

# **TENDER DOCUMENT**

**Transcriptome, Small RNA and Whole Genome Sequencing of  
Banana and Orchid samples on Illumina Platform**



**Regional Plant Resource Centre**

**Nayapalli, Bhubaneswar-  
751015**



## REGIONAL PLANT RESOURCE CENTRE

Nayapalli, Bhubaneswar-751015, Odisha

FOREST & ENVIRONMENT DEPARTMENT, GOVERNMENT OF ODISHA

TelNo.0674-2557925,2552002,Email:rprcbbsr@gmail.com

Website: [www.rprcbbsr.com](http://www.rprcbbsr.com)

R&D:37/2017, Advt. No.1051 / RPRC;

Date: 28/05/ 2018.

### **Tender Call Notice for Transcriptome, Small RNA and Whole Genome Sequencing of Banana and Orchid on Illumina Platform**

Sealed tenders (two bid system) are invited from reputed Organizations/Firms/Authorized Agents/ Distributors/Dealers engaged in Plant Genomics work having valid GST registration for carrying the works of **‘Transcriptome, Small RNA and whole genome sequencing of banana and orchid samples on Illumine Plotform for RPRC’**. The technical specifications, other terms and conditions and formats are available in the website [www.rprcbbsr.com](http://www.rprcbbsr.com), which can be downloaded for use. Interested parties may submit their tender super-scribed **“Quotation for Transcriptome, Small RNA and whole genome sequencing of banana and orchid samples on Illumine Plotform for RPRC”** through Speed Post/ Registered Post/Courier service, which should reach the undersigned on or before **June 18, 2018 (5.00 PM)** positively. Incomplete tenders and tender documents received after the due date and time will not be considered. The undersigned reserves the right to reject any or all the tenders without assigning any reasons thereof.

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**Administrative Officer  
Regional Plant Resource Centre**

**TERMS AND CONDITIONS**  
**for Transcriptome, Small RNA and whole genome sequencing of banana and orchid**  
**samples on Illumine Plotform**

1. **Sale of Tender paper:**

The tender papers, containing the detailed technical specifications of the analysis, list of documents to be submitted etc. will be available at Regional Plant Resource Centre, Bhubaneswar from **22<sup>nd</sup> May, 2018** (during the office hours only), on payment of a non-refundable fee of **Rs.472/- (Rs.400/-+GST18%)** in cash or in shape of pay order/demand draft drawn in favour of **Chief Executive, Regional Plant Resource Centre (RPRC), payable at Bhubaneswar**. The same can also be downloaded from our website [www.rprcbbsr.com](http://www.rprcbbsr.com) and in such a case, the cost of tender paper is to be enclosed in shape of DD/Bankers cheque drawn in favour of Chief Executive, RPRC, payable at Bhubaneswar along with the tender. The cost of tender paper and **EMD (Rs.20,000/-)** should be submitted in shape of Demand drafts/Bankers cheque. In case of any bid amendment and clarification, responsibility lies with the tenderers to collect the same from the notice board/website of RPRC before the last date of submitting the tender document. Non-payment of cost of tender paper and EMD will amount to rejection of the tender.

2. The last date of receipt of tender documents in this office by Speed Post/ Registered Post/ Courier Service is **18<sup>rd</sup> June, 2018 (up to 5.00 PM)**. The Technical bids will be opened by the Tender Committee of RPRC on **19<sup>th</sup> June, 2018 (at 11.00 AM)** in presence of the authorised representatives of the tenderers who like to be present at that time. The date of opening of the financial bids of technically qualified tenderers shall be communicated to them in due course of time.

3. **BidSystem:**

- a) The tender should be submitted in two bid system i.e, “Technical Bid” and “Financial Bid”. Technical bid contains documents as per the tender terms along with EMD and cost of tender paper in appropriate shape. The technical bids containing information on price, directly or indirectly, will be liable for rejection. Financial bid contains only the price bid as per **Annexure-III**. The technical bid and financial bid required to be submitted in two separate envelopes clearly mentioning on top of the envelope “Technical bid” and “Financial bid”, respectively and both of these should be placed in a big envelope marked with “**Transcriptome, Small RNA and whole genome sequencing analysis on Illumina Plotform** for RPRC”.
- b) Required Specification of the **Transcriptome, Small RNA and whole genome sequencing analysis** of banana and orchid is given in **Annexure-I**.
- c) General description for the transcriptome, small RNA and whole genome sequencing of the should be as per **Annexure-II**.

