

# NANBIOSIS Access Protocol

**NOTE: THIS PROTOCOL APPLIES ONLY FOR THOSE SERVICES IDENTIFIED AS SINGULAR AT: <http://www.nanbiosis.es/nanbiosis-services/>, WHICH ARE ALSO IDENTIFIED AT THE ONLINE ORDER REQUEST FORM: <http://www.nanbiosis.es/order-request/> FOR ALL THESE UNIQUE SERVICES, AT LEAST 20% OF THEIR CAPACITY IS OPEN UNDER COMPETITIVE ACCESS. SEE ANNEX 1 FOR DETAILS ON % OF OPENNESS FOR EACH SERVICE.**

## I. SCIENTIFIC AND TECHNICAL CONDITIONS:

As a Unique Scientific and Technological Infrastructure (ICTS), NANBIOSIS offers at least 20% of its capacity under open competitive access. Under this premise, the access of the scientific community to NANBIOSIS is a competitive access which is determined by this protocol. Scientific and technical conditions concerning the access to ICTS of users are subject to the development of projects that require the use of equipment and processes for research on nanomaterials, biomaterials, and medical systems, including preclinical validation, or to facilitate the training to existing techniques in NANBIOSIS, and which have been previously approved by the Access Committee.

All the applications competing under this modality must be submitted through the online tool by filling the Order request form available at: <http://www.nanbiosis.es/order-request/>, or by clicking on the **Order Request** tool.

There are two kinds of access according to the applicant's experience, the scientific challenge of the proposals and the kind of service required: remote and on-site (self-service).

- **Remote service:**

Once the application has been approved by the Access Committee, the project is performed by the NANBIOSIS' technical staff, under the supervision of the research staff. In general, the applicant's assistance is required, but not his presence. Many times, a previous discussion with researchers who coordinate the required units is needed to find the best strategy to implement the project.

Generally, these are researchers, external users from companies, other research centres and hospitals who do not know the procedures or, knowing them, they do not work directly with similar tools or seek techniques that supplement their own. It is also common that the user is only interested in the solution to a specific need or problem.

- **On-site service** is a scientific use available in some services of some units where it is possible to access as self-service. In this case, the equipment of the units is used by experienced users that do not have the facilities of NANBIOSIS in their own centres. For this modality, it is necessary to check the user's qualifications before allowing them to use the equipment. It is sometimes possible, in certain units and specific

circumstances, to qualify them previously. Users are advised by our technical staff on the use of equipment to work independently.  
The following table lists the units and the type of access offered:

| Detail of type of service per Unit*                          | Remote* | On-site* |
|--|---------|----------|
| 1. Protein Production Platform                               | X       | x        |
| 2. Customized Antibody Service                               | X       |          |
| 3. Synthesis of Peptides Unit                                | X       | x        |
| 6. Biomaterial Processing and Nanostructuring Unit           | X       | x        |
| 7. Nanotechnology Unit                                       | X       | x        |
| 8. Micro/nanotechnology Unit                                 | X       | x        |
| 9. Synthesis of Nanoparticles Unit                           | X       |          |
| 10. Drug Formulation Unit                                    | X       |          |
| 12. Nanostructured Liquid Characterization Unit              | X       |          |
| 13. Tissue and Scaffold Characterization Unit                | X       | x        |
| 14. Cell Therapy Unit  | X       | x        |
| 15. Functional Characterization of Magnetic Nanoparticles U. | X       |          |
| 16. Surface Characterization and Calorimetry Unit            | X       |          |
| 17. Confocal Microscopy Unit                                 |         | x        |
| 18. Nanotoxicology Unit                                      | X       |          |
| 19. Clinical Test Lab.                                       | X       | x        |
| 20. <i>In vivo</i> Experimental Unit                         | X       | x        |
| 21. Experimental Operating theatres Unit                     | X       |          |
| 22. Animal Housing Unit                                      | X       |          |
| 23. Assisted Reproduction Unit                               | X       | x        |
| 24. Medical Imaging Unit                                     | X       | x        |
| 25. NMR I Unit   | X       | x        |
| 26. NMR II Unit  | X       |          |
| 27. High Performance Computing Unit                          | X       | x        |
| 28. Nanoimaging Unit   | X       | x        |
| 29. Oligonucleoti Platform                                   | x       | X        |

\*Type of access depends also on the specific service. See details of the services offered by each Unit at the Catalogue of Services for each Unit at <http://www.nanbiosis.es/nanbiosis-services> and Annex 1. Regarding user's required and accredited experience, there are two types of users.

- **Type 1: Non-doctor researchers**, usually working on their doctoral thesis. The proposal to develop and, when appropriate, PhD student's stay must provide him/her with useful knowledge in the context of the thesis.
- **Type 2: PhD or with a minimum of three years accredited research experience.**

Researcher users must belong to R&D institutions, public and private centres or companies, part of a research team or research group or, if applicable, part of a scientific department or similar unit. The access is open to both the national and international scientific community.

As for administrative requirements, first of all, the user must complete the online '**Access Application Form**' and confirm the compliance of the requirements specified there.

Once the project is accepted, all assistance needed for the execution of their experiment will be at users' availability. Specifically:

- Tips on project preparation.
- Advice and assistance in the preparation of the samples.
- Access to the use of facilities and instrumentation.
- Enabling training for the use of the methods.
- Support during the processes.
- Support for the assessment of results.
- Support during equipment maintenance.
- Support for the design of additional experiments.
- Backing in administrative matters, offered by administration managers of NANBIOSIS

Once the access requests are accepted, the Access Protocol, which is explained later, must be followed.

