

HEALTH DEPARTMENT
Government of Bihar
1st Floor, Vikas Bhawan, Bailey Road, Patna - 800 015.

INVITATION FOR EXPRESSION OF INTEREST
EOI No.-.....01...../2019, Dated-09.08.2019.....

Sealed Expression of Interests (EOIs) are invited in prescribed format only from interested/intending NABL & BIS accredited, FSSAI notified, ISO & OSHAS certified Government (State/Central/Union Territory)/Private Limited Company, having ethical values and experience of establishing, refurbishing, upgrading, operating and managing Food Analysis Laboratory for empanelling/short listing/selecting such Agencies for Establishment, Refurbishment/Upgrading, Operation and management of one number of Food Analysis Laboratory situated in Combined Food and Drug Laboratory, at Agamkuan, Patna, Bihar, 800007, on PPP/Outsourcing mode for analysis of food, quality monitoring and regulatory purposes.

The sealed EOIs can be sent in prescribed format by registered post/speed post/courier to the undersigned by **27.08.2019 upto 3:00 P.M** , at the **Office of Additional Secretary –Cum- Nodal Officer, Food safety, Health Department, 1st Floor, Vikas Bhawan, Bailey Road, Patna, Bihar-800015**. The detailed EOI can be downloaded from the site of the Health Department, Government of Bihar - Tender website www.health.bih.nic.in and www.prdbihar.gov.in with effect from **17.08.2019** under the item "**EOI for Establishment, Refurbishment /Upgrading, Operating and Management Contract of Food Analysis Laboratory situated in Combined Food And Drugs Laboratory, Agamkaun, Patna, Bihar, 800 007**". The authority reserves the right to cancel all or any of the EOI bid without assigning any reason thereof.

Sd/-
Additional Secretary
cum Nodal Officer(Food Safety)
Health Department, GOB,
1st Floor, Vikas Bhawan, Bailey Road,
Patna, Bihar - 800015.

Memo No. : 15/Am-15-09/2019-982(15) Patna, Dated : - 09.08.2019
C/c – Copies in five set along with soft copy forwarded to the Deputy Director, Information and Public Relation Department, Government of Bihar, Soochna Bhavan, Sardar Patel Marg, Rajbansi Nagar, Patna, Bihar 800015 for information and request for publication of this EOI Notice Document for one day in one English, Hindi and Urdu Daily Newspapers as well on your web site.
Enc.- As above .

Kama
9/8/19
Additional Secretary
cum Nodal Officer(Food Safety)
Health Department, GOB,

**EXPRESSION OF INTEREST
FOR
REFURBISHMENT/ UPGRADING, OPERATION
AND MANAGEMENT
CONTRACT
OF**

**STATE FOOD LABORATORY
COMBINED FOOD AND DRUGS LABORATORY,
AGAMKUAN, PATNA, BIHAR**

**Health Department,
Government of Bihar,
1st Floor Vikas Bhawan, Bailey Road,
Patna, Bihar.
800 015.**

**HEALTH DEPARTMENT
Government of Bihar**

1st Floor, Vikas Bhawan, Bailey Road, Patna - 800 015.

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Letter for Invitation:

Dear Sir/Madam,

EXPRESSION OF INTEREST (EOI) are invited on behalf of Health Department, Government of Bihar for ESTABLISHMENT, REFURBISHMENT / UPGRADING, OPERATION AND MANAGEMENT on PPP/Outsourcing mode for analysis of food, quality monitoring and regulatory purposes of FOOD ANALYSIS LABORATORY situated in COMBINED FOOD AND DRUGS LABORATORY, AGAMKUAN, PATNA, BIHAR, 800007, from interested/intending NABL & BIS accredited, FSSAI notified, ISO & OSHAS certified Government (State/Central/Union Territory)/Private Limited Company, having prior experience in operating NABL Accredited Food Testing Labs in India. The goals towards the expression of interest are given in this document.

Tender Methodology:

The tender methodology to be adopted will be in two stages comprising the EXPRESSION OF INTEREST (EOI) in the first stage. The second stage of tendering process will comprise of issuing RFP inviting Technical and Financial Bids. The evaluation criteria for the tendering process would follow the quality cum cost based system. The cost associated with the preparation and submission of the response to the EOI and tender shall be borne by the bidder.

Terms of reference for this EOI are as follows:-

- A. Only short listed firms will be issued tender documents with an invitation to submit Technical and Financial Bids separately.
- B. Health Department, Government of Bihar reserves the right to cancel/re-issue the process if necessity so arises, or to seek further information/details.
- C. Firms/organization, if found to have indulged in any corrupt or fraudulent practices, made a false representation in the form, statement and attachments required in the Registration documents will be debarred from taking part in the tendering process and their EOI documents will not be taken up for consideration.
- D. A Pre-bid conference will be held as per the details given below:

Date: 29.08.2019, Time: 11:00 A.M , Venue: Meeting Hall, Health Department

Health Department, GOB, Patna reserves the right to accept or reject any or all of the offers at any stage of the process without assigning any reason thereof and any claim /dispute on this shall not be entertained.