- d) The rates quoted by the tenderer shall be valid for a period of 90-days from the date of submission of tender.

#### **4. Eligibility Criteria**

- a) Submission of price (INR) as per prescribed format.
- b) Copy of GST registration certificate and up to date GST/VAT/CST clearance certificate.
- c) Tender paper cost.
- d) Required EMD.
- e) Alternative price for any item will not be allowed, for which tender would be rejected.
- f) Copy of PAN to be submitted.
- g) Undertaking that the tenderer has not been black listed by any Govt. Organization/ Institution.
- h) Undertaking that the quoted item qualifies the required technical specification.
- i) Check list of documents submitted (Should be attached as **Annexure-IV**)
- j) Copy of recent past performance (certificate/relevantdoc.) should be attached as **Annexure-VI** (at least 20 performances should be included).
- k) Undertaking that the tenderer must assure that it has a proven appropriate set-up and capability to provide service efficiently & effectively.
- l) The tenderer (in case of authorized agent/distributor/dealer of reputed manufacturer) should have sufficient credential in take-up the analysis and at least last 5-years of their establishment in India (evidenced with relevant documents).

#### **5. Validity of Tender:**

- a) The tender shall remain valid for a period of 90-days after the last date as specified in the tender.
- b) Notwithstanding the above, the purchaser reserves the right to accept or reject any bids and to cancel the bidding process and rejects all bid sat any time prior to the issue of purchase order.

#### **6. Issue of work Order:**

- a. The work order will be placed on the qualified tenderer whose bid will be selected by the purchaser prior to expiry of the bid validity period. The terms of the accepted offer shall be incorporated in the purchase order.
- b. The delivery should be completed within 60-days from the date of receipt of the confirmed purchase order as per the quality and specification of the analysis work.

- c. Any effort by a tenderer to influence the purchaser in its decision on bid evaluation or placement of purchase order may result in rejection of the tenderers offer.
- d. If the selected tenderer fails to execute the order, the EMD would be forfeited and action would be taken to black list the tenderer.
- f. Any legal dispute arising out of this is subject to Bhubaneswar jurisdiction only.

*-sd-*  
**Chief Executive**  
**Regional Plant Resource Centre**  
**Bhubaneswar**

### **General Conditions of Contract (GCC):**

1. Payment terms and conditions, confidentiality of project and substantial previous work experience in transcriptome, small RNA, whole genome sequencing analysis with publication proofs is necessary in details.
2. Details of all protocols/methods followed for sequencing, and raw as well as high-quality assembled sequence data should be provided in appropriate storage devices.
3. Bioinformatics analysis should be carried out by an experienced person (with publications on the same to his/her credit).
4. Details of analysis and regular up-dates of work progress should be provided to the respective Scientist of the Centre.
5. Bioinformatics and post-analysis, which should not be limited to the above mentioned descriptions (Annexure-I), some of the requirement may change depending on the initial reads, bioinformatics support is required until manuscript preparation and even to satisfy the reviewer's comment, if any.
6. Vendor should provide in-house Illumina Hiseq-2500/4000 facility certificate explicitly on the name of Company (it should not be in lease or tie-up).
7. Samples or data should not be outsourced outside India at any stage.
8. You are therefore requested to please send your offer in "two bid system" indicating the maximum discount offered. The quotations must accompany a Demand Draft amounting to Rs.20,000/- (Rupees Twenty Thousand only), being the EMD in the name of the Chief Executive, Regional Plant Resource Centre, payable at Bhubaneswar and must be sent in a Sealed Envelope duly super-scribed on top of envelope as outsourcing of "**Transcriptome, Small RNA and whole genome sequencing analysis on Illumina Platform** for RPRC" so as to reach to the undersigned latest by 18/06/2018 (5:00 p.m.), the same shall be opened on same day at 19/06/2018 at 11:00 a.m.
9. The Chief Executive, RPRC reserves the right to amend any of the terms and conditions contained in the Tender Document or reject any or all applications (offers) or not to award the contract to the lowest bidder without giving any notice or assigning any reason thereof. The decision of the Chief Executive, RPRC in this regard will be final and binding.
10. The bids will be accepted in respect of those companies having successfully completed one **similar work** costing not less than Rs.12,00,000/- or two similar

