**BIOCEV – Centre of Molecular Structure**

Project Application Form

**Project name:**

**Applicant**

First name: Surname:

E-mail: Phone:

Position (check box):

[ ]  Researcher (Ph.D. and above) [ ]  Ph.D. student [x]  MA student

Institution:

Institution type (check box):

[x]  University or other higher education organisation [x]  Public research organisation

Address (street, city, post code, country):

Type of access: [x]  Standard access [x]  BAG

**Project proposal**

**Max 2 A4 pages, BAG access max 5 A4 pages**

Core facility to be used:

Project: [x]  Internal (Biocev research project) [x]  External

Abstract:

Background (scientific context of the proposed project):

Objectives:

Expected results:

Experimental plan (methods/technical requirements):

References:

Quantification of the project (e.g. number of samples, hours of equipment time needed):

**Please fill in also core facility specific information on the following pages!!!**

# BIOCEV – Centre of Molecular Structure

|  |
| --- |
| **SAMPLE INFORMATION***In case of need (e.g. multiple samples), copy the table* |
| **Sample name:** |
| **Sample description:***(# sample and buffer description - concentration, molecular weight, pH, theoretical pI, usage of His-Tag)* |
| **Do the samples present any risk to human health and/or environment?** [ ]  No [ ] Yes **Class of risk:** [ ]  1 [ ]  2 [ ]  3*if Yes , please specify details in the Other specification field*  |
| **Source of origin:** |
| **Is the sample recombinant:** [ ]  Yes [ ]  No*if Yes , please specify the expression host:* |
| **The sample is:** *(tick if valid)* |
| **active virus**[ ]  | **virulence factor**[ ]  | **toxin**[ ]  | **prion protein**[ ]  |
| **Other specifications** |

**Please, choose the following services, which are you interested in**

|  |  |
| --- | --- |
| **Surface Plasmon Resonance (SPR) characterization** | [ ]  |
| **Prometheus DSF assay** | [ ]  |
| **Monolith NT.150 thermophoresis characterization** | [ ]  |
| **Monolith NT. LabelFree thermophoresis characterization** | [ ]  |
| **Isothermal titration calorimetry on the Microcal iTC200 instrument** | [ ]  |
| **Differential scanning calorimetry on the Microcal VP-DSC instrument** | [ ]  |
| **UV/visible precision spectroscopy** | [ ]  |
| **Circular Dichroism** | [ ]  |
| **Dynamic light scattering** | [ ]  |
| **FLS1000 Photoluminescence Spectrometer** |[ ]
| **Vertex 70v Fourier-transform Infrared (FTIR) Spectrometer** |[ ]
| **Robotic setup of crystallization plates using the Gryphon robot** | [ ]  |
| **Robotic setup of crystallization plates using the NT8 robot** |[ ]
| **Manual setup of crystallization plates** | [ ]  |
| **Manual setup of crystallization plates under an inert atmosphere** | [ ]  |
| **Automated monitoring of crystallization in the Formulatrix crystal hotel** | [ ]  |
| **Crystal handling and preparation for diffraction experiments** | [ ]  |
| **Crystal handling and preparation for diffraction experiments in oxygen-free conditions** | [ ]  |
| **In-situ (in the crystallisation plates) testing of crystal diffraction using the ISX stage** | [ ]  |
| **Testing of diffraction using mounted crystals and measurement of diffraction data** | [ ]  |
| **Diffraction data processing**  | [ ]  |
| **Assistance to solve a 3D structure (incl. a full 3D structure determination service on request)** | [ ]  |
| **Small angle X-ray scattering (SAXS) measurement** | [ ]  |
| **SAXS data processing** | [ ]  |
| **Assistance to interpret SAXS data (ab-initio modelling, rigid body modelling, …)** | [ ]  |
| **Measurement of X-ray diffraction data sets at synchrotron radiation sources** | [ ]  |
| **Measurement of SAXS data at synchrotron radiation sources** | [ ]  |
| **Precise molecular weight determination using Mass Spectrometry analysis** | [ ]  |
| **HPLC separation (sample preparation for MS)** | [ ]  |
| **Mass spec data interpretation** | [ ]  |
| **M(N)ALDI analysis** | [ ]  |
| **ESI electrospray analysis** | [ ]  |
| **Proteolysis for MS analysis** | [ ]  |
| **MS sample preparation and handling** | [ ]  |

