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1. Introduction

DNA barcoding is an automatable taxonomic method that uses a ‘*short DNA sequence*’ in an organism’s genome (nuclear or/and organelle) to identify it as belonging to a particular species. The ‘*short DNA sequence*’ or a genetic marker for species identification is chosen such that it is sufficiently conserved within members of the same species while divergent enough to demark it from members of other species. Plant Working Group of the Consortium of Barcode of Life (CBOL) has approved two loci (*rbcL* and *matK*) for DNA Barcoding of land plants. Some research papers have argued that three loci DNA Barcode involving a third locus (*trnH-psbA*) would be useful in better delineation of the species. ITS2 sequence has also been proposed to be very useful in delineation of closely related species.

We can provide two (*rbcL* and *matK*), three (*trnH-psbA*, *rbcL* and *matK*) or a four loci (ITS2, *trnH-psbA*, *rbcL* and *matK*) DNA Barcode service for plant samples.

2. Project Details

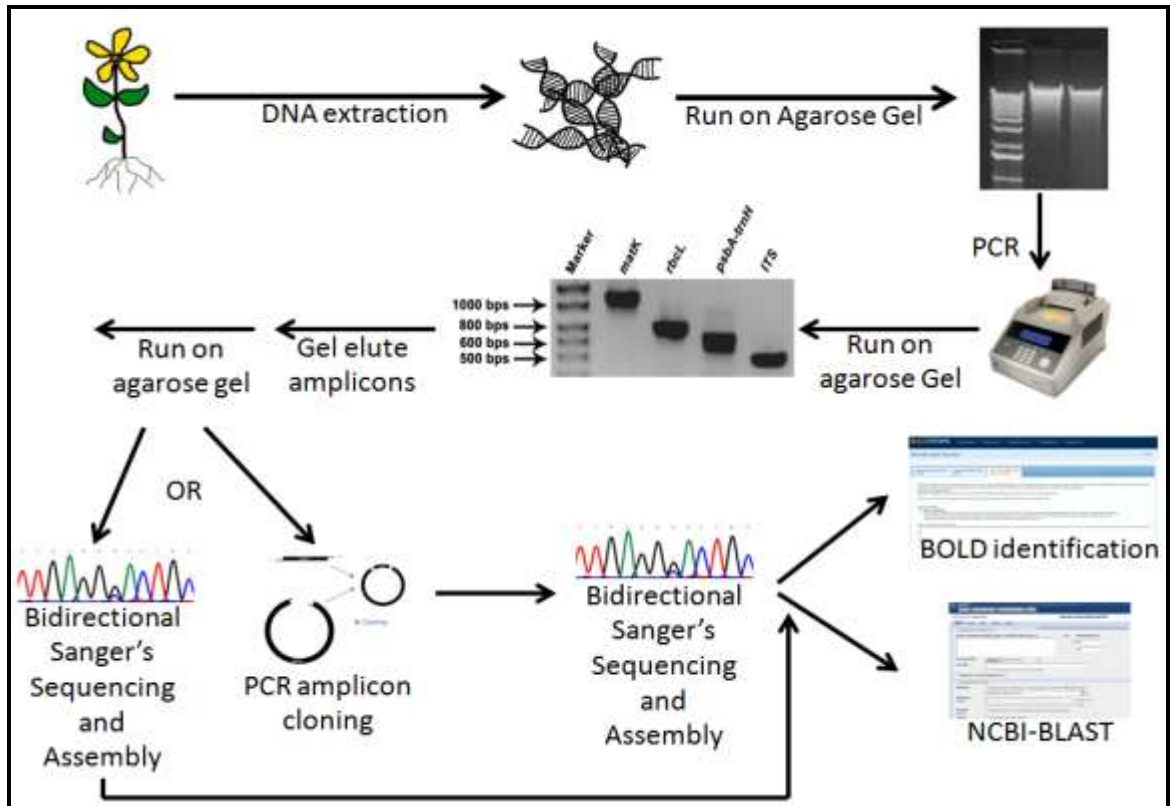
- (a) DNA Barcoding of 100 fresh frozen plant samples using two loci (*rbcL* and *matK*)
- (b) DNA Barcoding of 100 dried plant samples using two loci (*rbcL* and *matK*)
- (c) DNA Barcoding of 100 fresh frozen plant samples using three loci (*trnH-psbA*, *rbcL* and *matK*)
- (d) DNA Barcoding of 100 dried plant samples using three loci (*trnH-psbA*, *rbcL* and *matK*)
- (e) DNA Barcoding of 100 fresh frozen plant samples using four loci (ITS2, *trnH-psbA*, *rbcL* and *matK*)
- (f) DNA Barcoding of 100 dried plant samples using four loci (ITS2, *trnH-psbA*, *rbcL* and *matK*)

3. Scope of Work

The quote involves

- (a) extraction of DNA from plant samples,
- (b) PCR amplification of standard DNA Barcode loci
- (c) Bidirectional Sanger's sequencing of amplicons
- (d) Sequence assembly and BLAST analysis for each locus
- (e) Reporting of a list of nearest matches for each locus

4. Workflow



5. Project Estimate

(a) DNA Barcoding of 100 fresh frozen plant samples using two loci (*rbcL* and *matK*)

Sr. No.	Description	Output/Delivery	Quantity	Cost
1	DNA Barcoding of fresh frozen plant samples using two loci (<i>rbcL</i> and <i>matK</i>)	<ul style="list-style-type: none"> 500bp of assembled sequences for <i>rbcL</i> and <i>matK</i> Report containing a list of nearest matches 	100 plant samples	Rs. 7,000 X 100 samples = Rs. 7,00,000
Service Tax (14%)				98,000
Grand Total in Indian Rupees (INR)				7,98,000