Yours Sincerely,

Kamlesh
9/8/19

Additional Secretary
cum Nodal Officer (Food Safety)
Health Department, GOB
1st Floor, Vikas Bhawan,
Bailey Road, Patna,
Bihar – 800015.

INTRODUCTION:

Bihar is the twelfth largest state of country area wise with a population of approx 110.0048 million and density of 1,106 person per sq km. Govt. of Bihar follows the statement - **The First Wealth is Health**. Hence, Health & Family Welfare are of prime concerns for the Government of Bihar.

The Food Safety Commissionerate works with a vision of creating enabling atmosphere to ensure availability of safe and adequately nutritious food to prevent diseases and lead healthy and happy lives. It also strives for adoption of globally benchmarked food standards and encourages for good manufacturing and hygienic practices.

1. STATE FOOD LABORATORY, AGAMKUAN, PATNA

Department of Health established the STATE FOOD LABORATORY within COMBINED FOOD AND DRUGS LABORATORY, AGAMKUAN, PATNA, BIHAR, 800007 for Analysis of all food and beverages on parameters mentioned in FSSR regulations. CFDL with food and drugs testing laboratory has its own building at Agamkuan, Patna, Bihar-800007 in around eight acres area. Only Food Testing Laboratory has to be established/refurbished/upgraded, operated and managed which is located on ground floor of the Combined Food and Drugs Laboratory Building. CFDL is enlisted in the FSSAI State Laboratory list and has the status of referral laboratory and is under the administrative control of Health Department, Government of Bihar. Total Built up Area of the State Food Laboratory is 8851 square feet (Laboratory area of 5883 square feet and office space of 2968 square feet).

2. OBJECTIVES AND SCOPE OF THE PROJECT

The objectives of the proposed project are as follows:-

1. To establish, refurbish, upgrade CFDL, Agamkuan, Patna with complete testing facilities as per requirements of FSSR along with the required man power to fully operate and run the laboratory as per details provided in **Annexure D**.
2. The Scope of the project will include the supply, installation, testing and commissioning of following equipment facilities for testing of General Parameter, Food additives & contaminants containing Pesticide residues

analysis, Heavy Metals, Drugs and antibiotic residues, Nutritional Evaluation and Microbiological analysis in food, as per details provided in **Annexure A**, along with other general laboratory equipment and providing required laboratory furniture etc. (Lab layout as at **Annexure E**).

3. The successful bidder will have to carry out necessary civil, plumbing and electrical work required for proper set up and functioning of the laboratory and commissioning of following equipment facilities, including but not limited to provision of HVAC system for the MICROBIOLOGY LABORATORY, Gas piping work, wherever required, providing suitable laboratory furniture, carrying out minor structural modifications/additions required for access to the rooms etc. Detailed plan of the civil modifications required will have to be submitted by all the bidders and will be subject to approval of the HD, GOB.
4. Suitable provision for Air Conditioning at CFDL, Agamkuan, Patna will also have to be made by the successful bidders.
5. The Successful bidder will ensure NABL accreditation of CFDL, Agamkuan, Patna, within a period of one and a half year from the date of handing over the laboratory, for the entire scope of testing being carried out in the laboratory (as per Rule 2.4.2 of FSSR-2011 for analysis of food samples by Food Analyst) for safety and quality parameters specified in FSSR-2011 and amendments thereafter, if, and including General Parameter, Food additives & contaminants containing Pesticide residues analysis, Heavy Metals, Drugs and antibiotic residues, Nutritional Evaluation and Microbiological analysis.
6. Supply and installation of General Instruments according to the list of **Annexure-C(1)**, commissioning of department's some of the Sophisticated instruments & rest to be provided as in **Annexure-C(2)**, Microbiology Lab equipment as in **Annexure-C(3)**, Glassware and General Apparatus for start-up as in **Annexure-C(4)**, Chemicals for start-up as in **Annexure-C(5)**, Media for Microbiology as in **Annexure-C(6)** and Laboratory analytical requirements as in **Annexure-C(7)** of requisite grade for classified food testing shall be procured. These annexed lists are tentative and may be provided/procured as per requirements of the successful bidder. (In offer letter provide **Specifications/Quality in annexure**).
7. Based on fixed proportionate rate, minimum number of sampling frequency & minimum number of tests to be carried out, will be one thousand seven hundred per month. This can be elevated for outside samples at a fee fixed after mutually agreed consent.
8. Operation and maintenance of the Food Analysis Lab, Agamkuan, Patna shall be on PPP/Outsourcing contract mode for five years subject to extension on successful operation and management;

9. Health department, Bihar shall retain the legal identity of the laboratory and the Incharge Food analyst and Sample cell incharge shall be the employees of the State Government.
10. The successful bidder shall be responsible for complete maintenance and daily running of the laboratory.
11. The laboratory will be handed over on as is where is basis along with the available equipments and facilities. The bidders are advised to visit the laboratory on any working day with prior intimation to the Incharge Food Analyst Shri Mahendra Pratap Singh, Mob no. 9430030897 in their own interest to assess the existing facilities and ascertain the requirements from their end.