To access the services, the application must be submitted through <http://www.nanbiosis.es/order-request/> tool.

## II. COST OF THE ACCESS FOR THE FACILITY AND CONSEQUENCES FOR THE USERS WHERE RELEVANT

The user will assume the 100% of the service to cover maintenance and operation costs, except when funding from public resources, for instance from the National Plan or specific funds assigned to support existing ICTS, are available to specifically finance access to NANBIOSIS. These costs will be calculated based on specific rates existing for the services provided by the different units, which can be found at the website for each Unit, by clicking on **Services & Rates**. In those rates, different costs depending on the type of access, for instance self-service mode, if available, are considered.

Once the proposal is approved, costs and deadlines are estimated and communicated to the user. The user will contact the Unit/s involved to know the estimated costs. Before starting the project, it is necessary that customer accepts the budget. Any deviation of the project will be considered, estimated and reported to the user.

In terms of billing, this could be made by either, the institution/s where the Units involved are located, through CIBER-BBN and/or JUMISC and/or Bionand, always on basis on published rates.

### III. ACCESS CRITERIA AND PROCEDURES

A diagram of the procedure can be consulted on the Annex 2.

#### i. Description of the access Protocol

NANBIOSIS' technical and scientific access conditions were explained in the previous section.

The potential user must register and complete an application that will be evaluated by the Access Committee. There is a form available to this end that must be filled and send online though <http://www.nanbiosis.es/order-request/>. It is easy to access the online form by clicking on **Order Request** tool.

Four regular calls will be launched yearly in order the scientific community to apply for access on basis on competitive criteria, as indicated in this protocol. Applications received outside the periods established by the competitive calls could be considered if the availability of the infrastructures is not completed. Dates of calls are announced at <http://www.nanbiosis.es/call/>

Once the application is approved and the unit or units involved determined, user will be contacted and invited to get in touch with the Scientific Coordinators of the required units to communicate necessary details and set the dates, conditions, etc.

The details of the general access to facilities protocol are shown below, although specific conditions for each institution/Unit will be communicated to user accordingly. In case of selecting the self-service modality, once the proposals have been approved, access protocols for each of the units involved will be communicated to users by the corresponding Unit.

#### ii. Access Committee (members, functions)

After receiving the application, a preliminary administrative evaluation will be conducted to determine the compliance of the proposal requirements. If necessary, a period of time will be given to the applicant to make the corresponding corrections. This first evaluation will be carried out by:

- **Dr. Theodora Tsapikouni;** Responsible for Infrastructures and Research Services of CIBER BBN. Coordinator of NANBIOSIS
- **Dr. Fernanda Carrizosa;** Deputy Coordinator of NANBIOSIS

Also, a reviewed is carried out to check if this application is supported or is part of a project funded in a competitive call, from either source, regional, national or international; the title of the project and the reference needs to be indicated in the application form when submitting the Order Request. In this case, and as long as there is not over demand of the requested services, previous confirmation with the demanded Unit, the project is approved automatically.

On the other hand, if the project is not supported or is not part of a project funded in a competitive call, the application form will be sent to the Access Committee in order to evaluate the project according to the criteria specified in the next section. The members of this Access Committee are listed below:

- Jaume Veciana, Scientific Director of NANBIOSIS; Director of Molecular Nanosciences and Organic Materials Dpt. (ICMAB-CSIC)
- Francisco Miguel Sánchez Margallo; Assistant Director of NANBIOSIS and Scientific Director of JUMISC
- Ruth Schmid. Vicepresident SINTEF, Norway
- Miguel Angel de Gregorio (Prof. of Interventional Radiology, University of Zaragoza)
- Stefania Raimondo, Professor of the University of Turin, Italy
- Virginio García Martínez (University of Extremadura, Spain)
- Hector Ferral (Department of Radiology, Section of Interventional Radiology, NorthShore University HealthSystem)
- M<sup>a</sup> Eugenia Fernández Santos, (Director of Cellular Production Unit and Regenerative Medicine, Director of GMP facilities of Hospital Gregorio Marañón)

Due to the high complexity and variability of the units and large number of services involved in NANBIOSIS, both, the scientific Director and deputy director of NANBIOSIS take part in the committee to determine the Units that better fit to develop the requested project, unless the user has previously selected the required Unit.

Furthermore, for solving specific technical issues, if necessary, the Access Committee could also consult the corresponding Scientific Responsible of the different units involved, although these scientist do not take part in the Access Committee. Also, these Coordinators can be consulted by the applicants before applying for competitive access (contact details at [www.nanbiosis.es](http://www.nanbiosis.es)).



These scientific Heads of the units are internationally recognized researchers of the associated areas of the units that they coordinate.