works each costing not less than Rs.6,00,000/- or three similar works each costing not less than Rs.4,00,000/- and having annual financial turnover of Rs.15,00,000/- during the last three financial years. **Similar work means**, work related to analysis of similar samples in **Government National Laboratories/ Institutions/ Universities and reputed Organisations, engaged in the area of Research & Development.** Intending tenderers must enclosed documents such as completion certificates and Work/ Supply orders/certified Balance Sheet/ITR Returns for **three** last financial years.

- 11. The firm should provide the following information: (i). Sample shipping method, (ii). Sample preparation procedure, (iii). Library preparation kit to be used, (iv). Quality control at each steps.**
12. Only those bidders can participate who has done plant or animal transcriptome, small RNA and whole genome sequencing and assembly. The documentary evidence with satisfactory report from P.I. of research institute must be submitted along with technical bid.
- 13. Only those bidderers can participate who has in-house/collaborative sequencing platform in India.** The signed copy of documentary evidence must be submitted along with technical bid.
14. The whole project should be completed within two months (60-days) time.
15. Confidentiality and non-disclosure agreement must be submitted.

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**Chief Executive**  
**Regional Plant Resource Centre**  
**Bhubaneswar**

## SCOPE OF WORK/TECHNICAL SPECIFICATIONS

**Small RNA, transcriptome and whole genome sequencing of banana and orchid on Illumina platform**

**\*Note: In case of banana the same RNA samples will be used for both small RNA & transcriptome sequencing analysis.**

I.	<b>Technical specification for small RNA sequencing of banana</b>	
A	Source of samples	Fruit or total RNA samples*
B	Sequencing platform	IlluminaHiSeq 2500/4000
C	Sequence read length	1×50 nucleotides.
D	Total sequence outputs	25 million mapped reads per sample.
E	Percentage of reads with PHRED or quality score of 30 (Q30)	> 80-90%
F	Complete bioinformatics analysis	<ul style="list-style-type: none"> <li>i. Read quality, base composition and statistical analysis of sequencing.</li> <li>ii. Small RNA alignment and annotation (miRNA, siRNA).</li> <li>iii. Identification and quantification of known and novel miRNA detected.</li> <li>iv. Pairwise differential expression analysis of miRNA (up-regulated and down-regulated genes) as advised by RPRC.</li> <li>v. Significant biological analysis of Gene Ontology and pathways for the identified target genes.</li> <li>vi. Pairwise comparison of total filtered small RNA reads</li> </ul>
G	Deliverables:	<ul style="list-style-type: none"> <li>i. Small RNA Qubit and Bioanalyzer QC report.</li> <li>ii. Small RNA Library QC report.</li> <li>iii. Small RNA sequence raw data QC report.</li> <li>iv. Fastq QC report.</li> <li>v. Raw fastq.</li> <li>vi. Raw data, processed data, analysed data and complete analysis report.</li> </ul>

(Cntd....)