3. INDICATIVE REQUIREMENT OF SCIENTIFIC AND TECHNICAL MANPOWER:

Successful bidder will have to provide the requisite scientific and Technical manpower and supporting human resource at CFDL, Agamkuan, Patna for operation and maintenance of various analytical facilities (Following Indicated list and as per details provided in Annexure D) and housekeeping staff.

SI No	Designation
1	Representative Technical Manager Chemistry
2	Deputy Technical Manager Chemistry
3	Representative Technical manager, Microbiology
4	Deputy Technical Manager Microbiology
5	Representative Quality assurance manager
6	Deputy Quality assurance manager.
7	Quality assurance executive.
8	Analyst Chemistry
9	Analyst Microbiology
10	Data entry operators and sample cell support staff
11	Lab attendant
	TOTAL

- (a) The educational qualification experience etc. of the manpower has to be in accordance with the requirement of ISO 17025 which has to be ensured by the successful bidder.
- (b) The successful bidder will have to make provision towards the security and housekeeping arrangement of the CFDL, Agamkuan, Patna. The Successful bidder can outsource the work related to security and housekeeping activity if it so desires. However, no cost towards the same will be payable by HD, GOB.

4. SUBMISSION OF EOI:

The eligible agencies have to submit their EOI given detail methodology which they would adopt for the running of their laboratory in PPP Mode. The indicative scope of infrastructure/equipment, Chemicals, glassware and various requirements along with manpower mentioned in this document is for reference purpose only and not exhaustive. The eligible agencies may modify the requirement as per the methodology proposed to be adopted by them.

The Agency(s) interested to participate in this EOI process for empanelment/short listing/selection should submit self-attested copies of the following documents and information in his/her/their offer in sealed envelope so as to reach the Office of the Additional Secretary cum Nodal Officer(Food Safety), Health Department, 1st Floor, Vikas Bhawan, Bailey Road, Patna - 800 015 on or before **27.08.2019 upto 03:00 P.M.** through Regd. Post /Speed Post/Courier only. This EOI is also available on www.health.bih.nic.in and www.prdbihar.gov.in.

5. ELIGIBLE AGENCIES:

The Agencies intending to submit EOI for establishing, refurbishing/upgrading, operating and management of Food Analysis Laboratory, at Combined Food and Drug Laboratory, Agamkuan, Patna, Bihar, 800007 will be shortlisted for Request for Proposal based on the following eligibility conditions:

1. The Agency should be globally recognized since long period as an independent inspection and testing company with International Certification Accredited Laboratory. Extra credentials will be given for Agency having membership of IFIA, accreditation of KAN, NATA, and other related certifications/ accreditations/ recognitions/memberships.
2. The Agency should have registered head quarter in India for last 25 years and bear 10 years of Food Analysis experience in India.
3. The consecutive annual turnover of the Agency should be minimum 100 crores or above in last three financial years i.e. 2015-16, 2016-17 and 2017-18.
4. Agency should have owned minimum three food analysis/testing laboratories in this country with at least one having a valid accreditation and certification by NABL/BIS/FSSAI/ ISO & OSHAS.
5. The Labs should have at least three qualified food analysts.
6. Work experience as PPP/Outsource Agency in Food Analysis/Labs operation with Government Institution/Private Institutions of repute must be above 25 in numbers.


✓

7. The Agency must have above 25 numbers of completed Projects along with some being renewed from time to time.
8. Capability of Agency for analysis/testing of other products than Food in the Lab.
9. The Agency must have an established office at Patna after work order and agreement with the Department.

The above is for provisional empanelment only. Detailed terms & conditions will be stipulated in RFP to be floated later.

6. MANDATORY/ESSENTIAL DOCUMENTS TO BE SUBMITTED ALONG WITH THE EOI:

1. Valid Registration Certificate of the intending Agency. The Registration Certificate should also contain the name/nomenclature of the analysis/tests and relevant standard(s)/specification(s) to be followed for conducting such analysis/tests for which the Agency has been permitted /allowed in the Registration Certificate.
2. Valid accreditation and certification by NABL, BIS, FSSAI, ISO & OSHAS for the laboratories being operated by the agency. Extra credential certificates IFIA, KAN, NATA or/and any other.
3. List of analysis/tests being conducted by the agency with name of Clients. Preference will be given having PPP/Outsourcing mode of operation experience in analyzing/testing of food for the analysis listed in the **Annexure-A**.
4. Details of similar experience as food for other laboratories/analysis, if any.
5. Details of Employees engaged in the agency for this purpose.
6. Annual turnover and balance sheet for last 3 years, i.e. 2015-16, 2016-17 and 2017-18.
7. Valid GST registration certificate as prescribed by Government of India and State Government issued in the name/nomenclature of the Agency.
8. PAN CARD in the name of the Agency.
9. Detailed Address, Telephone Contact No., e-mail ID & Web Site reference (if any).
10. An Applicant shall be subject to disqualification at any stage of empanelment process, if it has:
 - a. Made a false representation in the form, statement and attachments required in the Registration documents;
 - b. Has been debarred by Government of India / Government of Bihar or any other governmental agency
10. The format for submission of offer for empanelment is placed at **Annexure-B**


