled with: 

Dirty laboratory ware should be placed on designated trays with all labels removed.

Methanol-containing waste from ITC experiments must be collected separately. Detailed instructions are provided during instrument training.

## 12. Data Management

Raw data generated on BMCA instruments are stored locally on the respective instrument control PCs and are not backed up.

Users are solely responsible for transferring and securely storing their data immediately after completing their experiments.

**Depending on the instrument, data transfer may be performed via:**

- dedicated BMCA USB devices (provided at the instruments), or
- approved network storage platforms (e.g., drive.boku.ac.at, BOKU Box, Dropbox, or similar services)

Personal USB devices are not permitted.

For the two CytoFLEX S control PCs, all data files (.xit and .fcs) older than one year will be automatically deleted. Templates (.xitm) and compensation files (.xite) will remain unaffected.

The User PC is available to BMCA users Monday–Friday, 09:00–17:00, on a first-come, first-served basis and does not require a reservation. The PC is equipped with most BMCA-specific instrument software for data analysis.

Data stored on instrument PCs, the User-PC, or BMCA USB devices may be deleted without prior notice.

## 13. Publications and Acknowledgement

Publications including data generated using BMCA instrumentation or services must acknowledge the facility and be reported via the PPMS system.

Users requiring assistance with manuscript preparation, such as presenting data or describing methods, are encouraged to contact BMCA staff.

In accordance with good scientific practice, BMCA staff who have made intellectual contributions to a project or publication should be offered co-authorship.

### Acknowledgment Guidelines

**All publications, oral presentations, or posters that include data or services from BMCA must acknowledge the facility.** The specific wording depends on the usage mode and the level of BMCA staff involvement:

1. **Trained user mode:** "The [instrument name] equipment was kindly provided by the Connective Base GmbH and the project was supported by the BOKU Core Facility Biomolecular & Cellular Analysis."
2. **Full-service mode (conducted by BMCA staff):** "We thank [staff name] for conducting [instrument name] experiments. The [instrument name] equipment was kindly provided by the Connective Base GmbH and the project was supported by the BOKU Core Facility Biomolecular & Cellular Analysis."

3. **Core Facility staff listed as co-author:** "The [instrument name] equipment was kindly provided by the Connective Base GmbH and the project was supported by the BOKU Core Facility Biomolecular & Cellular Analysis."

### Special Acknowledgment for ESRF Data

For any publications involving data collected at the European Synchrotron Radiation Facility (ESRF) via BMCA's Structural Analysis Unit, the following points must be included:

1. **In the Material & Methods section:**

Refer to the DOI of your beamline session, i.e.: "The data DOI of that session is 10.15151/ESRF-XYZ." (Users can retrieve their DOI at <https://data.esrf.fr> or generate one to reference specific datasets. Detailed information on this topic is available at <https://www.esrf.fr/ICAT>.)

2. **In the Acknowledgment section:**

"This project was supported by the Connective Base GmbH and the Structural Analysis Unit of the BOKU Core Facility Biomolecular & Cellular Analysis. We would like to thank the staff of the ESRF and EMBL Grenoble for assistance and support in using beamline(s) XX, YY, ZZ under proposal number MX2XXX (replace with applicable proposal number(s): MX2455, MX2529, MX2651, MX2743)."

## 14. Contact

For project discussions, services, or training requests:

[bmca@boku.ac.at](mailto:bmca@boku.ac.at)

## 15. Feedback and Evaluation

BMCA highly values user feedback and encourages users to share their experiences, suggestions, or concerns regarding facility operations with the [Head of BMCA](#) at any time. Users are invited annually to provide anonymous feedback through an online survey, which helps us continuously improve our services.

Feedback may include, but is not limited to:

- Suggestions for improving facility operations or workflows.
- Recommendations for new equipment or consumables to be added to the standard repertoire.
- General comments on instrument performance, training, or services.