|  |   |
|--|---|
| <b>1. Protein Production Platform</b>                | Dr. Neus Ferrer, Professor of the UAB, with a great career in design, engineering and biological production of multifunctional recombinant proteins for diagnostic and therapeutic purposes.  |
| <b>2. Customized Antibody Service</b>                | Dr. M <sup>a</sup> Pilar Marco; IQAC-CSIC Research Professor, among her areas of work, the production of specific bio receptors tailored to diagnosis.  |
| <b>3. Synthesis of Peptides</b>                      | Dr. Fernando Albericio, (UB) whose main research lines are the development of peptides as drugs and pharmacological nanoconjugates for new treatments for biomedical application.   |
| <b>6. Biomaterial Processing and Nanostructuring</b> | Dr. Nora Ventosa, (ICMAB-CSIC) stands out in the development and application of green technologies suitable for the preparation of materials and nano-structured systems, synthesis and self-assembly of molecules in 1, 2 -and 3- dimensions and nanoparticulate molecular materials (vesicular systems, nanoparticles, nanosuspensions, etc.) for releasing the supply of drugs or contrast agents. |
| <b>7. Nanotechnology</b>                             | Prof. Josep Samitier, Professor of Physics at the University of Barcelona (UB), Director of the Institute for Bioengineering of Catalonia (IBEC) and Coordinator of the Spanish Nanomedicine Platform.  |
| <b>8. Micro/Nanotechnology</b>                       | Dr. Rosa Villa (CNM-CSIC) has a lot of experience in physiological signal biomonitoring, innovating in the design and materials used in the manufacture of new micro sensors, innovations relative to the substrate such as the use of Silicon carbide or selective deposition of Carbon Nanotubes (CNTs) to microelectrodes.   |
| <b>9. Synthesis of Nanoparticles</b>                 | Prof. Jesús Santamaría, (UZ) who works mainly in research of biofunctionalisable magnetic nanoparticles for diagnostic applications in MRI and controlled drug delivery.  |
| <b>10. Drug Formulation</b>                          | Prof. José Luis Pedraz; Professor of Pharmacy at the UPV / EHU with consolidated experience in drug formulation and micro and nano-encapsulation of active ingredients and living cells.  |
| <b>12. Liquid Characterization</b>                   | Prof. Carlos Rodriguez-Abreu, (IQAC-CSIC) internationally renowned as researcher in auto-aggregation surfactants systems: Preparation of nanomaterials (nanoparticles, meso /macro porous materials) and systems for controlled release of drugs and biomolecules.  |
| <b>13. Tissue &amp; Scaffold Charact.</b>            | Prof. Miguel Angel Martínez. Professor at University of Zaragoza, with long experience in Bioengineering and especially focused on the development of behavioral models in soft biological tissues and more specifically in the cardiovascular system.  |
| <b>14. Cell Therapy</b>                              | Dr. Javier García Casado, (JUMISC) has a long experience monitoring the immune response using <i>in vivo</i> and <i>in vitro</i> tests. He is currently the responsible of JUMISC's Cell Therapy Unit whose objective is to enhance the participation of the centre in preclinical trials with multipotent stem cells.  |
| <b>16. Surface Charact. &amp; Calorimetry</b>        | Prof. M <sup>a</sup> Luisa González, (UEX) who focuses her research on the study of soft tissue adhesion with applications in hernias and in the cardiovascular system.   |
| <b>17. Confocal Microscopy Service</b>               | Dr José Manuel Bellón, (UAH) whose research activity focuses on Tissue engineering of soft tissues with applications in hernias and cardiovascular system.  |

|   |  |
|---|--|
| <b>18. Nanotoxicology</b>                           | Dr. Ramón Mangues, (HSCSP) focused on preclinical and clinical oncology: generation of animal models for prognostic or predictive biomarkers identifying and using molecular and imaging technology and identification of molecular targets for drug development and release systems.  |
| <b>19. Clinical Tests Lab</b>                       | Dr. Beatriz Moreno, with extensive experience in clinical test development under regulatory frames.  |
| <b>20. In vivo Experimental Unit</b>                | Dr. Ibane Abasolo (HUVdH), has worked on projects related to the development of new tumour biomarkers for molecular biofunctionalisation of nanocomposites, <i>in vitro</i> and <i>in vitro</i> validation of new diagnostic nanotechnological systems, cancer imaging and treatment, development and validation of nano-targeting strategies of solid tumour through nanoparticles. |
| <b>21. Operating Theatres</b>                       | Dr. Francisco M. Sánchez Margallo, Scientific Director of the Jesus Usón Minimally Invasive Surgery Centre (JUMISC). He has extensive experience in healthcare innovation, dissemination of knowledge and research in minimally invasive techniques such as laparoscopy and endoscopy as well as in health technology.   |
| <b>22. Animal Housing</b>                           | D. Luis Dávila Gómez, Head of the Animal Housing Service of JUMISC, Veterinary Specialist in Health and Wellness of Research Animal, with experience in the design and control of preclinical trials as well as Secretary of JUMISC's Ethics Committee of Animal Experimentation.  |
| <b>23. Assisted Reproduction</b>                    | Dr. José Mijares Gordún, embryologist at the Extremadura Institute of Assisted Reproduction, has a long experience in adaptation and analysis of human techniques with respect to techniques in animal models.   |
| <b>24. Medical Imaging</b>                          | Dra. Verónica Crisóstomo. Researcher in the Endoluminal Therapy and Diagnosis Department of the Jesus Usón Minimally Invasive Surgery Centre has ample experience in disease modelling in large animals and image guided interventions, with special focus cardiovascular diseases and their therapy by minimally invasive and image guided procedures.                              |
| <b>25. NMR: Biomedical Applications I</b>           | Prof. Carles Arús. Professor at the UAB, his main line of research has been the improvement of abnormal brain mass diagnosis and prognosis in humans and preclinical models noninvasively by nuclear magnetic resonance (NMR).   |
| <b>26. NMR: Biomedical Applications II</b>          | Prof. Ramón Martínez-Máñez. Professor at the UPV, Scientific Director of CIBER-BBN and Head of the Interuniversity Research Institute for Molecular Recognition and Technological Development (IDM) of Valencia. He is an active researcher in the field of supramolecular chemistry of hybrid organic-inorganic nanostructured gated materials.                                     |
| <b>27. High Performance Computing</b>               | Prof. Pablo Laguna, full Professor of Signal Processing and Communications in the Department of Electrical Engineering at the Engineering School, and a Researcher at the Aragón Institute for Engineering Research (I3A), both at the University of Zaragoza.   |
| <b>28. Nanoimaging</b>                              | Dr. María Luisa García-Martín, head of the Nanoimaging Unit (Bionand), has a lot of experience in the field of Magnetic Resonance Imaging and Spectroscopy applied to biomedical research  |
| <b>29. Oligonucleotide Synthesis Platform (OSP)</b> | Prof. Ramon Eritja, has more than 30 years expertise in the development of modified oligonucleotides, including DNA/RNA synthesis, purification and characterization of oligonucleotides.  |