09/9/15
Additional Secretary cum Nodal Officer
(Food Safety)
Health Department, GOB

ANNEXURE-A

Food Analysis/Testing for the purpose of carrying out Analysis of samples taken under section 47 of the Food Safety and Standards Act, 2006 for Chemical, Biological & Other Scope of Testing Product/Materials of Test Items in the State Food Analysis Laboratory, Agamkuan, Patna, Bihar.

SI No	List of Food Analysis/Test		
1	2		
(a)	General Parameter		
1	Moisture	2	Total Ash
3	Acid Insoluble Ash	4	Water Soluble/Insoluble Ash Alkalinity of Ash
5	Acidity	6	Total soluble solids
7	Total volatile extracts		
(b)	Food additives & contaminants		
1	Colors	2	Antioxidants
3	Preservatives	4	Artificial sweeteners
5	Pesticide residues analysis	6	Heavy metals
7	Drugs and antibiotic residues Mycotoxin analysis Food adulterant		
(C)	Nutritional Evaluation		
1	Fat	2	Protein
3	Crude fibre	4	Dietary Fibre
5	Carbohydrates	6	Calories
7	Fatty acid (MUFA, PUFA)	8	Cholesterol
9	Amino acid composition	10	Vitamins
11	Minerals		
(D)	Microbiology		
1	Total Plate Count	2	Coliform count
3	Aerobic spore count	4	Anaerobic spore count
5	Yeasts and mold count.	6	E. coli
7	Salmonella spp	8	Shigella Spp
9	Vibrio cholera	10	Vibrio parahaemolyticus
11	S. aureus	12	Listeria monocytogenes
13	Clostridium botulinum		

LETTER OF SUBMISSION OF OFFER

Letter No

Place:

Date:

From:

[Name of Agency/Firm with
Complete Address of Communication]

To:

**The Additional Secretary
Cum Nodal Officer(Food Safety),
Health Department, Government Of Bihar,
1st Floor, Vikash Bhawan,
Patna, Bihar. PIN 800 015.**

**Subject: EMPANELLING/SHORTLISTING OF AGENCIES FOR ESTABLISHMENT, REFURBISHING/
UPGRADING OPERATION AND MANAGEMENT OF FOOD ANALYSIS LABORATORIES
SITUATED IN COMBINED FOOD AND DRUGS LABORATORY, AGAMKUAN, PATNA FOR
ANALYSING, QUALITY MONITORING AND REGULATORY PURPOSE OF FOOD.**

Sir,

We, the undersigned, offer to provide the services for the above in accordance with your E.O.I. dated **17.08.2019** We are hereby submitting our offer both in hard copy and soft copy format sealed in an envelope.

We have examined the information provided in your E.O.I and offer to undertake the work described in accordance with requirements specified in E.O.I. This proposal is valid for acceptance for 120 days and we confirm that this proposal will remain binding upon us and may be accepted by you at any time before this expiry date.

We, hereby, declare that all the information and statements made in this Proposal are true and accept that any misinterpretation contained in it may lead to our disqualification.

I confirm that I have the authority of (***Name of the agency/institution***) to submit this offer and to clarify any details on its behalf.

We understand you are not bound to accept any offer you receive.

Yours sincerely,

Enclosures:

1. Accreditations/Credentials/Certifications/Etc-
2. Draft Design for Lab.
3. Annex A
4. Annex B(A),B(B),B(C)(a),B(C)(b),B(D),B(E),B(F),
B(G),
5. Annex C(1), C(2), C(3), C(4), C(5), C(6), C(7)
6. Annex D

Signature [In full and initials]:

Name and Title of Signatory:

Name of Firm:

Address:

FORMAT FOR SUBMISSION OF OFFER

A. General Details:

Sl	Name of the organization / Firm/Institute	
1.	Permanent address Tel : Fax : Mobile : Email id :	
2.	Name of the Authorized person for submitting proposal: Mobile No. : Email id : <i>(Attach Authorization letter of Competent Authority)</i>	
3.	Details of Registration of the firm (Enclose Copy of certificate)	
4.	Details of GST registration (enclose copy of certification)	
5.	Details of PAN of Income tax	
6.	Whether the agency was ever blacklisted: Y / N if yes whether that blacklisting was not cancelled: Y/N (If yes, attach copy of same and the affidavit)	
7.	Brief professional background of the Company in accordance to the Scope, Eligibility, PPP model.	
8.	Confirm to carry assignment as per E.O.I.	YES

Annexure-B (B)

B. Financial Details:

Sl No	Year	Turnover	Net Worth
1	2	3	4
1	2015-16		
2	2016-17		
3	2017-18		
4	Avg for 3 years		

(Certificate from Chartered Accountant to be enclosed along with the copies of balance sheets)

Annexure-B (C)(a)

C. (a) Institutional Strength (Qualification and Number of Own Expert / Technical Support)

Sl No	Name of the Expert	Qualification	Experience	Details of Expertise in Food Testing/Analysis
1	2	3	4	5
1				
2				
3				
4				

(Add rows for additional number if necessary.)

