



Fundació Hospital Universitari Vall Hebron - Institut de Recerca (VHIR)

EXPEDIENT NUMBER: 2025-055 WGS SEQUENCING (PI23/00161)

**DOCUMENT OF TECHNICAL SPECIFICATIONS
NOT HARMONIZED TRADE – OPEN PROCEDURE**

**WHOLE GENOME SEQUENCING AND OPTICAL GENOME MAPPING SERVICE
PROVIDED BY PROJECT PI23/00161, FOR THE TRANSLATIONAL IMMUNOLOGY
RESEARCH GROUP FUNDACIÓ HOSPITAL UNIVERSITARI VALL HEBRON (VHIR).**

*Project PI23/00161, funded by
Instituto de Salud Carlos III
(ISCIII) and co-funded by
European Union*



Clause 1. Aim of the tender

The purpose of this tender procedure is to contract the long-read whole genome sequencing (LR-WGS) service and Optical Genome Mapping (OGM) services for Project PI23/00161 entitled "*Identificación y caracterización funcional de variantes genéticas estructurales en pacientes con errores congénitos de la inmunidad*", funded by Instituto de Salud Carlos III (ISCIII) and co-funded by European Union for the Translational Immunology Research Group at the Vall Hebron University Hospital Foundation - Research Institute (VHIR).

These two molecular technologies form the basis of the FIS PI23/00161 project. This project aims to identify structural variants in patients with primary immunodeficiencies. The two technologies to be tendered (LR-WGS + OGM) are currently the most efficient for identifying this type of variant.

The long read (LR) sequencing service cannot be carried out on site as the necessary equipment is not supplied, so it has to be contracted out to an external provider. In the case of the OGM technique, the necessary equipment is also not supplied, so it has to be contracted out to an external provider.

Both services covered by the contract (LR-WGS and OGM) cannot be divided into lots, as one of the main focuses of the study is to analyse both technologies in tandem, and in order to integrate the results, all information must be centralised. Furthermore, given the nature of the project, we will sometimes need to perform both techniques simultaneously on a single sample from the patients included in the project. For this reason, a single supplier is required for all techniques and requirements. Both techniques require the use of high molecular weight DNA (HMW-DNA), which is extracted using a specialised procedure. Not dividing the project into lots allows both techniques to be performed with a single extraction.

As detailed below, the provision of services will consist of the extraction of high molecular weight DNA and DNA quality control. For LR-WGS, genome sequencing will be carried out using PacBio technology, and for GMOs, samples will be prepared for analysis. The results obtained will be analysed and integrated in order to enable correct interpretation.

This document describes in detail the tasks included within the scope of this contract, as well as the scope of the proposed service.

Clause 2. Estimated value and maximum budget for tender

In the present tender procedure, the maximum tender budget and the estimated value of the contract matches.

The maximum tender budget, corresponding to the duration of the service, amounts to the sum of **"ONE HUNDRED AND FIFTY THOUSAND EUROS" (150.000,00 €)** to which, if the amount corresponding to VAT is added, which is **"THIRTY-ONE THOUSAND FIVE**

HUNDRED EUROS" (31.500,00 €), the total sum amounts to **"ONE HUNDRED EIGHTY-ONE THOUSAND FIVE HUNDRED EUROS" (181.500,00 €)**.

The estimated number of samples will be:

- 75 for the long-read whole genome sequencing (LR-WGS) service
- 75 for the Optical Genome Mapping (OGM) service

Therefore, the maximum total budget (excluding VAT) for each service unit to be performed shall be:

1.LR-WGS

Description	Estimated units	Unit price
DNA extraction, library prep, sequencing and data analysis	75 units	1.300,00 € (*)

2. OGM

Description	Estimated units	Unit price
Optical Genome Mapping and data analysis	75 units	700,00 € (*)

() Price that the tenderer, will be able to improve in the Envelope number 3 - ECONOMIC OFFER.*

For this tender, the base amount has been estimated at 150.000,00 € considering the record of sequencing services required in other projects, and based on competitive market pricing.