# BIOCEV – Centre of Molecular Structure

# Biophysical techniques

Core facility – specific information

|  |  |
| --- | --- |
| **Isothermal Titration Calorimetry***This type of experiment is supposed to be managed by the user itself after special training* | [ ]  |
|  |
| **Experiment details:**Time of measurement required: ………….. days*If you plan to use other liquids than water-based buffers, please specify in “Other information” field !!!*Number of samples: ………. Blank measurement required? [ ]  Total measurements expected: ............Do you request measurement at different temperatures? [ ] Yes [ ] No*if Yes, please specify, experiments are routinely performed at 25°C* |
| **Type of experiments:**Standard titration experiments [ ] Single titration injection (continuous titration) [ ]  |
| **Method of evaluation:** Evaluation using in-build software fitting (*binding site model with fixed stoichiometry*) [ ] Expert evaluation (*one or two independent binding site model, cooperativity, competitive binding, kinetics*) [ ]  |
| **Other information, or If more description is needed than is covered by the form** |

|  |  |
| --- | --- |
| **Differential Scanning Calorimetry***This type of experiment is supposed to be managed by the user itself after special training* | [ ]  |
| Time of measurement required: ………….. days |
| Specify the temperature range of the experiment:*If you plan to use other liquids than water / water-based buffers, please specify in “Other information” field !!!* |
| **Type of experiments planned:** |
| **Other information, or if more description is needed than is covered by the form** |

|  |  |
| --- | --- |
| **Microscale Thermophoresis (Monolith NT .115, Monolith NT. LabelFree)/ Differential Scanning Fluorimetry (Prometheus NT.48)***This type of experiment is supposed to be managed by the user itself after special training*  | [ ]  |
| **Used instrument for measurement:**[ ]  Monolith NT.115[ ]  Monolith NT. LabelFree[ ]  Prometheus NT.48 |  |
| **Number of runs required**: ………….. *(1 run = 1 binding curve of 16 points for Microscale Thermophoresis / 48 samples using Differential scanning fluorimetry)* |
| **Specify used label (for Monolith NT.115)**: …………………………… |
| **Specify used label-free (for Monolith NT. LabelFree)**: …………………………… |
| **Extinction coef. at 280 nm (for Prometheus NT.48):** ……………..  |
| **Type of experiments planned:** |
| **Other information, or if more description is needed than is covered by the form** |

|  |  |
| --- | --- |
| **Surface Plasmon Resonance (BioRad ProteOn XPR36)***This type of experiment is supposed to be managed by the user itself after special training* | [ ]  |
| Time of measurement required: ………….. days |
| **Sensor chips for measurement:**[ ]  I will use my own chip[ ]  I need a chip provided by CFIf you want sensor chips to be supplied by CF, please fill in the number of chips of each type you request.………….x Covalent immobilization GLCGLMGLHNLCHTGHTE [ ]  I need appropriate immobilization chemicals |
| **Type of experiments planned:** |
| **Other information, or if more description is needed than is covered by the form** |

|  |  |
| --- | --- |
| **Dynamic Light Scattering (Zetasizer Nano ZS90, Zetasizer Ultra)***This type of experiment is supposed to be managed by the user itself after special training* | [ ]  |
| Time of measurement required: …….. hours |
| **Temperature of experiments:****Type of experiments:** |
| **Other information, or if more description is needed than is covered by the form** |

|  |  |
| --- | --- |
| **FLS1000 Photoluminescence Spectrometer***This type of experiment is supposed to be managed by the user itself after special training* | [ ]  |
| Time of measurement required: …….. hours |
| **Sample:****Temperature of experiments:****Type of experiments:** |
| **Other information, or if more description is needed than is covered by the form** |