Annexure-B (C)(b)

C. (b): Total Number of personnel in payroll as of 31st Dec, 2018

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Annexure-B (D)

D. Work Experience (Similar work of operating Food Testing Lab) up to 31/12/2018

Sl No	Details of Laboratory and address	Testing facility	Accreditation Agency details	Number of years of operation	Type of ownership/ contract of operation
1	2	3	4	5	6
1					
2					
3					
4					
5					

(Add Rows if required, Certificates of accreditation to be enclosed)

Annexure-B (E)

E. Experience in other Lab operation (up to 31/12/2018)

Sl No	Details of Laboratory and address	Testing facilities available	Accreditation Agency details	Number of years of operation	Type of ownership/ contract of operation
1	2	3	4	5	6
1					
2					
3					
4					
5					

(Add Rows if required, Certificates of accreditation to be enclosed)

F. Suggestions on preferred technology for Food analysis required to be carried out for the analysis/ test listed at Annexure A-

SI No	Name of the TEST	Suggestion on preferred methods and equipments
1	2	3
(a)	General Parameter	
1	Moisture	
2	Total Ash,	
3	Acid Insoluble Ash	
4	Water Soluble/Insoluble Ash Alkalinity of Ash	
5	Acidity,	
6	Total soluble solids,	
7	Total volatile extracts	
(b)	Food additives & contaminants	
1	Colors	
2	Antioxidants	
3	Preservatives	
4	Artificial sweeteners	
5	Pesticide residues analysis	
6	Heavy metals	
7	Drugs and antibiotic residues Mycotoxin analysis Food adulterant	
(C)	Nutritional Evaluation	
1	Fat	
2	Protein	
3	Crude fibre	
4	Dietary Fibre	
5	Carbohydrates	
6	Calories	
7	Fatty acid (MUFA, PUFA)	
8	Cholesterol	
9	Amino acid composition	
10	Vitamins	
11	Minerals	
(D)	Microbiology	
1	Total Plate Count	
2	Coliform count	
3	Aerobic spore count	
4	Anaerobic spore count	
5	Yeasts and mold count.	
6	E. coli	
7	Salmonella spp	

8	Shigella Spp	
9	Vibrio cholera	
10	Vibrio parahaemolyticus	
11	S. aureus	
12	Listeria monocytogenes	
13	Clostridium botulinum	

Annexure-B (G)

G. Suggestion on mode of contract for establishment, operation and management on PPP mode of State Food Laboratory –

Authorized Signatory (Signature in full and initials):

Name and title of Signatory:

Name of Company:

Address:

List of General Equipments

Equipment Specification as per Scope of Work required to carry out the Food Analysis/Test as per FSSAI scope of testing

Sl. No.	List Of General Laboratory Equipment	Specification
1	2	3
1	Analytical Balances	
2	Auto pipettes	
3	Auto Titrators	
4	Autoclaves	
5	Bottle dispensers	
6	Centrifuges	
7	Conductivity meters	
8	Desiccators	
9	Electric Heaters	
10	Frost Free Double Door Refrigerators	
11	Fume Hoods	
12	Hand Free Refractometer	
13	Heating Mantles	
14	Hot plate cum stirrers	
15	Hot Plates	
16	Incubators	
17	Laboratory Blender	
18	Magnetic Stirrer	
19	Microwave digestor	
20	Muffle Furnances 450 ⁰ C & 550 ⁰ C (2 nos.)	
21	Ovens – for glassware drying/Moisture 100 ⁰ C & 130 ⁰ C (3 nos.)	
22	pH Meters	
23	Sample Shakers	
24	Solvent Dispensers – Organic & Acids	
25	Soxhlet Apparatus	
26	Sulphur-di-oxide Apparatus	
27	TDS Meter	
28	Temperature controlled Water Baths	
29	Toluene Distillation Set	
30	Upright Freezers	
31	Vacuum Oven	
32	Vortex Mixers	
33	Waring Blender/Grinding Mill	
34	Water Distillation Set	
35	Weighing Balance	

Annexure-C(2)

List of Sophisticated Instruments, Application
Instrument Specification as per Scope of Work required to carry out the Food Analysis/Test
as per FSSAI scope of testing