The estimated value for this tender will be **"ONE HUNDRED AND FIFTY THOUSAND EUROS" (150.000,00 €)** to which, if the amount corresponding to VAT is added, which is "THIRTY-ONE THOUSAND FIVE HUNDRED EUROS" (31.500,00 €), the total sum amounts to **"ONE HUNDRED EIGHTY-ONE THOUSAND FIVE HUNDRED EUROS" (181.500,00 €)**.

Concept	Amount
Total tender base budget	150.000,00 euros
Possible modifications	0,00 euros
Possible extensions	0,00 euros
Total	150.000,00 euros

In no case shall the estimate of the volume of service provision be binding; the VHIR shall pay the invoices for the service actually provided.

The service must comply with all legal requirements at the time of contracting and throughout the contract period.

Clause 3. Duration of the contract.

The duration of this service contract will coincide with the duration of the aforementioned project, which is until **31st December of 2026**, the end date of Project PI23/00161.

The service will start on the day after the contract is formalized, and its duration will coincide with the duration of the aforementioned project. It will be understood to be formalized on the date of the last digital signature.

However, if this project were to be found, for any unforeseen reasons, subject to the request of a possible extension, the end date will be susceptible to being extended, at most to the one that is finally authorized.

Clause 4. Technical characteristics of the service

Technical specifications for sequencing and delivery of results reports included in the budget:

0. DNA shipment and extraction

a) Management of sample shipment

The samples will be collected at the VHIR in dry ice and transported to the center responsible for the experiments within 48 hours. Shipping will be handled by the awarded bidder.

b) DNA extraction

- High molecular weight DNA will be extracted from the EDTA tube received.

c) Sample quality control

- A quality control of the sample will be performed based on the determination of the DNA size profile using Bioanalyzer (Agilent) or a similar platform.
- Quantification will be performed using a fluorometric system, such as Qubit or a similar system.
- The successful bidder will send a laboratory report with the quality metrics.

1. Long Read Whole Genome Sequencing

a) Preparation of libraries for sequencing

- PacBio library preparation
- b) Sequencing
 - PacBio sequencing
- c) Sequencing quality control reports
 - A report detailing quality metrics and raw data
- d) Bioinformatic Analysis
 - Alignment of HiFi reads to the hg38 reference genome
 - Haplotype generation
 - Detection of point variants and indels
 - Detection of structural variants
 - Detection of copy number variants
 - Detection of tandem repeat regions (STR)
 - Detection of variants in paralogous genes and pseudogenes
 - Methylation studies
 - Generation of internal database of event frequency
 - Possibility of adding custom annotations requested by the contractor and required by the project to the bioinformatic algorithm.
- e) Support in data interpretation
 - Review of candidate variants (IGV or similar)
 - Access to variant interpretation files (CSV, Excel or similar)
 - Scientific support for the interpretation of results
 - Integration of results with information from relatives studied
 - Integration of results with GMO experiments
- f) Transfer of results and data
 - Transfer of raw data (fastq, bam) and analysed data (csv, excel)
 - A report of results including the techniques performed
 - Provision of a secure data transfer system
- g) Delivery time for results and return of surplus material
 - For every 50 samples, the delivery time for results will be 10 weeks from receipt of the samples.
 - Any surplus material, both from libraries generated by the supplier and DNA provided by the contracting party, shall be returned to the contracting party at the supplier's expense, under conditions that guarantee its proper preservation. The company must keep VHIR informed of the shipment at any time.

