

Core Facility User Guidelines

Albert-Ludwigs-University Freiburg

Schaenzlestr. 18, 79104 Freiburg

The services of the Core Facility *Signalling Factory* include: molecular cloning service, protein expression and purification, cell line generation and cell sorting, flow cytometry



Contact Persons:

Dr. Nicole Gensch, Signalling Factory

Tel.: 0761 203 97225

e-mail: nicole.gensch@bioess.uni-freiburg.de

Dr. Pavel Salavei, Protein Facility

Tel.: 0761 203 97169 (97218)

e-mail: pavel.salavei@bioess.uni-freiburg.de

Dr. Susan Lauw, Robotics

Tel.: 0761 203 97169

e-mail: susan.lauw@bioess.uni-freiburg.de

Efthimia Yousefi, BTA

Tel.: 0761 203 67508

e-mail: efthimia.yousefi@bioess.uni-freiburg.de

Concepcion Sainz Rueda, BTA

Tel.: 0761 203 97168

e-mail: concepcion.sainz.rueda@bioess.uni-freiburg.de

Shqipe Doroci, Laboratory assistant

Tel.: 0761 203 97168 (67901)

e-mail: shqipe.doroci@biologie.uni-freiburg.de

Facility Website:

<http://www.core-facilities-freiburg.de/freiburg-research-infrastructure/signalling-factory/>

<http://www.core-facilities-freiburg.de/freiburg-research-infrastructure/robotics-facility/>

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I. Overview of instrumentations

Category	Device
Flow Cytometry	CyAN™ ADP GALLIOS flow cytometer (Beckman-Coulter) CyFlow Cube cell sorter (Partec) Attune NxT Flow Cytometer S3 Cell Sorter (BioRad)
Electroporator Systems	Amaxa Nucleofector Gene Pulser MXcell (BioRad) Multiporator Electroporation System (Eppendorf) MicroPulser Electroporator (BioRad)
Measurements	BioTek Synergy H4 Hybrid Microplate Reader BioTek MultiFlo Microplate Dispenser Octet RED96 System Seahorse XFe96 Analyzer Zetasizer Nano ZS
Western Blot Detection	Fusion Fx Imaging System Odyssey CLx Imaging System
qPCR Thermocycler	CFX384 Touch qTOWER 2.2
Chromatography systems	Äkta Explorer Äkta Prime Plus 1 Äkta Prime Plus 2 Äkta Xpress Äkta Avant 25 FLEXAR™ LC Systems
Bioreactors and Fermenter	BioFlo 415 Fermenter CelliGen 310 (2.5 L and 14 L)
Sample Preparation	Freeze dryer Alpha 1-4 LSC plus High-Pressure Cell Disruption Ultrasonic Homogenizers Low-pressure plasma Laboratory Unit Vacuum Concentrator - SpeedVac

II. Access and equipment booking

Access to equipment of the Core Facilities Signalling Factory and Robotics is primary available to habitants of the Signalhaus and can be granted to members of the Albert-Ludwigs-University Freiburg only after a User Access Form has been signed and returned, stating which services are required and acknowledging that the user guidelines have been read and will be abided by.

Users are allowed to book machines once they have been trained to use them. Training sessions for the machines can be reserved by telephone or e-mail by contacting the facility staff.

The staff support is available Mo-Fri from 08:30-17:00 and should always be contacted in case of doubt in the operations.

To access the Signalhaus it is necessary to have a valid and activated UniCard from the University of Freiburg. Via USBLogon, specified for research groups, user have access to the facility equipment computers. Handling of USBLogon is summarized in our SOP (USBLogon BIOS Devices). Individual login and password can be required for single instruments.

Users are not allowed to reveal their login account data or UniCards to other people. Any infringement of the rules will result in a warning of the user and can lead to a temporary blocking of the user account. In case of repeated violations, a permanent exclusion from the Core Facility is possible.

User access to the Signalling Factory core facility may be denied if the user does not fulfill his or her responsibilities regarding proper use of the equipment.

Equipment Booking

Following registration, user will get access to an online calendar booking system. It is recommended to book only the time needed for experiment and use accordingly. Do not reserve time excessively than needed to use the device; this will block other users for using the instrument. Do not exceed the using time more than reservation time. Do not take another person's reservation time without consulting the respective person.

III. Data storage policy

The Facility does not back up user's data to a remote off site storage drive. Users are fully responsible for their own data files. It is recommended to copy the data as soon as the experiment is finished. The data will be deleted on a regular basis after 2 months.

IV. User responsibilities

Users have to attend an introduction before using an instrument and are obligated to operate the devices on the basis of the criteria learned in the introduction.

Instruments need to be booked in advance via the online calendar booking system.

The facility staff should always be contacted in case of any doubt concerning an operating step. Report any abnormal behavior or destruction of the device immediately to the facility staff.

Users must fill the log book for every login and use of the instrument. Repeated incorrect information or not filling out of the log sheet will result in exclusion from machine access.

During and after using the equipment and instruments, the workspace must be kept and left clean.

V. Signalling Factory full services and project support

With the present expertise, top-level instrumentation and the biological material collections, we are able to assist in the experimental project design down to data analysis.

To support operation of the Signalling Factory Unit and to maintain the high quality standard of our work we charge a fee for the services. The fee covers consumables and operating cost. See [Price list](#) for the current fees.

V.1. Cloning service

The Signalling Factory offers a full **molecular cloning service** for scientists and research members of the University of Freiburg and the University Medical Center Freiburg.

An *Application Form* and a *Plasmid Deposit Agreement* between the recipient scientist and the Signalling Factory will cover any request of service.

V.2. Cell line service

The Signalling Factory offers **generation of custom-designed stable cell lines** (over-expression or knock out) using appropriate methods.