Sl. No.	Description	Application	Specification/ Department Supply
1	2	3	4
1	Automated liquid handling system	For accurate dispensing and aspiration of routine lab reagents etc.	
2	Automated Nitrogen evaporators	Concentration of samples for LC and GC-MS/MS	
3	Automated Solid phase extractor	Enrichment of pesticide/antibiotic residues and removing of interfering matrices for LC-MS/MS and GC-MS/MS	
4	Automatic Flash Point Tester		
5	Atomic Absorption Spectrometer with Graphite Furnance	Metal analysis	
6	Automated amino acid analyser	Nutritional evaluation of proteins	
7	Binary/quaternary gradient HPLC with photodiode array, fluorescence and Evaporative light scattering detectors	For estimation of preservatives, artificial sweeteners and leachates from food packing material	
8	Butyro Refractometer Reading System with temperature control	BRR of oils	
9	Clean bench system Biosafety cabinets	Sample preparation under steril conditions for ICP-MS	
10	Fully automated Fiber analyser	Required for analysis of dietary fiber, soluble and insoluble.	
11	Fully automated Kjeldhal analyzer	Nitrogen, protein estimation	
12	GC-MS-MS	General purpose instrument for screening chemical contaminations and leaches of food packings	Department Supply
13	High speed floor model Centrifuge	For separation of solid particles.	
14	HPLC-ICP-MS	This machine has been used effectively in simultaneous separation and determination of nine species of the three elements arsenic, selenium and antimony. Using this technique, calibration by	

		isotope dilution mass spectrometry (IDMS) can be carried out. Organic speciation analysis has also been carried out using LC ICP-MS.	
15	HR GC MS/MS	For detection and confirmation of food additives chemical contaminates melamine, acrylamide bisphenol.	
16	ICP-MS	Heavy metal and trace metal analysis	Department Supply
17	LC-MS-MS with Ion trap	Pesticide residues, antibiotic residues, mycotoxins etc.	Department Supply
18	Multimode ELISA reader and plate washer	For automated ELISA of various contaminants.	
19	Microwave Digestor	For metal analysis sample preparation.	
20	Tintometer	For reading color.	
21	Rotary Evaporator	Required for concentration	
22	Sonic water-bath	General purpose	
23	Spectrofluorometer	For bioassays and detection of aflatoxin and vitamins.	
24	Table top microfuge refrigerated and non-refrigerated	General purpose to clarify	
25	Temperature controlled orbital Water Bath shakers	Required for extractions and analysis	
26	Tintometer	Color/Reflectance Measuring System.	
27	UV—Vis double beam spectrometer	Required for colorimetric estimation of various analytes	
28	Viscometer	To measure viscosity	
29	Video microscope	To determine foreign starch	
30	Water purification system (Element analysis grade)	To use in ICP-MS, GC-MS-MS sample preparation instrumental use.	
31	Wireless Real Time Lab Monitoring System	A monitoring system of temperatures and others parameters; relative humidity, differential pressure, CO ₂ , O ₂ , dry contacts are critical parameters for quality assurance under ISO 17025.	

Annexure-C(3)

List of Equipments for Microbiology Laboratory
Specification/Quality as per Scope of Work required to carry out the Food Analysis/Test as
per FSSAI scope of testing

Sl. No.	Description	Specification/Quality
1	2	3
1	Anaerobic Jar	
2	Analytical Balance	
3	Autoclave Vertical	
4	Automated Culture Media Preparation with pourer Stacker	
5	Automated Glassware Washer	
6	Binocular Microscope	
7	Bio Safety Cabinet Class II Type B2 (Total Exhaust)	
8	BOD Incubator	
9	Carbon di oxide Incubator	
10	Circulating Water Bath	
11	Digital Colony Counter	
12	Digital pH Meter	
13	Frost Free Double Door (Side by Side) Refrigerator	
14	Fumigator	
15	Hot Air Oven	
16	Howard Mold Counter	
17	Incubators: Ambient to 70°C & 5°C to 50°C (2 nos.)	
18	Lab Blender (Paddle Type)	
19	Laminar Air Flow	
20	Micro Filtration Assembly	
21	Micro Pipette – 6 nos.	
22	Orbital Shaker/Water Bath	
23	Sonic Water Bath	
24	Real Time-PCR	
25	Refrigerated Centrifuge	
26	Trinocular Microscope	
27	Upright Frost Free Vertical Deep Freezer (-25°C)	
28	UV Viewing Chamber	
29	UV-Vis Spectrophotometer	
30	Water Bath – Serological	

Annexure-C(4)

List of Glassware and General Apparatus for Start-up
Specification/Quality as per Scope of Work required to carry out the Food Analysis/Test as
per FSSAI scope of testing

Sl. No.	Description	Specification/Quality
1	2	3
1	Beakers All Sizes	
2	Bell Jar	
3	Blue Litmus Paper	
4	Burette	
5	Conical Flask with Stoppers	
6	Desiccators/Vacuum Desiccators	
7	Digestion Flask (300 ml)	
8	Erlenmeyer Flasks	
9	Filter Papers Circles (No. 1, 41, 42)	
10	Funnels	
11	Glass Pipettes	
12	Kjeldhal Distillation Flasks	
13	Litmus Paper	
14	Measuring Cylinders	
15	Pipette Bulbs	
16	Red Litmus Paper	
17	Separating Funnels	
18	Sieves	
19	Silica Dishes	
20	SO ₂ Distillation Set	
21	Soxhlet Extraction Unit	
22	Test Tubes all sizes (Stoppered and unstoppered)	
23	Thimbles 20/80	
24	TLC chamber rectangular (250 X 250 X 120 mm)	
25	Tripod Stand	
26	Volumetric flasks	
27	Wash Bottles (Glass) (Plastic)	
28	Wire Gauze	
29	Microbiology Laboratory:- Test Tubes Petri Dishes Durham's Tubes Dilution and Media Storage Bottles Spreaders Slides and cover slips Disinfectant jars Inoculation loops Non-absorbent Cotton Wool	