(b) DNA Barcoding of 100 dried plant samples using two loci (*rbcl* and *matK*)

Sr. No.	Description	Output/Delivery	Quantity	Cost
1	DNA Barcoding of dried plant samples using two loci (<i>rbcl</i> and <i>matK</i>)	<ul style="list-style-type: none"> Minimum 450-500 bp of assembled sequences for <i>rbcl</i> and <i>matK</i> Report containing a list of nearest matches 	100 plant samples	Rs. 9,000 X 100 samples = Rs. 9,00,000
Service Tax (14%)				1,26,000
Grand Total in Indian Rupees (INR)				10,26,000

(c) DNA Barcoding of 100 fresh frozen plant samples using three loci (*trnH-psbA*, *rbcl* and *matK*)

Sr. No.	Description	Output/Delivery	Quantity	Cost
1	DNA Barcoding of fresh frozen plant samples using three loci (<i>trnH-psbA</i> , <i>rbcl</i> and <i>matK</i>)	<ul style="list-style-type: none"> Minimum 450-500 bp of assembled sequences for <i>rbcl</i>, <i>matK</i> and <i>trnH-psbA</i> Report containing a list of nearest matches 	100 plant samples	Rs. 8,600 X 100 samples = Rs. 8,60,000
Service Tax (14%)				1,20,400
Grand Total in Indian Rupees (INR)				9,80,400

(d) DNA Barcoding of 100 dried plant samples using three loci (*trnH-psbA*, *rbcl* and *matK*)

Sr. No.	Description	Output/Delivery	Quantity	Cost
1	DNA Barcoding of dried plant samples using three loci (<i>trnH-psbA</i> , <i>rbcl</i> and <i>matK</i>)	<ul style="list-style-type: none"> Minimum 450-500 bp of assembled sequences for <i>rbcl</i>, <i>matK</i> and <i>trnH-psbA</i> Report containing a list 	100 plant samples	Rs. 10,600 X 100 samples = Rs. 10,60,000

		of nearest matches	
Service Tax (14%)			1,48,400
Grand Total in Indian Rupees (INR)			12,08,400

(e) DNA Barcoding of 100 fresh frozen plant samples using four loci (ITS2, *trnH-psbA*, *rbcl* and *matK*)

Sr. No.	Description	Output/Delivery	Quantity	Cost
1	DNA Barcoding of fresh frozen plant samples using four loci (ITS2, <i>trnH-psbA</i> , <i>rbcl</i> and <i>matK</i>)	<ul style="list-style-type: none"> Minimum 450-500 bp of assembled sequences for <i>rbcl</i>, <i>matK</i>, <i>trnH-psbA</i> Minimum 350-400 bp of assembled sequences for ITS2 Report containing a list of nearest matches 	100 plant samples	Rs. 10,200 X 100 samples = Rs. 10,20,000
Service Tax (14%)				1,42,800
Grand Total in Indian Rupees (INR)				11,62,800

(f) DNA Barcoding of 100 dried plant samples using four loci (ITS2, *trnH-psbA*, *rbcl* and *matK*)

Sr. No.	Description	Output/Delivery	Quantity	Cost
1	DNA Barcoding of dried plant samples using four loci (ITS2, <i>trnH-psbA</i> , <i>rbcl</i> and <i>matK</i>)	<ul style="list-style-type: none"> Minimum 450-500 bp of assembled sequences for <i>rbcl</i>, <i>matK</i>, <i>trnH-psbA</i> Minimum 350-400 bp of assembled sequences for ITS2 Report containing a list of nearest matches 	100 plant samples	Rs. 12,200 X 100 samples = Rs. 12,20,000

Service Tax (14%)	1,70,800
Grand Total in Indian Rupees (INR)	13,90,800

6. Terms and Conditions

- (a) The plant material supplied by the client, for DNA Barcoding analysis, should be from a single plant without contamination from another plant sample.
- (b) Only the results as indicated in the output/delivery section will be provided to the client.
- (c) The nearest species match will be provided on the basis search results from (i) NCBI-BLAST using NCBI-GenBank database and (ii) The Barcode of Life Data System (BOLD), depending on availability of data at the two databases (NCBI-GenBank and BOLD).
- (d) In case any locus does not amplify or is not sequenced properly or a particular plant sample does not yield any sufficiently good quality DNA for further analysis, the cost for such locus/sample would be deducted from the total billed value. CSIR-Indian Institute of Integrative Medicine will not have any other liability, whatsoever.
- (e) The sequences and nearest species match provided in the output/delivery from the DNA Barcoding analysis, is only for research purpose or for internal use by the client and not meant for forensic or plant-quarantine analysis and in any case will not bear any legal implications for CSIR-Indian Institute of Integrative Medicine.
- (f) The cost estimates and turnaround times will vary as per the number of samples and the type of analysis involved.
- (g) This quotation, its contents and any correspondence in this regard is strictly confidential and should not be shared with any other party except without written consent from Director or Head, PME, CSIR-Indian Institute of Integrative Medicine.
- (h) This quotation is valid for orders placed within three months from the date of quotation.

7. Conclusion

We hope that the proposal/quotation meets your requirement.

In case any explanation/clarification is required for any of the items mentioned here, please contact at the following address

Head PME,
CSIR-Indian Institute of Integrative Medicine,
Canal Road,
Jammu – 180 001.
Phone: +91-191-2569019
Email: arahim@iiim.ac.in