### iii. **Assessment Process**

The assessment of NANBIOSIS platform access application is evaluated by the Access Committee.

Currently, this assessment is made regarding the following parameters:

- Scientific quality and interest of the proposal (40%).
- Adaptation to platform profile provided and feasibility of the proposal in the context of the available access to ICTS (20%).
- Justification for the applicant, endorsed by their Thesis supervisor or, alternatively, by the scientist responsible of the unit or Head Investigator of the project to which the applicant is assigned (10%).
- Potential interest to industry and/or translational research (20%).
- Applicant Curriculum (10%).

Scores of less than 50 points are discarded.

The scientific-technological quality of those applications derived from R&D projects funded in competitive calls by a regional, national or European R&D funding agency or administration that, consequently, are supported by a previous assessment process, will be considered good enough and this parameter will be positively scored.

In case of access availability, applications from companies interested in subcontracting the services of NANBIOSIS to carry our R&D projects will be positively scored.

## IV. **ACCESS TO THE FACILITY**

### i. **Access Schedule**

- The equipment of the 27 units included in NANBIOSIS is available approximately 280 days per year, that is, every day except Sundays and national and regional holidays.
- Opening hours will be the same of the institution where the unit is located. However, it is possible to contact the management unit through [www.nanbiosis.es](http://www.nanbiosis.es)
- For the corresponding Units, authorization from the Scientific responsible of the unit must be requested to access to the facility, outside the opening hours established by the institution where is located the infrastructure, except emergencies.
- Any person not included in the list of users can't enter the facilities.

### ii. **Access to the facilities**

- Each Scientific Responsible of the unit is able to deny access if any incompatibility with other works in progress is observed at the same time, e.g. an experiment is running. Access will need to be rescheduled according to the availability of the Unit.
- It is compulsory to be accredited to access the laboratories and, if required, show the corresponding card.

Access to other facilities throughout the different Units will be possible only with express permission given by the Scientific Responsible and following the rules for access to the premises.



### iii. Entrance and Exit to facilities

- Entrance and exit to facilities will follow the standards set by each unit. Such rules must be available to users at its application's approval, once the applicant contacts the corresponding Unit.

### iv. Access to materials and products

- It is not allowed to introduce any type of equipment, material and/or consumable product without express authorisation of the Scientist Responsible.
- It is forbidden to introduce cartons, boxes and packaging.
- It is forbidden to introduce food or drink.
- Any material (previously authorized) that enters to the facilities must be cleaned and, if applicable, sterilized before being used.
- Animals (previously authorized) that may be introduced will follow the established quarantine period.

## V. RULES OF BEHAVIOUR

### i. Behaviour in the facility

General rules of behaviour are aimed at guaranteeing the safety of people

- It is mandatory to use gowns and gloves in labs, and depending on the units, may be necessary to use hat, and mask.
- Do not touch any unsterile object with gloves to avoid contamination, if it occurs gloves should be changed.
- Do not run or make sudden movements or violent in the facilities.
- Regarding any problem with the equipment, decisions of the personnel that accompany the person must respect.
- If the facilities remain in the dark by a power failure, it is compulsory to go out of the place in the company of the personnel.
- In case of doubt, consult the Scientific Responsible.
- It is strictly forbidden to take pictures inside the facility without the authorisation of the management.
- It is forbidden the access to places where other projects are developing.
- It is denied the access to other computer terminals than those assigned.

### ii. Behaviour in the facilities

- There could be chemicals and gases in the facilities that are particularly flammable. In case of fire or activation of any alarm or in any emergency situation, users must leave the facilities as fast as possible warning then the person responsible of maintenance.

## Annex 1. Services available at NANBIOSIS. In red the services offered by CIBER-BBN and in green the offered by JUMISC.