Annexure-C(5)

List of Chemicals for Start-up

The list of fine chemical and chemical required for testing will vary depending on the analysis. The general chemical listed below are required for a Startup. Fine chemicals, standards and certified reference materials should be procured depending on the parameter being analyzed. A basic indicated list is provided below -

Sl. No.	Description	Specification/Grade
1	2	3
1	Acetic acid	
2	Ascorbic acid	
3	Ammonia	
4	Ammonium oxalate	
5	Ammonium molybdate	
6	Ammonium Thiocyanate	
7	Acetone	
8	Benzoic acid	
9	Butanol – n	
10	Boric acid	
11	Bromo Cresol Green	
12	Bromo Cresol	
13	Buffer tablets (4 & 7)	
14	Chloroform	
15	Copper sulphate	
16	Calcium chloride fused	
17	Dextrose	
18	Diethyl Ether	
19	Dichlorophenol indophenol dye	
20	Ethyl alcohol	
21	Hydrochloric acid	
22	Hydrogen Peroxide	
23	Iodine	
24	Lead Acetate	
25	Methyl orange	
26	Methylene blue	
27	Metaphosphoric acid	
28	Nessler's reagent	
29	Nitric acid	
30	Oxalic acid	
31	Potassium hydroxide	
32	Potassium metabisulfite	
33	Potassium dihydrogen phosphate	
34	Phenolphthaline	
35	Potassium Persulphate	
36	Potassium iodide	
37	Potassium iodate	

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38	Potassium dichromate	
39	Potassium chromate	
40	Potassium permanganate	
41	Petroleum Ether (40-60°)	
42	Petroleum Ether (60-80°)	
43	Sodium carbonate	
44	Sulphuric acid	
45	Sodium hydroxide	
46	Selenium dioxide	
47	Sodium Potassium tartrate	
48	Sucrose	
49	Silver Nitrate	
50	Sodium benzoate	
51	Sodium Saccharin	
52	Sodium sulphate anhydrous	
53	Sodium chloride	
54	Sodium Bicarbonate	
55	Malabar chips	
56	Zinc Granules	

List of Media for Microbiology
Specification/Quality as per Scope of Work SI No 8 required to carry out the Food
Analysis/Testas per FSSAI scope of testing

Sl. No.	Description	Specification/Quality
1	2	3
1	Acetate Agar	
2	Andrade Peptone Water	
3	Asparagine – Proline Broth	
4	Baird Parker Agar	
5	Bile Esculin Azid Agar	
6	Bile Salt Agar	
7	Bismuth Sulphite Agar	
8	Blood Agar	
9	Brain Heart Infusion Broth	
10	Brilliant Green Agar	
11	Brilliant Green Lactose Bile Broth	
12	Bromocresol Purple Carbohydrate Broth	
13	Buffered Peptone Water	
14	Butterfield's Buffered Phosphate Diluents'	
15	Carbohydrate Utilization Broth	
16	Centrimide Agar	
17	Chloramphenicol Yeast Glucose Agar	
18	Cooked Meat Salt Medium	
19	Czapek Yeast (Autolysate) CYA Agar	
20	Decarboxylase Test Medium (Lysine, Ornithine, Arginine provide separately)	
21	Deoxycholate Citrate Agar Medium	
22	Dextrose Tryptone Agar	
23	EC Broth	
24	Egg Yolk Tellurite Supplement	
25	Frazer Broth	
26	Gelatin Agar	
27	Geletin Phosphate Salt Broth	
28	Glucose Salt Teepol Broth	
29	Gram Negative Broth (GN)	
30	Half Freezer Broth	
31	Hektoen Enteric Agar	
32	Hugh Leifson Medium	
33	Kauffman Muller's Tetrathionnate Broth Base	
34	Kligler Iron Agar	
35	Koser's Citrate Broth	
36	Lactobacillus MRS Agar	
37	Lactose Broth	
38	Lactose Geletine Medium	
39	Lauryl Tryptose Broth	

