**CEITEC**

**Project application form**

**Project name:**

**Applicant**

First name: Surname:

E-mail: Phone:

Position (check box):

Researcher (Ph.D. title and higher)  Ph.D. student  MA student

*In case of Ph.D. or MA student, include also name, surname and contact details of principal investigator (PI):*

*First name PI: Surname PI:*

*E-mail PI: Phone PI:*

Institution:

Institution type (check box):

University or other higher education organisation  Public research organisation

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

**Project proposal (max 2 A4 pages)**

Core facility to be used:

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!**

**Please proceed to particular Core Facility application form:**

[CEITEC - Biomolecular Interaction and Crystallization 3](#_Toc472499447)

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CEITEC - Biomolecular Interaction and Crystallization

**Core facility specific information**

|  |  |  |  |
| --- | --- | --- | --- |
| **SAMPLES 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** | | | |

|  |
| --- |
| **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, choose the following services, which are you interested in**

|  |  |
| --- | --- |
| **Calorimetric titration** |  |
| **Equipment requested:**  VP-iTC *(This type of equipment is supposed to be managed by the user itself after special training)*  AutoiTC200 *(This type of equipment is supposed to be managed by the technican of CF)* | |
| **Experiment details: *(VP-ITC only)***  Time of measurement required: ………….. days  *If you plan to use other liquids than water-based buffers, please specify in “Other information” field !!!*  *(****AutoiTC200 only****)***:** Number of samples: ………. Number of replicates per sample: ………..  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** *(AutoiTC200 only)***:**  Standard titration experiments  Competitive titration experiments for low or ultrahigh affinity interactions  Single titration injection (continuous titration) | |
| **Method of evaluation** *(AutoiTC200 only)***:**  Automated evaluation using in-build software fitting (*one independent binding site model and/or one independent 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)/ 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  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)**: …………………………… | |
| **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 (Biacore T200)**  *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 CF  If you want sensor chips to be supplied by CF, please fill in the number of chips of each type you request.  ………….x Covalent immobilization    I need appropriate immobilization chemicals  ………….x NTA (for metallo-affinity binding)  ………….x Hydrophobic (for lipid mono-/bilayer)  ………….x Gold (for complete user-defined surface chemistry modification) | |
| **Type of experiments planned:** | |
| **Other information, or if more description is needed than is covered by the form** | |

|  |  |
| --- | --- |
| **Surface plasmon resonance (SPR Imaging multichannel system)**  *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 CF  *Note: the Core Facility provides the unmodified sensor chips with gold layer only. If you require the chip coating services, please specify in “Other information” field !!!* | |
| **Type of experiments planned:** | |
| **Other information, or if more description is needed than is covered by the form** | |

|  |  |  |
| --- | --- | --- |
| **Analytical ultracentrifugation** | |  |
| Number of samples: ………. | Number of total measurements expected: ……….. | |
| **Type of experiments:**  Sedimentation velocity (1 day/experiment)  Sedimentation equilibrium (4 days/experiment)  *Note, that max 3 samples may be measured in one experiment !!!* | | |
| **Other information, or if more description is needed than is covered by the form** | | |

|  |  |
| --- | --- |
| **Dynamic light scattering**  *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** | |

|  |  |
| --- | --- |
| **CD/ fluorescence measurement**  *This type of experiment is supposed to be managed by the user itself after special training* |  |
| Time of measurement required: ………….. hours | |
| **Cuvette types required:**  1 mm path  2 mm path  5 mm path  10 mm path  5 mm fluorescence compatible  10 mm fluorescence compatible  I need to change the typical configuration. Please specify in the “Other information” field below. This requires technical assistence.  (*Standard configuration includes: peltier, standard cuvette, CD detector, fluorescence monochromator*) | |
| **Type of experiments:** | |
| **Other information, or if more description is needed than is covered by the form** | |

|  |  |
| --- | --- |
| **Protein Crystallization** |  |
| Number of samples: ………. | |
| **Requested technique:**  Standard screen set-up  Number of screen plates per sample required: ………..  *specify screens required in “Other information” field* Plate storage and inspection  Prolonged inspection period: 4 + ………. weeks  *standard time of plate inspection is one month (4 weeks), plates are typically stored for additional 5 months without inspection*  Optimization of crystallization  Number of screen plates per sample required: ………..  Advanced crystallization techniques  *specify in “Other information” field* | |
| **Other information, or if more description is needed than is covered by the form** | |

CEITEC - X-ray Diffraction and Bio-SAXS Core Facility

**Core facility specific information**

**Abbreviations:**

BAG - Block Allocation Group Proposal, no description of individual samples is necessary,

SP – Standard Proposal with a single sample or with multiple samples

**Non-biological SAXS service required:**





**Mode of service:**

SAXS characterization of non-biological nanostructures is provided only as a measurement, without any advanced analysis of resulting SAXS data

**Numerical quantification of requirement for non-biological SAXS characterization:**

Estimated number of samples for non-biological SAXS characterization 

for a selected period of time (check one)



**CEITEC - X-ray Diffraction and Bio-SAXS Core Facility**

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**Biological SAXS service required:**









**Mode of service:**





**Numerical quantification of requirement for biological SAXS characterization:**

Estimated number of samples for biological SAXS characterization 

for a selected period of time (check one)