<b>II. Technical specification for transcriptome sequencing of banana:</b>		
A	Source of samples	Fruit or total RNA samples*
B	Sequencing platform	IlluminaHiSeq 2500/4000
C	Sequence read length	2 x 250 bp
D	Total sequence outputs	Approximately 25 million mapped reads per sample (about mapped 6 gb per samples).
E	Percentage of reads with PHRED or quality score of 30 (Q30)	> 80- 90%
F	Complete bioinformatics analysis	<ul style="list-style-type: none"> <li>i. Basic sequence data report-read length distribution, size, etc.</li> <li>ii. <i>De novo</i> assembly and Reference-based assembly.</li> <li>iii. Gene expression profiling.</li> <li>iv. Pair-wise differential expression analysis among samples as advised by RPRC.</li> <li>v. Complete statistical analysis including one-way and two-way ANOVA analysis using different tissue types and developmental stages combinations.</li> <li>vi. Gene annotation, GO and KEGG analysis.</li> <li>vii. Pathway and gene network analysis.</li> <li>viii. Protein prediction and interaction analysis.</li> <li>ix. Sequence variant analysis among samples as well as with reference sequences.</li> </ul>
G	Deliverables:	<ul style="list-style-type: none"> <li>i. RNA samples Qubit and Bioanalyzer QC report.</li> <li>ii. RNA Library QC report.</li> <li>iii. RNA sequence raw data QC report.</li> <li>iv. Fastq QC report.</li> <li>v. Raw fastq.</li> <li>vi. Raw data, processed data, analysed data, mapped data, and complete analysis report</li> </ul>

(Cntd....)

<b>III.</b>	<b>Technical specification for De novo transcriptome sequencing of orchid:</b>	
A	Source of samples	Leaf or total RNA samples
B	Sequencing platform	Illumina HiSeq 2500/4000
C	Sequence read length	2 x 250 bp OR 2 ×100 bp
D	Total sequence outputs	Approximately 25 million mapped reads per sample (about mapped 8-10 GB per samples). OR Approximately 80-100 million mapped reads per sample (about mapped 8-10 GB per samples).
E	Percentage of reads with PHRED or quality score of 30 (Q30)	> 80-90%
F	Complete bioinformatics analysis	<ul style="list-style-type: none"> <li>i. Basic sequence data report-read length distribution, size, etc.</li> <li>ii. <i>De novo</i> assembly</li> <li>iii. Gene expression profiling.</li> <li>iv. Pair-wise differential expression analysis among samples as advised by RPRC.</li> <li>v. Complete statistical analysis including one-way and two-way ANOVA analysis using different tissue types and developmental stages combinations.</li> <li>vi. Gene annotation, GO, KEGG. Tremble, Plantcys, TAIR analysis</li> <li>vii. Pathway and gene network analysis.</li> <li>viii. Protein prediction and interaction analysis.</li> <li>ix. Sequence variant analysis among samples as well as with reference sequences.</li> <li>x. CANoPI annotation</li> </ul>
G	Deliverables:	<ul style="list-style-type: none"> <li>I. RNA samples Qubit and Bioanalyzer QC report.</li> <li>II. RNA Library QC report.</li> <li>III. RNA sequence raw data QC report.</li> <li>IV. Fastq QC report.</li> <li>V. Raw fastq.</li> <li>VI. Raw data, processed data, analysed data, mapped data, and complete analysis report.</li> </ul>

(Cntd....)

<b>IV.</b>	<b>De novo whole genome sequencing and analysis of <i>Dendrobium Sonia</i> leaf samples</b>	
A	Source of samples	Leaf DNA
B	Sequencing platform	PacBio Sequel/ HiSeq 4000
C	Sequence Coverage	100 x
D	Total sequence outputs	110 GB
E	Percentage of reads with PHRED or quality score of 30 (Q30)	> 75-80 %
F	Complete bioinformatics analysis	<ul style="list-style-type: none"> <li>i. QC&amp; filter</li> <li>ii. Assembly using supernova/ MASURCA/DBG2OLC/ any other</li> <li>iii. Gene prediction using Augustus</li> <li>iv. Gene annotation</li> <li>v. GO analysis</li> </ul>
G	Deliverables:	<ul style="list-style-type: none"> <li>i. DNA samples Qubit and Bioanalyzer QC report.</li> <li>ii. DNA Library QC report.</li> <li>iii. DNA sequence raw data QC report.</li> <li>iv. Fastq QC report.</li> <li>v. Raw fastq.</li> <li>vi. Raw data, processed data, analysed data, mapped data, and complete analysis report.</li> </ul>

Ref No:.....RPRC/Date:

**CERTIFICATE**

- That I/ we have gone through and understood the requirements given in the RPRC Tender Notice no..... and rates have been quoted accordingly.
- That the terms and conditions given in the tender notice are acceptable to me/us.
- That the information furnished by me /us is true and correct.
- That our firm/company has not been blacklisted by any organization/department/central Government/State Government funded bodies/Universities etc.
- In case of the information/supporting documents provided by our organization in the tender is false in any time of the tender process or after the finalization of the tender, the decision taken by RPRC is final and binding to us.