40	Levine Eosin- Methylene Blue Agar (L-EMB Agar)	
41	Liver Broth	
42	Lysine Decarboxylase Broth	
43	Lysine Iron Agar	
44	Malonate Broth	
45	Malt Agar	
46	Mannitol Yolk Polymyxin (MYP) Agar	
47	McConkey Broth / Agar	
48	Methyl Red Voges Proskauer (MR-VP) (Glucose Phosphate Broth)	
49	Milk agar with certrimide	
50	Modified Oxford Agar	
51	Motility Test Medium	
52	MY-40 Agar	
53	Nitrate Broth	
54	Nutrient Agar	
55	Nutrient Broth	
56	Placam Agar	
57	Palcam Agar	
58	Phenol Red Carbohydrate Broth	
59	Phosphate Buffered peptone water	
60	Plate Count agar	
61	Potato Dextrose agar	
62	Pseudomonas Presumptive Test Broth	
63	Pseudomonas confirmation medium (Skin Milk Agar)	
64	Rappaport Vassiliadis Soya Broth	
65	Selenite Cystine Broth	
66	Selenite F broth	
67	Sheep Blood Agar	
68	Simmous Citrate agar	
69	Slanetz and Bartley Medium	
70	Sulphite Agar	
71	T1 N1 Agar	
72	Tergitol-7 Agar base	
73	Tetrathionate Broth	
74	Thioglycollate Agar	
75	Thiosulfate-Citrate-Bile Salts-Sucrose Agar (TCBS)	
76	Triple Sugar iron Agar	
77	Trypticase Soy Broth	
78	Trypticase Broth	
79	Trypticase Glucose Extract Agar	
80	Trypticase soya agar	
81	Trypticase-Sulfite Cycloserine (TSC) Agar	
82	Urea Broth	
83	Violet Red Bile Agar	
84	Xylose Lysine Deoxycholate Agar (XLD)	

Annexure-C(7)

List of Miscellaneous Laboratory Items

Specification/remarks as per Scope of Work required to carry out the Food Analysis/Test as per FSSAI scope of testing

Sl. No.	Description	Remarks
1	2	3
1	Necessary Civil work in the Food Lab Area.	
2	Continuous Water Supply System, Plumbing work.	
3	Uninterrupted and fluctuation free Power Supply & Back Up, Strong Grounding, Circuit breaker, Electrical work.	
4	UPS system – Centralized True –on line of 50KVA (3ph Input – 3 ph Output)	
5	Air Condition- Controlled temperature & Dust Proof	
6	For Microbiology Lab - Clean Room Laboratory setup & furniture for microbiology laboratory with modular unidirectional flow with different zones, Modular Paneling and Flooring Works, Heating, Ventilation and air conditioning (HVAC) System, Outdoor Condensing Units (Packed ductable Split AC), Comprehensive Electrical works, Wall Mounted fans (In unclassified areas), Lighting fixtures, Fire extinguisher, Air curtain, Hand sanitizer (6 nos.), Single Biometric Access (1 no.), Installation, Testing & Commissioning SS – 316 Vertical LAF bench for sample preparation room as per size : -4' X 2.5' X 2.5' (2 nos.) meeting with minor changes as per area available, Static pass box (1 no.), Dynamic Pass box (3 nos.), Cross over Bench at entry and exist of clean room and media room (as per approved layout) (3 nos.), SS Work Bench/table (6 nos.), Modular Work bench (3 nos.), Modular work bench with sink and eyewash (2 nos.), Movable trolley with lockable wheels (2+2 = 4 nos.), Bench stool (8 nos.), Sterile garment storage cabinet (in Air Lock 2 of entry to clean room) (1 no.)	
8	Furniture & Fixture- Office tables, chairs, Storage facilities, Work table (Vibration proof), bench, Safety cabinets for storage of chemical solution (acids & bases, solvents to be stored separately) and chemicals	
5	Computer, Printer, UPS & accessories, network connections,	
6	CCTV surveillance	
7	Safety- Lab coats, Fire extinguisher, Hand washing facility, First aid kit, Eyewash, Dust masks, Safety glasses and ear protection, Cubicles connected to a ventilation system for grinding, Proper Air Vents & fume extraction, Shower, Fire Alarm	
8	Waste disposal containers, Waste disposal containers for broken glass, chemical waste, plastic ware, paper	
9	Brushes for cleaning sieves and grinder and Vacuum Facilities	
10	Samples splitter, Chemical spill kits	
11	Gas Supply System-Nitrogen gas, compressed air gas, Argon gas, Helium gas	
12	Proper Drainage with ETP System and provision of contamination control.	

INDICATIVE REQUIREMENT OF SCIENTIFIC AND TECHNICAL MANPOWER

The requisite scientific and Technical manpower and supporting human resource at State Food Laboratory, CFDL, Agamkuan, Patna is as follows:

Sl.No.	Designation	Numbers
1	Representative Technical Manager Chemistry	
2	Deputy Technical Manager Chemistry	
3	Representative Technical manager, Microbiology	
4	Deputy Technical Manager Microbiology	
5	Representative Quality assurance manager	
6	Deputy Quality assurance manager.	
7	Quality assurance executive.	
8	Analyst Chemistry	
9	Analyst Microbiology	
10	Data entry operators and sample cell support staff	
11	Lab attendant	
	TOTAL	

FOOD ANALYSIS LABORATORY, CFDL, AGAMKUAN, PATNA LAYOUT OF MAP