**CEITEC - X-ray Diffraction and Bio-SAXS Core Facility**

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SP – Standard Proposal with a single sample or with multiple samples

**Diffraction service for non-biological single crystal sample(s) required:**





**Mode of service:**





**Numerical quantification of requirement for non-biological single crystal diffraction:**

Estimated number of samples for non-biological X-ray diffraction experiments 

for a selected period of time (check one)



**CEITEC - X-ray Diffraction and Bio-SAXS Core Facility**

**Abbreviations:**

BAG - Block Allocation Group Proposal, no description of individual samples is necessary,

SP – Standard Proposal with a single sample or with multiple samples

**X-ray service with biological sample(s) required:**







**Mode of service:**





**Numerical quantification of requirements for biological single crystal diffraction:**

Estimated/required number of hours of X-ray time 

for a selected period of time (check one)



**CEITEC - X-ray Diffraction and Bio-SAXS Core Facility**

**SAFETY DATA SHEET for Biological samples**

|  |
| --- |
| **SAMPLES INFORMATION**  *In case of multiple samples, copy the table* |
| Sample name: |
| Sample description: |
| Is the sample an active? |
| Does the sample present any risk to human health and/or environment?    *If Yes , please specify in the Other information field* |
| Please, specify biosafety level: |
| GMO ? |
| Please, specify source of origin: |
| Precautions for safe handling: |
| Personal protective equipment: |
| Other specifications: |

**CEITEC - X-ray Diffraction and Bio-SAXS Core Facility**

**SAFETY DATA SHEET for non Biological Samples**

|  |
| --- |
| **SAMPLES INFORMATION**  *In case of multiple samples, copy the table* |
| Sample name: |
| Sample description: |
| Does the sample present any risk to human health and/or environment?    *If Yes , please specify in the Other information field* |
| Is the sample expected to be:  1434143514411440  1439143614381442 |
| Other hazards: |
| Signal word: |
| Description of first aid measures: |
| Precautions for safe handling: |
| Conditions for safe storage, including any incompatibilities: |
| Personal protective equipment: |
| Reactivity: |
| Chemical stability: |
| Possibility of hazardous reaction with: |
| Incompatible with materials: |
| Please, specify source of origin: |
| Other specifications: |

CEITEC - Nanobiotechnology

**Core facility specific information**

**Equipment required:**

☐ NtegraVita / ☐ SolverNEXT / ☐ NanoWizzard3 / ☐ ForcerRobot / ☐ FastScanBio /  
☐ SciFlexArrayer S3 / ☐ IX81-CLSM-FV1200

**Type of analysis:**

☐ AFM (dry) / ☐ AFM (liquid) / ☐ AFM (advanced) / ☐ ink-jet deposition / ☐ confocal microscopy /  
☐ bioconjugation / ☐ other (specify)

**Sample(s) description (origin, size, history, compatibility, safety…):**

**Expected project duration (hours):**

**Service required:**

☐ Full service (measurement and analysis) / ☐ Technical assistance / ☐ No assistance

CEITEC - Josef Dadok National NMR Centre

**Core facility specific information**

**Sample description**

|  |  |
| --- | --- |
| Aggregation state (solid/liquid): |  |
| Molecular weight: |  |
| solvent/buffer/pH: |  |
| Temperature (typical/max allowed): |  |
| Concentration: |  |
| Stability: |  |
| Specify if the sample is isotopically labelled: | natural isotopic abundance  15N  13C  2H  other - please specify: |
| Comments: |  |

***Type of NMR experiments (e.g. proton 1D, 13C with proton decoupling, DEPT, COSY, HMBC etc.)***

***Equipment required (specify magnetic field, probehead, pulseprogram, etc., if necessary):***

***Time needed to prepare and deliver samples:***

***Estimated measuring time required (days):***

***Previous NMR measurements on the sample (please check all that apply):***

none

1D1H

2D Homonuclear

2D Heteronuclear

Heteronuclear 3D NMR

other - please specify:

***Please provide previously measured spectra if available!***

**Service required:**

Full service (after consulting)

Full measurement and assistance with analysis

Full measurement without analysis

Assistance with measurement and analysis

Assistance with measurement

No assistance

CEITEC - Cryo-electron Microscopy and Tomography

**Core facility specific information**

**Sample description**

|  |  |
| --- | --- |
| Sample name: |  |
| Total molecular mass: |  |
| Concentration: |  |
| Buffer (composition, pH): |  |

**Sample(s) description (origin, oligomeric state, stability, purity, biosafety level, decontamination, etc.):**

**Equipment requested:**

FEI Titan Krios

FEI Tecnai F20

FEI Versa3D

**Type of analysis:**

Single particle analysis

Tomography

FIB milling

**Service required:**

Full service (data acquisition and image processing)

Technical assistance

No assistance

CEITEC - Proteomics

**Core facility specific information**

**Sample description**

Organism:

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

Sample history (description of sample prep procedures), max. 200 words:

Gel electrophoresis:

1D 2D pI range: % T: Staining:

**Services required:**

Protein fractionation/separation (1D, 2D GE, IEF, LC)

Analysis of intact protein

Protein identification

Characterisation of protein modifications

Absolute and relative protein quantification