**Table 1. UNIQUE SERVICES: AT LEAST 20% OF THEIR CAPACITY IS OPEN UNDER COMPETITIVE ACCESS**

| Code   | Service  | Unit | TYPE OF SERVICE | % OPENNESS | TYPE OF ACCESS |
|--------|--|------|-----------------|------------|----------------|
| U1-S1  | Molecular cloning  | U1   | UNIQUE          | 20%        | On-site&Remote |
| U1-S2  | Bioproduction of proteins  | U1   | UNIQUE          | 20%        | On-site&Remote |
| U1-S3  | Protein purification   | U1   | UNIQUE          | 20%        | On-site&Remote |
| U2-S2  | Hapten synthesis   | U2   | UNIQUE          | 20%        | Remote         |
| U2-S3  | Preparation of bioconjugates and molecular probes  | U2   | UNIQUE          | 20%        | Remote         |
| U2-S4  | Polyclonal Antibody Production   | U2   | UNIQUE          | 20%        | Remote         |
| U2-S5  | Monoclonal Antibody Development  | U2   | UNIQUE          | 20%        | Remote         |
| U2-S6  | Hybridoma cell culture antibody production   | U2   | UNIQUE          | 20%        | Remote         |
| U2-S7  | Antibody purification  | U2   | UNIQUE          | 20%        | Remote         |
| U2-S8  | Immunochemical methods development   | U2   | UNIQUE          | 20%        | Remote         |
| U3-S1  | Synthesis of peptides and characterisation   | U3   | UNIQUE          | 25%        | On-site&Remote |
| U3-S2  | Modification of the peptides   | U3   | UNIQUE          | 25%        | On-site&Remote |
| U3-S3  | Special amino acids for peptide synthesis  | U3   | UNIQUE          | 25%        | Remote         |
| U3-S4  | Peptide libraries  | U3   | UNIQUE          | 25%        | Remote         |
| U6-S1  | Use of High-pressure laboratory-scale plant with 50, 100 and 300 m reactors for the processing of biomaterials. Processing of cytotoxic compounds when required. | U6   | UNIQUE          | 20%        | Remote         |
| U6-S2  | High-pressure phase analysis– solubility, emulsification   | U6   | UNIQUE          | 20%        | Remote         |
| U6-S3  | Thermal analysis of solid materials  | U6   | UNIQUE          | 20%        | Remote         |
| U6-S4  | Analysis of particle size, concentration and Z-potential of nanoparticles  | U6   | UNIQUE          | 20%        | On-site&Remote |
| U6-S5  | Analysis of particle morphology  | U6   | UNIQUE          | 20%        | Remote         |
| U6-S11 | Specific density of powders  | U6   | UNIQUE          | 20%        | On-site&Remote |
| U6-S12 | Packed (tapped) density  | U6   | UNIQUE          | 20%        | On-site        |
| U6-S13 | Detection of labeled nanoparticles and exosomes by fluorescence mode   | U6   | UNIQUE          | 20%        | On-site&Remote |
| U6-S14 | Quantitative studies of biomolecular interactions by calorimetric measurements   | U6   | UNIQUE          |            | On-site        |
| U7-S3  | Characterization by SEM  | U7   | UNIQUE          | 40%        | On-site&Remote |
| U7-S4  | Lithography by e-beam  | U7   | UNIQUE          | 40%        | On-site&Remote |
| U7-S7  | Photolithography and soft-lithography manufacturing processes  | U7   | UNIQUE          | 40%        | On-site&Remote |
| U7-S8  | Fabrication of Chromium masks  | U7   | UNIQUE          | 40%        | Remote         |
| U7-S9  | Thin layer deposition  | U7   | UNIQUE          | 40%        | Remote         |
| U7-S11 | Contact angle  | U7   | UNIQUE          | 40%        | On-site&Remote |
| U7-S12 | Contact Microarrayer   | U7   | UNIQUE          | 40%        | on-site        |
| U8-S1  | Design, fabrication and encapsulation of microelectrodes   | U8   | UNIQUE          | 20%        | On-site&Remote |
| U8-S2  | Electrochemical and electrical characterization of the above mentioned microelectrodes.  | U8   | UNIQUE          | 20%        | On-site&Remote |
| U8-S4  | Graphene growth services   | U8   | UNIQUE          | 20%        | On-site&Remote |
| U8-S5  | Deposition of thin films (Polyimide, Parylene) for the fabrication of flexible devices or encapsulation purposes   | U8   | UNIQUE          | 20%        | On-site&Remote |
| U8-S6  | Encapsulation or fabrication of 3D structures via 3D printing.   | U8   | UNIQUE          | 20%        | On-site&Remote |
| U9-S1  | Synthesis of NPs by laser induced-pyrolysis  | U9   | UNIQUE          | 20%        | Remote         |
| U9-S2  | Synthesis of NPs by lwe synthesis  | U9   | UNIQUE          | 20%        | Remote         |
| U9-S3  | Characterization of nanoparticles  | U9   | UNIQUE          | 20%        | Remote         |
| U9-S4  | Drug delivery determination  | U9   | UNIQUE          | 20%        | Remote         |
| U9-S6  | Synthesis of NPs by microfluidics technologies   | U9   | UNIQUE          | 20%        | Remote         |

