



EXPRESSION OF INTEREST – PROJECT: CNOS

Prot. N. 263 del 01/08/2019

Expression of interest for the provision of a supply for activities to be carried out under the Project: CNOS (Nanophotonics and Optoelectronics Center for Human Health - Centro di Nanofotonica e Optoelettronica per la Salute dell'uomo) - POR CAMPANIA FESR 2014 / 2020 CUP B81C17000050007 - SURF 17063BP000000001

Expression of interest to take a part in the procedure relating to the purchase of:

SURFACE PLASMON RESONANCE (SPR) SYSTEM

Details and technical characteristics are shown below:

1. The system features an eight-needle parallel setup with a microfluidic injection concept which enables each channel to provide high quality, reference-subtracted data. The simple 8×2 flow cell-setup makes planning, preparation, and operation straightforward and easy to understand. A fluidic delivery system is required for accurate kinetic determinations and the novel microfluidic system of SPR system has been refined to optimize stability and robustness while not compromising on performance.
2. The system supports the analysis of samples on 4 x microplates of 96 or 384 wells, in standard format or with deep wells up to 2 ml in volume. Both the samples and the reagents are taken from standard plates without the need for special containers and can be accessed during the run for assistance.
3. The system is well suited to the analysis of a wide variety of samples including the smallest fragments or large multi-domain proteins, even in crude matrices.
Main applications include:
 - a. Selection of biotherapeutic or small-molecule hits based on affinity and kinetic ranking
 - b. Characterization and optimization of selected binders based on detailed kinetic and affinity information
4. The high sensitivity allows analysis of the smallest organic compounds even for low-affinity interactions (KD in the millimolar range), which is important for reliable small molecule fragment screening.
5. A single solution for interaction analysis in both screening and characterization
6. High throughput screening of small-molecule fragments (more than 2000 in a day)
7. High-quality kinetic characterization of more than 60 interactions in 5 h
8. 60 h unattended runtime with queuing abilities and rapid multi-run evaluations
9. Confident interaction analysis of small molecules binding to complex targets
10. Confident differentiation of high-affinity binders

CENTRO REGIONALE INFORMATION COMMUNICATION TECHNOLOGY SCRL

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11. Fine temperature control: Passively heated or cooled needles ensure that the samples have the appropriate temperature when being analysed, even at elevated flow rates
12. High accuracy: Association rate constant (k_a): Proteins: $10^3 - 10^9 \text{ M}^{-1}\text{s}^{-1}$; LMW: $10^3 - 10^7 \text{ M}^{-1}\text{s}^{-1}$. Dissociation rate constant (k_d): $10^{-6} - 1 \text{ s}^{-1}$.
13. A wide range of chips, which support the analysis of a wide range of interactions. Several capture kits offer numerous options to capture the most common antibodies and tags, significantly reducing the time and effort required for experiment development.

Software - Details and technical characteristics:

1. Provide graphical display of the run method, with workflow steps that guide the user from method definition to preparation of sample plates.
2. Predefined methods, preloaded with application relevant default settings, are available for all major assays.
3. Allow 4 different kinetics characterization modality:
 - a) Multi-cycle kinetics → Suitable for many samples against one ligand or when different ligands are to be immobilized
 - b) Single-cycle kinetics → No regeneration needed and beneficial for long dissociation times
 - c) 2D kinetics → Sample diluted in two dimensions to cover a wide concentration range and no pre-knowledge of affinity or regeneration needed
 - d) Parallel kinetics → Short run time for few samples and kinetic analysis in only two cycles (one blank cycle)
4. Allow injection of two buffers at the same time, in order to create large matrices of buffer variations can be prepared in microplates and rapidly tested. The buffer scouting approach allows testing of 96 buffer variations in less than 80 min.
5. The presence of package can be selected immediately after the start and unlocked for more advanced features or to support specific applications for screening low molecular weight fragments to speed up experiment setup and optimize analysis.
6. The presence of package for determining the concentration of active protein with reliability and elimination of data transfer errors.
7. A package to integrate seamlessly into GxP-regulated workflows. The package provides validated software supporting GLP/GCP/GMP and 21 CFR Part 11 compliance, and includes validation support. Features in the GxP package include:
 - a) Data integrity – access control and enforced version handling
 - b) User authorization levels – administrator, developer, and user levels set access rights to software functions



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- c) Published procedures for operational control – enables assay run and evaluation settings to be locked together in routine assays
- d) Audit trail – tracks record modifications and maintains complete version histories for published procedures

References

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Procurement procedure

The selection of competitors who responded to "Expression of interest" will occur by a budget procedure through the principle of better score.

Participation requirements

Economic operators wishing to participate have meet the requirements set forth in points 1 and 2 below, and have provide the information referred to in points 3 and 4 below:

1. General requirements: non-existence of the causes of exclusion from participation in tenders pursuant to art. 80 of Legislative Decree 50/2016;
2. Professional suitability requirements: registration with the C.C.I.A.A., or, for foreign economic operators, equivalent certification;
3. Information on economic / financial capacity: global turnover and amount relating to supply similar to that covered by this expression of interest for the last two years;
4. Information on technical and professional capacity: presentation of the list of the main furniture presented in the last two years with the indication of the articles, dates and recipients, public or private, of the services and / or furniture themselves.

