All-India Institute of Medical Sciences
Ansari Nagar, New Delhi-29
(RESEARCH SECTION)

Ref. No. 31/Prop/IRCH/AC/2019-20/RS

Dated: 09.12.2019

Subject: Purchase of RNA Sequencing for the Deptt. of Lab. Oncology, IRCH, AIIMS, New Delhi-29 on proprietary basis- Inviting comments thereon.

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The request has been received from Dr. Anita Chopra, Deptt. of Lab. Oncology, IRCH, AIIMS to purchase the subject item from **M/s Medgenome Labs Pvt. Ltd. (Mfg. by M/s illumine Singapore Pte Ltd.)** on proprietary basis. The proposal submitted by **M/s Medgenome Labs Pte Ltd.** and Performa Invoice and Departmental PAC certifications are attached.

The above documents are being uploaded for open information to submit objections, comments, if any, from any manufacturer regarding proprietary nature of the equipment/item within issue of 15 days giving reference **No. 31/Prop/IRCH/AC/2019-20/RS**. The comments should be received by office of Stores Officer (RS), Research Section at AIIMS on or before **24/12/2019 upto 12:00 p.m.,** failing which it will be presumed that any other vendor is having no comment to offer and case will be decided on merits.

STORES OFFICER (RS)

Encl: Related documents enclosed.
1. PAC Certificate enclosed.
2. Performa Invoice

Department of Laboratory Oncology

Specification for the Whole RNA Sequencing

S.No.	Specification	Quantity
1.	RNA sequencing with Illumina Hiseq X *2x150 bp reads* *110 M reads/sample.*	100 RNA samples
2.	Bioinformatics Analysis	100 RNA samples

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डॉ० सुरेन्द्र कु. सहरावत/Dr. Surender K. Sharawat
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अंसारी नगर, नई दिल्ली-29/Ansari Nagar, New Delhi-29

November 27, 2019

ANNEXURE- I

Justification

The collected sample are very precious sample of the patients which needs to be reported on genuine genomics findings. We will need accurate results and will not be able to repeat any of the samples in case of any error in sample processing during sequencing.

Recruited patient's samples were collected on diagnosis and once collected within specific time frame can never be repeated in future due to start of treatment. Ms MEDGENOME is the only CAP accredited for doing Next Generation Sequencing and is using HiSeqX Sequencing system which is reproducible and fast. CAP accreditation is a quality benchmark for analysing human samples for DNA and RNA sequencing diagnostics. As our samples are extremely precious and critical in nature, we would like to give the order to a reputed and reliable company that can provide fast accurate and reproducible results without any need to repeat the sequencing of any sample

Dr Anita Chopra

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अंसारी नगर, नई दिल्ली-29/Ansari Nagar, New Delhi-29

illumina

March 11, 2019

Proprietary Letter

To Whom It May Concern

We, Illumina Singapore Pte. Ltd., a subsidiary of Illumina, Inc., a Delaware corporation, having its principal place of business at 11 Biopolis Way # 09-05 Helios, Singapore 138667, who is established and reputable manufacturers of Illumina Sequencing & Arrays Systems and the consumables for the Sequencing and Arrays Systems. Hereby, confirm that the following products are solely manufactured by Illumina, Inc., U.S.A. and /or Illumina Singapore Pte. Ltd. and is Proprietary technology of Illumina, Inc., U.S.A.

This is also to certify that M/s Medgenome Labs Ltd., is currently the only commercial service provider in India that has HiSeq 4000 & HiSeq X Ten in house.

Catalog #	Product Description
SY-401-4001	**HiSeq® 4000 Sequencing System** The Illumina HiSeq 4000 Sequencing System is a dual flow cell sequencing instrument. System includes workstation computer, touch screen monitor, HiSeq Control Software, installation kits and standards, installation and training, and 12 months warranty (including parts and labor).
SY-412-1001	**HiSeq X™ Sequencing System (as part of HiSeq X Ten)** HiSeq X is an ultra-high throughput sequencing system, which is sold in quantities of at least 10 units (HiSeq X Ten = collection of 10 HiSeq X). The system is designed for whole genome sequencing application only.

Yours faithfully,

Illumina Singapore Pte. Ltd.

MedGenome Labs Limited Bangalore

Name: Tan Kah Ling, Mavis
Title: Senior Director, Finance, Asia Pacific
For and behalf of: Illumina Singapore Pte. Ltd.

COLLEGE of AMERICAN PATHOLOGISTS

CAP ACCREDITED

The College of American Pathologists
certifies that the laboratory named below

MedGenome Labs Private Limited
Bangalore, Kar, India
Ramprasad Vedam, PhD

CAP Number: 9302248
AU-ID: 1770581

has met all applicable standards for accreditation and is hereby accredited by the College of American Pathologists' Laboratory Accreditation Program. Reinspection should occur prior to September 7, 2019 to maintain accreditation.

Accreditation does not automatically survive a change in director, ownership, or location and assumes that all interim requirements are met.

Chair, Commission on Laboratory Accreditation

President, College of American Pathologists

MedGenome Labs Limited Bangalore

4. Genes expression estimation (raw) using FeatureCounts: FeatureCounts will be used to derive raw read counts mapping to known genes. These read counts will normalized in DESeq2, to assess gene expression levels. We will not assess FPKM or Splice variant expression unless specific requirement is put forth by the client. These steps occasionally take unpredictable times - and hence providing these services may extend the overall TAT. Moreover, the normalization method used by DESeq2 is documented to be more sensitive than FPKM measure. If there is a requirement for FPKM values, we recommend that the client list it as an additional requirement. We will provide the DESeq2 results within time lines, and the FPKM results as soon as they are over.
5. Differential expression analysis will be performed using DESeq2: we use DESeq2 for identifying differentially expressed genes. These will be provided as supplementary information.
6. For experiments using single sample / test condition, we use a bespoke statistical test, that will result in false negatives (known signature genes showing up as not differentially expressed) due to stringent differential expression cut-offs. However, such stringent cut-offs help us reduce false positives. The optimal way to identify differentially expressed genes, is to add replicates to the experiments.

List of Deliverables

1. The Raw fastq files and QC report containing the read information, data size, average base quality, GC percentage, Base quality distribution.
2. Aligned reads distribution and splice junction information.
3. Genes expression values.
4. List of genes differentially expressed (In case of two or more samples exist)
5. GO annotation for differentially expressed genes such as biological process, molecular function and cellular component, pathway information (KEGG &Reactome). (If differential expression analysis was done).

Cost estimate

S. No.	Description of Services	Quantity	Unit Price (INR)	Total Cost (INR)
1.	RNA sequencing with Illumina HiSeq X 2x150bp reads 110M reads/sample. With Bioinformatics Analysis.	100	39000	3900000
			GST@18%	702000
			Total	46,02,000

Payment terms

1. PO should be issued in the name of MedGenome Labs Ltd.
2. Cheque or DD should be issued to `MedGenome Labs Ltd.' and payable at Bangalore.
3. Alternatively, details for online payment are mentioned below.