|         |   |     |        |     |                |
|---------|---|-----|--------|-----|----------------|
| U10-S1  | Design & Development of pharmaceutical forms  | U10 | UNIQUE | 25% | Remote         |
| U10-S2  | Design & Development of micro- & nanocapsules   | U10 | UNIQUE | 25% | Remote         |
| U10-S3  | Design & Development of solid lipid nanoparticles(SLN)  | U10 | UNIQUE | 25% | Remote         |
| U10-S4  | Design & Development of living cells containing microparticules   | U10 | UNIQUE | 25% | Remote         |
| U10-S5  | Biopharmaceutical evaluation of dosage forms,   | U10 | UNIQUE | 25% | Remote         |
| U10-S6  | Setup and validation of analytical techniques   | U10 | UNIQUE | 25% | Remote         |
| U10-S7  | Pharmacokinetic pre-clinical studies  | U10 | UNIQUE | 25% | Remote         |
| S10-S8  | 3D bio-impression of scaffolding for regenerative medicine.   | U10 | UNIQUE | 25% | On-site&Remote |
| S10-S9  | Characterization and development of pulmonar formulations.  | U10 | UNIQUE | 25% | On-site&Remote |
| U12-S1  | Characterization of colloidal dispersions by Dynamic and Static Light Scattering (DLS and SLS).           | U12 | UNIQUE | 25% | Remote         |
| U12-S2  | Characterization of liquid crystals   | U12 | UNIQUE | 20% | Remote         |
| U12-S3  | Phase behavior of surfactant systems  | U12 | UNIQUE | 25% | Remote         |
| U12-S4  | Rheology  | U12 | UNIQUE | 25% | Remote         |
| U12-S5  | Surface and interfacial tensiometry   | U12 | UNIQUE | 40% | Remote         |
| U12-S6  | Contact angle   | U12 | UNIQUE | 40% | Remote         |
| U12-S7  | Differential refractometry  | U12 | UNIQUE | 20% | Remote         |
| U12-S8  | Characterization of nanostructured materials by high resolution optical microscopy with spectral analysis | U12 | UNIQUE | 20% | Remote         |
| U13-S3  | FATIGUE TESTS INSTRON 8874  | U13 | UNIQUE | 20% | Remote         |
| U13-S4  | DYNAMIC MECHANICAL ANALYSIS INSTRON 8874  | U13 | UNIQUE | 20% | Remote         |
| U13-S5  | UNIAXIAL TENSILE TEST INSTRON MicroTester   | U13 | UNIQUE | 20% | Remote         |
| U13-S6  | CONFINED COMPRESSION TEST INSTRON MicroTester   | U13 | UNIQUE | 20% | Remote         |
| U13-S7  | UNIAXIAL TENSILE NANO BIONIX MTS  | U13 | UNIQUE | 20% | On-site        |
| U13-S8  | ATOMIC FORCE MICROSCOPY IDENTATION TEST   | U13 | UNIQUE | 20% | On-site        |
| U15-S1  | Magnetometry  | U15 | UNIQUE | 25% | Remote         |
| U15-S2  | Relaxometry   | U15 | UNIQUE | 25% | Remote         |
| U16-S1  | XPS   | U16 | UNIQUE | 25% | Remote         |
| U16-S2  | Elipsometry   | U16 | UNIQUE | 25% | Remote         |
| U16-S3  | Calorimetry   | U16 | UNIQUE | 25% | Remote         |
| U16-S4  | Characterization by Tof-SIM   | U16 | UNIQUE | 20% | Remote         |
| U17-S1  | Confioal Microscopy Service   | U17 | UNIQUE | 30% | On-site        |
| U18-S1  | IN VITRO NANOTOXICOLOGY   | U18 | UNIQUE | 20% | Remote         |
| U18-S2  | IN VIVO NANOTOXICOLOGY, preclinical histopathology in animal models                                       | U18 | UNIQUE | 20% | Remote         |
| U18-S3  | Toxicología in vivo   | U18 | UNIQUE | 20% | On-site&Remote |
| U20-S1  | Non-invasive optical imaging (bioluminescence and fluorescence)   | U20 | UNIQUE | 20% | Remote         |
| U20-S2  | Animal models in oncology and rare diseases   | U20 | UNIQUE | 20% | Remote         |
| U20-S3  | In vivo Experimental consultancy  | U20 | UNIQUE | 20% | Remote         |
| U20-S4  | In vivo Efficay Assays of drugs, nanomedicines, biomaterials and others                                   | U20 | UNIQUE | 20% | Remote         |
| U20-S5  | In vivo Toxicology  | U20 | UNIQUE | 20% | On-site&Remote |
| U20-S6  | In vivo ADME and biodistribution assays   | U20 | UNIQUE | 20% | Remote         |
| U20-S7  | In vivo PK/PD assays  | U20 | UNIQUE | 20% | Remote         |
| U20-S8  | Immunotoxicity assays   | U20 | UNIQUE | 20% | On-site&Remote |
| U20-S9  | X-ray imaging in vitro and in vivo  | U20 | UNIQUE | 20% | Remote         |
| U20-S10 | Ultrasound imaging in vivo  | U20 | UNIQUE | 20% | Remote         |
| U20-S11 | Histological processing, section and staining   | U20 | UNIQUE | 20% | Remote         |
| U20-S12 | Inmuniistochemistry on histological samples   | U20 | UNIQUE | 20% | Remote         |
| U25-S1  | NMR spectrometer 250MHzrobot/250MHz auto/360MHz/400MHZ  | U25 | UNIQUE | 20% | On-site&Remote |
| U25-S2  | NMR spectrometer 500MHz/600MHz  | U25 | UNIQUE | 20% | On-site&Remote |
| U25-S3  | NMR spectrometer 400 MHz with HRMAS/CPMAS probes  | U25 | UNIQUE | 20% | On-site&Remote |
| U25-S4  | 500 MHz spectrometer HPLC-NMR   | U25 | UNIQUE | 20% | On-site&Remote |