Due to the complexity and specificity of the service to be entrusted the aforementioned requirements have been requested in order to select an operator that guarantees the performance of the service, with maximum reliability, in the time required.

The lack of possession, even of one of the only requisites, determines the failed invitation to the subsequent procedure.

The maximum number of economic operators invited to the procedure is eight.

A minimum number of participants is not required for the validity of this market survey. The investigation does not give operators any reliance on the subsequent invitation to the procedure.



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The Contracting Authority reserves the right to suspend, modify or cancel the procedure relating to this notice and not to follow up any negotiated procedures for the assignment of works.

Duration

The supply have be effected within and no later than 20/12/2019.

Estimated amount

The total maximum amount is Euro 350.000,00 € (three hundred fifty thousand / 00) plus VAT

Technical and economic evaluation criteria

The supply will be awarded according to the criterion of the most economically advantageous offer, with the assessment methods that will be explained in the technical-administrative specification that will be attached to the invitation letter. As a preliminary point, it should be noted that the CeRICT will assign a maximum of 100 points to each offer, of which a technical score of a maximum of 70 (seventy) points as established by a technical commission, and an economic score of a maximum of 30 (thirty) points.

How to present the expression of interest

The eligible subjects have send the following documents in response to the "Expression of Interest":

- o Attachment 1 – The declaration of adhesion to the expression of interest;
- o Attachment 2 – Economic and financial capabilities document;
- o Attachment 3 – Technical and professional capabilities document;
- o Certificate of incorporation/Company's chamber of commerce registration.
- o Photocopy of subscriber's valid identity document, according to the articles 38 and 47 of DPR 445/2000
- o Any other relevant document.

All documents have be received by CeRICT sclr:

- By certified mail to the address cerict@pec.it within the 30/08/2019 the object must contain the reference to this expression of interest Prot. N. 263.

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Advertising

The communication platforms identified for this procedure consist of certified electronic mail and publications on computer sites.

Any additional information and / or clarifications on this notice must be requested exclusively by e-mail to the cerict@pec.it box.

Head of procedure

The head of procedure is Prof. Antonello Cutolo.

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ANNEX 1

CNOS Abstract

(Nanophotonics and Optoelectronics Center for Human Health) (Centro di Nanofotonica e Optoelettronica per la Salute dell'uomo)

This project aims **to develop a National Research Infrastructure capable of developing Scientific Research of Excellence for fighting Oncologic Pathologies, using as enabling technology Optoelectronics and Nanophotonics.**

Supported by the growing and continuous development of nanotechnologies, nano-biophotonics in the latest decades has led to a real technological revolution in the healthcare sector.

The unique ability of light to interact with matter on a Nano metric scale can be exploited to perform molecular-level analysis, favouring on one hand a greater understanding of the origin of the disease (for the prevention and diagnosis) and on the other hand providing new techniques and approaches for treating the diseases themselves. Nano-scale integration of biophotonic components and devices allows performing detections and measurements quickly, sensibly and accurately and results to be particularly useful for *point-of-care* applications.

The aforesaid proposal was born to underline the impression that **advanced technology and innovation can provide a real driving force for the fight against oncological pathologies.**

The CNOS wants to become an IR characterized by a high technological and scientific potential, able to promote and rule the **scientific quality** and the **technological quality**.

Taking advantage of a team of excellence researchers, a good mix of young people and exciting researchers in various fields of IR interest and expert researchers at international level, the CNOS is thought as an IR with a high scientific and technological potential, able **to dialogue with the most qualified national and international structures** in the field of oncologic research, with the specific purpose of producing innovation and able to:

- Stimulate the excellence research in the fight against oncological pathologies in important strategic areas;



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- Promote cultural activities, scientific research and technological development both in terms of advancing knowledge and service to the local community;
- Explore innovative frontiers of knowledge with particular regard to the interdisciplinary approaches and the applicative dimension;
- Allow the international opening for the Campania region, thanks to cooperation and exchange activities with realities of national and international research;
- Spread innovation, involving the community and the local economy;
- strengthen the collaboration between the local authorities and the international institutes of research, to provide high standard of training to its own research staff, to the students, to the visitors and to the staff involved
- Generate intellectual properties to promote the data sharing to the scientific community or the technological transfer.

The IR Nano bio-photonics thanks to the technological quality that intends to develop and, by taking advantage of the equipment and latest generation instruments, other than ensuring the research excellence, will be an essential instrument for:

- Giving impulse to the innovation and technology transfer as **patent licensing** and **partnership agreement with companies operating in the bio-medical field**, that in turn will promote:
 - The **development of intellectual properties** in co-ownership with **Campania Region** and to their **protection and transfer** to productive realities able to transform them in long lasting goods;
 - The co-development of products, technologies and methodologies and the creation of new productive processes, such as **start-up** and **spin-off**;
 - The birth and the direct involvement of **companies knowledge-based type** in the process of realization and planning of innovation for the resolution or management of issues in the field of **human health** and in general in the field of intervention where Nanophotonics has its interest.

The provision of a series of **services to international users** and able to guarantee the **self-financing** of the whole structure.