2. Optical Genome Mapping

- a) Sample preparation
 - Labelling of high molecular weight DNA molecules
- b) Processing of samples (GMOs) in the Bionano system
 - Stratys system (or similar)
- c) Quality control reports
 - A report detailing quality metrics and raw data
- d) Bioinformatic analysis
 - De novo assembly
 - Detection of structural variants and annotation in hg38
 - Detection of copy number variants and annotation in hg38
- e) Support in data interpretation
 - Review of candidate variants (IGV or similar)
 - Access to variant interpretation software (Bionano Access)
 - Access to variant interpretation files (CSV, Excel or similar)
 - Scientific support for result interpretation
 - Integration of results with information from studied relatives
 - Integration of results with LR-WGS experiments
- f) Transfer of results and data
 - Transfer of raw data (bnx) and analysed data (csv, Excel)
 - A report of results including the techniques performed
- g) Delivery time for results and return of surplus material
 - The delivery time for results will be 10 weeks from receipt of the samples.
 - Surplus material, both from libraries generated by the supplier and DNA provided by the contractor, will be returned to the contractor at the supplier's expense, in conditions that guarantee its proper preservation. The company must keep VHIR informed of the shipment at any time.
- h) The successful bidder must have a system for identifying the samples sent for sequencing that guarantees the traceability of the process.
- i) When the successful bidder performs the bioinformatic analysis, they shall deliver the results through the appropriate files and reports and shall be available to answer any questions the research team may have regarding the results.
- j) The successful bidder shall agree with the research team on the best experimental design and bioinformatic analysis (if required) according to the study to be carried out.

- k) The successful bidder must provide support for the resolution of technical incidents and orders, as well as questions and queries about the service/results, by telephone or email, with a response time of less than 3 days during working hours (from 9 a.m. to 5 p.m., Monday to Friday).

Clause 5. Location and timetable for the provision of the service.

Location where the service is to be provided: Service location: The service will be carried out at the company's own facilities. However, samples will be delivered at the Immunology Service of the Vall d'Hebron University Hospital (HUVH) within the Vall Hebron University Campus.

Hours of service: The sample delivery schedule will be between 10:00 and 14:00 from Monday to Wednesday.

Clause 6. Billing and payment.

According to Law 25/2013, of December 27, 2013, on the promotion of electronic invoicing and the creation of the accounting registry of invoices in the Public Sector, in its Article 4, *"All suppliers who have delivered goods or provided services to the public administration may issue and send electronic invoices. In any case, they will be obliged to use the electronic invoice and to submit it through the corresponding general entry point..."*.

The awarded company will invoice electronically the services actually performed. The DIR3 codes to be able to issue the invoice are the following:

DIR3	ACCOUNTING OFFICE	DIR3	MANAGING BODY	DIR3	PROCESSING UNIT
A09006467	Fundació Hospital Universitari Vall d'Hebron-Institut de Recerca (HUVH IR)	A09006467	Fundació Hospital Universitari Vall d'Hebron-Institut de Recerca (HUVH IR)	A09006467	Fundació Hospital Universitari Vall d'Hebron-Institut de Recerca (HUVH IR)

A single invoice will be issued at the end of the service completed. Each invoice issued must detail the period to which it corresponds, the breakdown/description of expenses by concept and the internal account that should be charged, as well as indicate the references **"L 2025-055"**.

In the event that the issuance of the electronic invoice is not feasible for exceptional reasons, the contractor will invoice each service rendered through its corresponding invoice, which must be sent to the following e-mail address: factures@vhir.org

The VHIR's fiscal data that must be included in the invoice are the following:

FUNDACIÓ HOSPITAL UNIVERSITARI VALL D'HEBRON - INSTITUT DE RECERCA
VAT: G-60594009
Passeig Vall d'Hebron, 119-129
08035 Barcelona

The effective payment of the executed services will be performed by bank transfer, due 30 days / invoice date.

In no case, the contractor will have the right to the revision of prices pertaining to any concept.

In the event that the invoice is not issued in accordance with the criteria established and referenced at the beginning of this clause, payment will not be made and the invoice will be withheld until the requested data is correctly indicated.

In the case of electronic invoicing, this will be rejected until the requested data is correctly indicated.