**Seal and the Authorized Signature of  
the tenderer**

**Note: The quoting firm should provide the above certificate by an affidavit on Non-Judicial Stamp paper has to be submitted by the bidder to this effect.**

**SCHEDULE OF RATES – OFFER BY BIDDER**  
**(To be enclosed along with the price/financial bid)**

<b>S. No.</b>	<b>Item Description</b>	<b>Qty</b>	<b>Rate (in Rs)</b>	<b>Value (inRs)</b>
<b>I)</b>	Transcriptome sequencing of banana on Illumina platform.	10 samples		
<b>II)</b>	Small RNA sequencing of banana on Illumina platform.	10 samples		
<b>III)</b>	Transcriptome sequencing of orchid on Illumina platform.	2 samples		
<b>IV)</b>	Whole genome sequencing of orchid on Illumina platform.	1 sample		
	(Specifications: as per the scope of work; <b>Annexure-I</b> )			
		<b>GST @ _____</b>		
		<b>Total Value (inRs)</b>		

**SEAL AND SIGNATURE OF THE BIDDER**

**BID EVALUTION CRITERIA**

Sr. No	Particulars	Complied and Accepted/Not Accepted /Not applicable
1)	<p><b><u>A. TECHNICAL:</u></b> <u>The bidder as a company (or) registered partnership (or) proprietary concern should have</u></p> <ul style="list-style-type: none"><li>i) <u>The bidder who has In-house/collaborative sequencing platforms in India for “small RNA, transcriptome and whole genome sequencing on Illumina platform”</u></li><li>ii) <u>The bidder should have qualified and trained manpower for providing services mentioned in the scope of work.</u></li><li>iii) <u>The bids will be accepted in respect of those companies having successfully completed one similar work costing not less than Rs. 12,00,000/- or two similar works each costing not less than Rs. 6,00,000/- and three similar works each costing not less than Rs. 4,00,000/- in the last five financial years. Similar samples in Central/State Govt National Laboratories/PSU/Central/State Government Autonomous bodies. The copies of the purchase orders should be provided along with the quotation.</u></li></ul> <p><b><u>The quoting firm should provide the compliance statement for each point of the scope of work mentioned in the Annexure -I</u></b></p> <p><b><u>Whether your firm had filled the certificate as per the Annexure II</u></b></p>	
2)	<p><b><u>B. COMMERCIAL:</u></b></p> <ul style="list-style-type: none"><li>i) <u>The price quoted must be NET PER UNIT/rate and must be clearly shown in figures and words in Indian currency.</u></li></ul>	

**Seal and the Signature of the Bidder**

**DEVIATION STATEMENT FORM (ITB/GCC)**

The following are the particulars of deviations (ITB, GCC Clauses) from the requirements of the tender document and specifications:

<b>CLAUSE</b>	<b>DEVIATION</b>	<b>REMARKS (INCLUDING JUSTIFICATION)</b>

Place:

Date:

**Signature and seal of the  
Manufacturer/Bidder**

**NOTE:**

**Where there is no deviation, the statement should be returned duly signed with an endorsement indicating “No Deviations”.**

**BIDDER'S PERFORMANCE STATEMENT FORM**

**(For A period of last 5 years)**

Name of the Firm-----

Order placed by (full address of purchaser)	Order No. and date	Description and quantity of ordered Services	Price	Date of completion of delivery as per contract/Actual	Remarks indicating reasons for late delivery, if any	Has the services provided satisfactory?	Contact Person along with Tel. NO., Fax No. & e-mail address

Signature  
Rubberstamp

Place:  
Date