For a **full cell sorting service**, a cell sorting request form must be submitted before start using the service in order to determine the potential biohazard risks.

V.3. Protein expression and purification services

The Signalling Factory provides a diverse expertise and infrastructure for small and large-scale protein expression and purification. Two main expression systems for protein production are offered: **bacterial and mammalian cells**. A request form must be filled to start a protein expression and purification service.

V.4. Repository

The Signalling Factory managed a repository of plasmids and expression vectors, cell lines and a shared antibody pool. The repositories were created to help scientist to share their material. Scientists can **deposit** their plasmid, cell lines or antibodies and the Signalling Factory take care of the quality control, MTA compliance and distribution to other scientists.

The purchase order regulations are summarized in the terms and conditions of the Signalling Factory.

VI. Robotics Facility full services and project support

For any interest to work together with Robotics Facility for assay or automation, we suggest to spend a first visit to our facility to discuss about the kind of support needed, equipment setup and potential application.

Machines connected with the liquid handling system (Tecan System) are only accessible for the liquid handling operator. If there is a demand to use it as stand-alone machine, it must be discussed with the Core Facility Robotics staff.

For access, usage and booking of instruments of the Robotics Facility please refer to [II. Access and equipment booking](#) of this user guideline.

VII. Facility acknowledgement in publications

User are obligated to acknowledge the Signalling Factory core facility in any scientific publication or oral presentation for which data was generated with the use of our equipment, our services, or with the help of our staff's expertise.

Acknowledgements help us securing internal as well as external funding to maintain and upgrade instruments in our facility.

The following statement can be used to acknowledge our facility:

“We thank the staff of the Core Facility Signalling Factory/Robotics in the Signalhaus of the Albert-Ludwigs-University Freiburg for help with ..., and the excellent support in data recording and analysis.”

“The authors acknowledge the scientific and technical assistance of the Core Facility Signalling Factory/Robotics of the Albert-Ludwigs-University Freiburg. We thank for help with their [*cell sorting, FACS, etc*] resources and their excellent support [in data recording and analysis].”

“We acknowledge the assistance of the Core Facility Signalling Factory/Robotics of the Albert-Ludwigs-University Freiburg.”

If any assistance is required with preparation of publications, do not hesitate to contact us.

Please send us a copy of your publication that includes data obtained from the use of our facility equipment and service.

Co-authorship

Whenever members of the Signalling Factory make significant contributions to the design of your experiment or to your research project, publication co-authorship should be considered.

In the case of collaboration projects carried out jointly by experts of the Signalling Factory core facility and research groups, the user has the agreement to put the scientists in the author list. Co-authorships have to be discussed in advance between the Signalling Factory and the principal investigators.

VIII. Price list

Fees for the use of the equipment are as follows:

Category	Device	Price/h
Flow Cytometry	CyAN™ ADP	4.00 €
	GALLIOS flow cytometer (Beckman-Coulter)	10.00 €
	CyFlow Cube cell sorter (Partec)	15.00 €
	Attune NxT Flow Cytometer	20.00 €
Electroporation Systems	Amaxa Nucleofector	5.00 €
	Gene Pulser MXcell (BioRad)	5.00 €
	Multiporator Electroporation System (Eppendorf)	2.00 €
	MicroPulser Electroporator (BioRad)	2.00 €
Measurements	BioTek Synergy H4 Hybrid Microplate Reader	5.00 €
	BioTek MultiFlo Microplate Dispenser	2.00 €
	Octet RED96 System	5.00 €
	Zetasizer Nano ZS	5.00 €
Western Blot Detection	Fusion Fx Imaging System	2.00 €
	Odyssey CLx Imaging System	2.00 €
qPCR Thermocycler	CFX384 Touch	5.00 €/1.5 h run
	qTOWER 2.2	5.00 €/1.5 h run
Chromatography systems	Äkta Explorer	6.00 €
	Äkta Prime Plus 1	5.00 €
	Äkta Prime Plus 2	5.00 €
	Äkta Xpress	7.00 €
	Äkta Avant 25	10.00 €
	FLEXAR™ LC Systems	7.00 €
Bioreactors and Fermenter	BioFlo 415 Fermenter	500 €/run
	CelliGen 310 (2.5 L and 14 L)	200 - 500 €/run
Sample Preparation	Freeze dryer Alpha 1-4 LSC plus	25.00 €/run
	High-Pressure Cell Disruption	15.00 €/run
	Ultrasonic Homogenizers	2.00 €
	Low-pressure plasma Laboratory Unit	10.00 €
	Vacuum Concentrator - SpeedVac	5.00 €

The following prices are for full services provided by the Signalling Factory. The prices quoted are for guidance and can vary for individual projects.

Service	Description	Price	
		University of Freiburg	Academic & non-profit laboratories
Construct generation (cloning) service	Clone your gene coding sequence into a wide range of expression vectors.	150.00 €	450.00 €
Stable cell line generation	Overexpression of gene of interest	350.00 €	1 000.00 €
	Knockout of gene of interest	700.00 €	1 800.00 €
Cell sorting	Full sorting service	25.00 €/h + 25.00 € setup fee	50.00 €/h + 25.00 € setup fee
Protein expression and purification	1 L bacterial expression and His-tag purification	200.00 €	600.00 €
	10 L bacterial expression using Fermenter	500.00 €	1 500.00 €
	Protein purification from cell supernatant	120.00 €	350.00 €
	Protein expression in mammalian cell lines using Bioreactor (1.5 L or 5.0 L)	300.00 – 700.00 €	from 900.00 €
Repository	Cell line stock	25.00 €	45.00 €
	Plasmid	25.00 €	45.00 €
	Human ORFeome cDNA clone	25.00 €	45.00 €
	Yeast ORFeome cDNA clone	25.00 €	45.00 €