Once the contract ends, including any extensions that may be executed, VHIR will only accept invoices issued after the end of the contract as long as the period of execution of the same is within the term of the tender.

In the event that the invoice is issued after the end of the contract and in accordance with the above paragraph, VHIR will only pay invoices issued within two (2) months after the end of the contract.

The VHIR will only pay the successful bidder for the services actually provided, without, in any case, the VHIR being obliged to exhaust the estimated value of the contract/bid budget.

Clause 7. Responsible of the contract

The responsible for the contract is Dr. Roger Colobran Oriol, Principal Investigator for Project PI23/00161, who will basically be responsible for, among others, the functions of management and supervision of the contracted service, conforming the invoicing issued by the service, monitoring, control and issuing the necessary instructions for the proper execution of the contract; determine whether the service provided complies with the prescriptions established for its execution and compliance and reception of the contract on its completion, and comply with the obligations assumed by the Fundació Hospital Universitari Vall Hebron - Institut de Recerca (VHIR) in this contract.

Clause 8. Confidentiality, Protection of personal data and Intellectual and Industrial Property

Notwithstanding the provisions of the current legislation on intellectual property, protection of personal data and confidentiality, the companies awarded in this call for tenders will expressly commit to not giving the information and / or data provided by VHIR, or any use not provided in this bidding document, and / or expressly authorized by the Head of the Research Grants Office.

The company that awards the contract derived from this bidding will have to extend to their employees the obligations assumed by the awarded company, regarding confidentiality, intellectual property and protection of data.

All rights worldwide will be exclusively granted to VHIR for the maximum time established in applicable laws and / or international treaties for their exploitation through any format and / or exploitation modality, including the exploitation of any discovery, invention, creation, work, procedure, idea, technique, drawing, design, image or any other intellectual or industrial property right generated, raised or acquired as a consequence of the work carried out by the contracting company (hereinafter "Intellectual Property and / or Industrial"), which derives directly or indirectly from the relationship between VHIR and the company awarded in this tender procedure.

The awarded company must inform VHIR of any discovery, creation, invention, idea or any other element that constitutes or is likely to constitute a right of Industrial and / or Intellectual Property partially or totally developed during the contract period.

In the event that the awarded company discovers or develops any creation of intellectual or industrial property, it will be understood that the discovery or development constitutes confidential information of VHIR.

The awarded company must sign all those public and / or private documents that are necessary, in VHIR's discretion, to allow the accreditation of the ownership of VHIR or the proper protection of the aforementioned Intellectual Property and / or Industrial rights in favor of VHIR or of any designated third party.

The awarded company authorizes VHIR to transform, modify, publish, communicate and exploit the work resulting from the execution of the contract derived from this tender procedure.

Clause 9. Allocation criteria

The following criteria and percentages of evaluation of the tender proposals and the determination of the most economically advantageous will be considered for the evaluation of the tender proposals:

1. Criteria evaluable through automatic formulas	Maximum 90 points
• Economic Offer	Maximum 70 points
• Automatic Evaluation Criteria	Maximum 20 points
2. Criteria that can be assessed through value judgments	Maximum 10 points

9.1 Criteria that can be assessed through automatic formula..... up to 90 points

FINANCIAL OFFER.....up to 70 points

It will be valued automatically for each unitary service, in accordance with the following formula:

$$P_v = \left[1 - \left(\frac{O_v - O_m}{IL} \right) x \left(\frac{1}{VP} \right) \right] x P$$

P_v = Bid Score to Rate

P = Economic criteria points

O_m = Best Offer

O_v = Offer to be Valued

IL = Bid Amount

VP = Weighting Value = 1

The automatic formula will be applied to each unit price, and the average score will be established.

** If after applying the automatic formula to a submitted bid, the resulting value is negative, you will be directly assigned zero (0) points of the economic part.*

$P(N) = 0$.