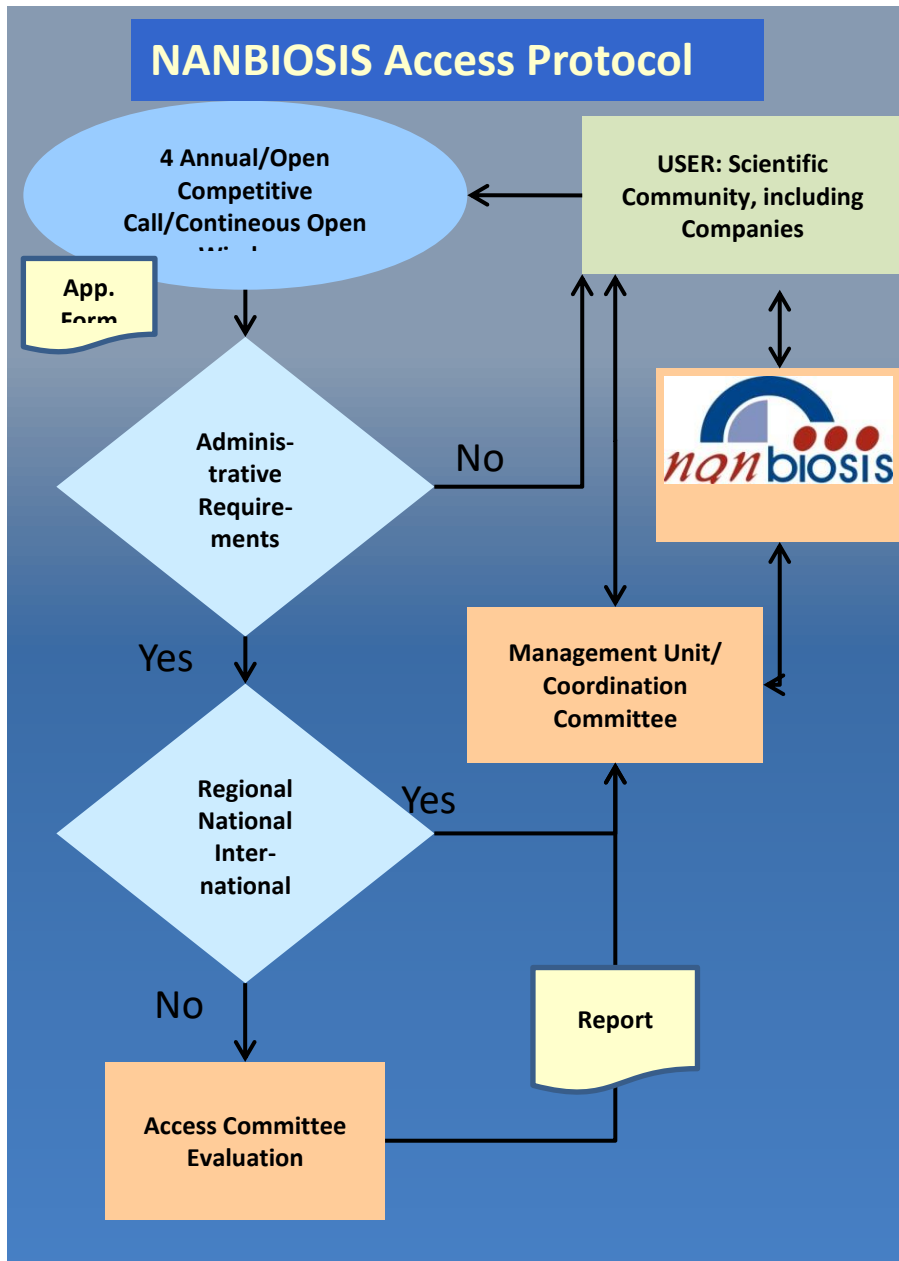
|        |   |     |        |     |                |
|--------|---|-----|--------|-----|----------------|
| U25-S5 | Preclinical horizontal spectrometer Biospec 7T  | U25 | UNIQUE | 20% | On-site&Remote |
| U25-S6 | Dynamic nuclear polarizer HyperSense®   | U25 | UNIQUE | 20% | On-site&Remote |
| U25-S7 | Focused Microwave Fixation system   | U25 | UNIQUE | 20% | On-site&Remote |
| U25-S9 | Access to specific software and database  | U25 | UNIQUE | 20% | Remote         |
| U26-S2 | Acquisition of mono and bidimensional spectra   | U26 | UNIQUE | 20% | On-site&Remote |
| U26-S3 | NMR experiments in solid state  | U26 | UNIQUE | 20% | Remote         |
| U26-S4 | Metabolomic Studies   | U26 | UNIQUE | 20% | Remote         |
| U26-S5 | In vivo NMR of small animals(zebrafish,Drosophila   | U26 | UNIQUE | 20% | Remote         |
| U27-S1 | Remote access to HPC  | U27 | UNIQUE | 20% | On-site&Remote |
| U27-S2 | Software installation on demand   | U27 | UNIQUE | 20% | On-site&Remote |
| U27-S3 | Biomedical signals processing, especially in cardiology   | U27 | UNIQUE | 20% | On-site&Remote |
| U27-S4 | Modeling of the functional behaviour of tissues and organs  | U27 | UNIQUE | 20% | On-site&Remote |
| U27-S5 | Massive parallel processing   | U27 | UNIQUE | 20% | On-site&Remote |
| U27-S6 | Mass storage  | U27 | UNIQUE | 20% | On-site&Remote |
| U27-S7 | Detection of Imaging Biomarkers   | U27 | UNIQUE | 20% | Remote         |
| U29-S1 | Synthesis of oligonucleotides at various different scales (100 microg to 5 mg) and purification using HPLC and/or desalting.  | U29 | UNIQUE | 20% | On-site&Remote |
| U29-S2 | Modification of oligonucleotides  | U29 | UNIQUE | 20% | Remote         |
| U29-S3 | Special nucleotides for oligonucleotide synthesis.  | U29 | UNIQUE | 20% | Remote         |
| U14-S1 | Cell cultures   | U14 | UNIQUE | 20% | On-site&Remote |
| U14-S2 | Flow Cytometry  | U14 | UNIQUE | 20% | On-site&Remote |
| U14-S3 | Biomechanic evaluation of plantar pressure in large animal models   | U24 | UNIQUE | 20% | On-site        |
| U14-S4 | Cytokine quantification assays  | U14 | UNIQUE | 20% | On-site&Remote |
| U14-S5 | Determination of cytokine concentration by flow cytometry   | U14 | UNIQUE | 20% | On-site&Remote |
| U14-S6 | Lymphocyte proliferation assay  | U14 | UNIQUE | 20% | On-site&Remote |
| U19-S1 | Preclinical studies (in vivo toxicology, local and systemic tolerance, efficacy, safety and PK/PD studies)                    | U19 | UNIQUE | 30% | On-site&Remote |
| U19-S2 | Clinical Analysis Laboratory  | U19 | UNIQUE | 30% | On-site&Remote |
| U21-S1 | In vivo Efficacy Assays of drugs, nanomedicines, biomaterials and others  | U21 | UNIQUE | 20% | Remote         |
| U22-S1 | Animal Housing  | U22 | UNIQUE | 25% | Remote         |
| U22-S6 | In vivo safety and efficacy studies of nanomaterials, biomaterials and new drugs in rodent and non-rodent species. (SINGULAR) | U22 | UNIQUE | 60% | On-site        |
| U22-S7 | Development of animal models of disease in large animals (SINGULAR)   | U22 | UNIQUE | 60% | On-site        |
| U22-S8 | Dosing of test substances and non clinical specimen drawing in rodent and non-rodent species (SINGULAR)                       | U22 | UNIQUE | 60% | On-site        |
| U24-S2 | Medical Imaging for Minimally Invasive Surgery  | U24 | UNIQUE | 20% | On-site&Remote |
| U24-S1 | Evaluation of therapies for cardiovascular disease  | U24 | UNIQUE | 20% | On-site&Remote |
| U23-S2 | Embryo culture media viability studies  | U23 | UNIQUE | 25% | On-site&Remote |
| U23-S3 | Micromanipulation and microinjection  | U23 | UNIQUE | 25% | On-site&Remote |
| U23-S1 | In vitro fertilisation studies and Embryo culture media viability studies   | U23 | UNIQUE | 25% | On-site&Remote |
| U23-S4 | Sperm, Oocyte and embryo cryopreservation   | U23 | UNIQUE | 25% | On-site&Remote |
| U23-S5 | In vitro Maturation   | U23 | UNIQUE | 25% | On-site&Remote |
| U23-S6 | IMSI system   | U23 | UNIQUE | 25% | On-site&Remote |
| U23-S7 | Laser System and Biopsed of blastomeres   | U23 | UNIQUE | 25% | On-site&Remote |
| U23-S8 | Oosight system  | U23 | UNIQUE | 25% | On-site&Remote |
| U23-S9 | Quality control for Human Assisted Reproduction clinics.  | U23 | UNIQUE | 25% | On-site&Remote |