|  |  |
| --- | --- |
| **Vertex 70v Fourier-transform Infrared (FTIR) Spectrometer***This type of experiment is supposed to be managed by the user itself after special training* | [ ]  |
| Time of measurement required: …….. hours |
| **Sample:****Temperature of experiments:****Type of experiments:** |
| **Other information, or if more description is needed than is covered by the form** |

|  |  |
| --- | --- |
| **Circular Dichroism (Chirascan Plus)/ UV/Vis Spectrophotometer (Specord 50 Plus)***This type of experiment is supposed to be managed by the user itself after special training* | [ ]  |
| Circular dichroism [ ] UV/Vis spectrophotometer [ ] Time of measurement required: ………….. hours |
| **Cuvette types required:**[ ]  1 mm path[ ]  2 mm path[ ] 5 mm path[ ] 10 mm path[ ]  10 mm path; 50 µl for Specord 50 Plus[ ]  10 mm path; 100 µl for Specord 50 Plus[ ]  10 mm path; 1400 µl for Specord 50 Plus |
| **Type of experiments:** |
| **Other information, or if more description is needed than is covered by the form** |

BIOCEV – Centre of Molecular Structure Crystallization and Diffraction

Core facility – specific information

|  |
| --- |
| **GENERAL SERVICE INFORMATION** |
| Are you interested in data evaluation service (if relevant)? [ ]  Yes [ ]  No*if Yes , please specify in which method* |
| Are you interested in training in data processing (if relevant)? [ ]  Yes [ ]  No*if Yes , please specify in which method* |
| Are you interested in expert consulting assistance? [ ]  Yes [ ]  No*if Yes , please specify in which method* |

**Please, indicate your interest in specific service(s) on the next pages.**

|  |  |
| --- | --- |
| **Crystallization and Diffraction** |  |
| Number of samples: ………. |
| **Requested technique:**Robotic setup of crystallization plates – Gryphon robot [ ]  Number of screen plates per sample required: ….. *specify screens required in the “Other information” field*Robotic setup of crystallization plates – NT8 robot [ ]  Number of screen plates per sample required: ….. *specify screens required in the “Other information” field*Manual setup of crystallization plates [ ]  Manual setup of crystallization plates in oxygen-free conditions [ ]  96 well plate storage and automated monitoring in the Formulatrix hotel [ ] Crystal handling and preparation for diffraction experiments [ ] Crystal handling and preparation for diffraction experiments in oxygen-free conditions [ ] In-situ (in the crystallisation plates) testing of crystal diffraction using the ISX stage [ ] Testing of diffraction and measurement of diffraction data [ ]  Number of crystals: ………..Diffraction data processing [ ]  Assistance in 3D structure solution (incl. a full 3D structure determination service on request) [ ]  Small angle X-ray scattering (SAXS) measurement [ ] SAXS data processing [ ] Assistance with SAXS data interpretation [ ] Measurement of X-ray diffraction data sets at synchrotron radiation sources [ ] Measurement of SAXS data at synchrotron radiation sources [ ]  |
| **Other information, or if more description is needed than is covered by the form** |

BIOCEV – Centre of Molecular Structure

Structural mass spectrometry

Core facility – specific information

**Sample characteristics**

*Organism:*

Sample origin (solution, gel etc; incl. solvent/buffer/salts/detergent information), max. 100 words:

*Protein in gel*

[x] 1D [ ] 2D % T: Staining (MS compatible):

*Protein in solution:*

Sample concentration: µM

Sample volume: µL

Sample storage requirements:

Sample stability:

Other:

**Services required:**

[x]  Protein fractionation/separation (1D, LC)

[x]  Determination of precise MW of intact protein

[x]  Protein identification

[x]  Characterisation of protein modifications. Please specify:

[ ]  Relative protein quantification

[ ]  Other molecules identification. Please specify:

[ ]  Hydrogen/deuterium exchange

[ ]  Chemical cross-linking

[ ]  Limited proteolysis

[ ]  Analysis of small molecules (metabolites)

[ ]  MS data processing and reporting