AUTOMÁTIC EVALUATION CRITERIA..... up to 20 points.

Tenderers must mark the automatic evaluation criteria in Appendix No. 1 of the PCAP, which they must provide in Envelope No. 3, as well as the documentation that accredits this:

- The possibility of shipping samples from VHIR to the awarded company within 24 hours, with tracking..... 3 points
- Delivery of a laboratory report with the quality metrics of the DNA sent for sequencing within a period not exceeding 30 days from receipt of the samples..... 3 points
- Meeting to deliver and discuss the detailed report of the bioinformatic analysis carried out and the results obtained within a maximum period of one week after the delivery of results..... 6 points

- Training through one or more online sessions for the correct interpretation of the results obtained..... 8 points

9.2 Criteria that can be assessed through value judgments..... up to 10 points.

The following criteria can be assessed through value judgments. The value will be done in compared with the tenders submitted. The highest score will be given to the offer that best fits the technical requirements set out in this document. All other bids will be scored proportionally by comparison. Subsequently, the various proposals evaluated in descending order will be sorted out, and the following formula will be applied to obtain the score,

$$P_{op} = P \times \frac{VT_{op}}{VT_{mv}}$$

P_{op} = Score the offer to value

P = Criteria score

VT_{op} = Technical evaluation of the scored offer

VT_{mv} = Technical evaluation of the best scored offer

It will be necessary to present a technical offer of a **maximum of 30 single-sided pages in Arial 11 font**. In the case of submitting a technical offer of more than 30 pages, it will not be evaluated after page 31.

The following criteria will be evaluated by value judgments. The award criteria for assessing the contents of Envelope No. 2 are as follows:

Report on the specifications and technical characteristics of the service and on the provision of the service itself.....up to 10 points

The bidding company must provide a report that includes the following:

- The technical specifications and characteristics of the LR-WGS and OGM service, specifying: the volume of blood required, how quality controls will be carried out, the capture kits, coverage, sequencer and technology used, and the quality metrics of the raw data).
- The specifications of the bioinformatic analyses for the LR-WGS and OGM techniques.
- Work plan and organisation during the provision of the service, including delivery times for laboratory reports with DNA/RNA quality metrics and delivery times for sequencing results with and without bioinformatic analysis.
- The sample identification and traceability system for the process and the sample replacement system.
- The data transfer system.

- The support plan for resolving technical incidents, orders, queries and consultations about the service and results.

The clarity of the report and technical specifications of the steps to be taken in the protocol will be assessed.

In accordance with Directive 1/2020 on the Application of Evaluation Formulas and Scoring of Economic and Technical Proposals, a threshold is established for each criterion to be evaluated and subsequently scored, which in no case may be less than 50% of the evaluation of each criterion.

Therefore, the minimum scores for each sub-criteria in order to apply the formula will be:

Report on the specifications and technical characteristics of the service and on the provision of the service itself (5 points)

There are two possible options regarding the function of this threshold, depending on whether none of the bids exceeds it (option 1) or at least one of the technical bids exceeds it (option 2).

- Option 1 - If the evaluation of the bids exceeds the minimum evaluation threshold, all of them obtain as a score the value obtained in the evaluation phase and no bid is excluded from the tender.
- Option 2- If any of the bids exceed the threshold, all the bids are scored and no bid is excluded from the scoring phase, nor from the tender.

In the event that only one bidder submits a tender, the formula presented in the technical criteria will not be applicable by the bidder, the results obtained after the subjective evaluation by the person in charge will be enough.

IMPORTANT NOTE: In order to be awarded the contract, the tenderer must obtain at least **five (5) points** in the proposal relating to the criteria quantifiable according to value judgements. Otherwise, the bidder will be excluded.

Barcelona, 20th November of 2025

CONTRACTING ORGANISM

Ms. Montserrat Giménez Prous

Manager

Fundació Hospital Universitari Vall Hebron – Institut de Recerca (VHIR)