**Table 2. REGULAR SERVICES: OFFERED UNDER REQUEST BY CONTACTING DIRECTLY THE CORRESPONDING UNIT**

| Code   | Service  | Unit | TYPE OF SERVICE | % OPENNESS | TYPE OF ACCESS |
|--------|--|------|-----------------|------------|----------------|
| U1-S4  | Consultancy in protein production  | U1   | REGULAR         | NA         | On-site&Remote |
| U1-S5  | Training Courses in protein Production   | U1   | REGULAR         | NA         | On-site&Remote |
| U1-S6  | Criopreservation   | U1   | REGULAR         | NA         | On-site&Remote |
| U2-S1  | Scientific and technological support   | U2   | REGULAR         | NA         | Remote         |
| U6-S6  | Fluorescence spectroscopic analysis  | U6   | REGULAR         | NA         | On-site&Remote |
| U6-S7  | UV-Vis spectroscopic analysis  | U6   | REGULAR         | NA         | On-site&Remote |
| U6-S8  | Visual observation   | U6   | REGULAR         | NA         | On-site&Remote |
| U6-S9  | Centrifugation   | U6   | REGULAR         | NA         | On-site        |
| U6-S10 | Treatment of sample by ultrasound probe  | U6   | REGULAR         | NA         | On-site        |
| U7-S1  | Training Courses in the Use of micro/nanotechnology equipment                        | U7   | REGULAR         | NA         | On-site        |
| U7-S10 | Advising and consulting in micro and nanofabrication                                 | U7   | REGULAR         | NA         | On-site&Remote |
| U9-S5  | Consultancy  | U9   | REGULAR         | NA         | Remote         |
| U25-S8 | NMR consultancy for processing and interpreting data                                 | U25  | REGULAR         | NA         | On-site&Remote |
| U26-S6 | Training Advice and assistance   | U26  | REGULAR         | NA         | On-site&Remote |
| U22-S3 | In vivo toxicology in rodent and non-rodent species                                  | U22  | REGULAR         | NA         | On-site        |
| U22-S4 | In vivo biocompatibility studies of medical devices in rodent and non-rodent species | U22  | REGULAR         | NA         | On-site        |
| U22-S5 | In vivo PK/PD assays in rodent and non-rodent species                                | U22  | REGULAR         | NA         | On-site        |



## Annex 2. Diagram of the Access Protocol



- **1 call/year!!** ([www.nanobiosis.es/call](http://www.nanobiosis.es/call) )
- **On-line application form through** ([www.nanabiosis.es/order-request.es](http://www.nanabiosis.es/order-request.es))
- **Administrative Evaluation.**
- **Competitive Evaluation; 2 options:**
  - ✓ **Competitive projects & Companies =>ok=> If availability => contact with Unit**
  - ✓ **Others=>Access Committee => ok => If availability => contact with Unit**