

CSIR-CIMAP Technology Know-How

Bharatiya Nirdeshak Dravya (BNDs)/Indigenous Certified Reference Material (CRMs) of phytochemicals



S. No.	BND Number	Name of the Chemical	Medicinal Plant as per (IP/API)
1.	BND 9006	Caffeine	कफ़ी (Coffea arabica)
2.	BND 9007	Andrographolide	कालमेघ (Andrographis paniculata)
3.	BND 9008	Gymnemenin	गुडमार (Gymnema sylvestre)
4.	BND 9009	Piperine	मरिच (Piper nigrum)
5.	BND 9010	Scopoletin	किंगहाओ (Artemisia annua)/ नोनी (Morinda citrifolia)
6.	BND 9011	Tambulin	तिमुर (Zanthoxylum armatum)
7.	BND 9012	Withanoside IV	अश्वगंधा (Withania somnifera)
8.	BND 9013	Withanolide A	अश्वगंधा (Withania somnifera)
9.	BND 9014	14-Deoxy-11,13-Didehydro andrographolide	कालमेघ (Andrographis paniculata)
10.	BND 9015	Withaferin A	अश्वगंधा (Withania somnifera)
11.	BND 9016	Withanone	अश्वगंधा (Withania somnifera)
12.	BND 9017	Artemisinin	किंगहाओ (Artemisia annua)
13.	BND 9018	Lutein	गेंदा (Tagetes erecta)
14.	BND 9019	Berberine	दारुहरिद्रा (Berberis aristata)

APPLICATION/ USES: To confirm purity and identify adulterants, crucial for aroma, cosmetics, flavor, food, and pharma industries.

BACKGROUND AND MARKET POTENTIAL:

Certified Reference Materials (CRMs) are pivotal in maintaining the country's quality infrastructure by producing globally acceptable products with defined quality and shelf life by testing and calibration measurements traceable to SI units. Reference materials (RMs) are used for quality control, calibration, and validation across various industries, including the production of phyto- and aroma chemicals. The availability of SI-traceable CRM for phyto- and aroma chemicals will boost the "Make in India" Program and harmonize the country's quality infrastructure with ISO global standards. Hence, the proposed initiative will boost self-reliance through AYUSH, flavor and fragrance, and the functional food industry. India ranks high in imports of products classified under HSN 38229010 (Diagnostic or Laboratory Reagents, including Certified Reference Materials). The development of 14 BNDs by CSIR-CIMAP is just the beginning; we are working to develop the process technology to produce the CRMs at economic and globally competitive cost and to make the country self-reliant in this domain.

- To strengthen the quality of AYUSH and AROMA products in the country
- To meet regulatory compliance and quality assurance
- To provide an import substitute



- To cater to the needs of the domestic market
- To produce BND for self-reliance.

ADVANTAGES OF THESE BNDs/CRMs

- ❖ Authenticity, Purity, Source traceability
- ❖ Meeting the requirements of ISO17034 & 17025
- ❖ Measurement Traceability to SI Unit: Certified values are traceable to the National Metrological Institute, i.e., CSIR-NPL, like NIST (USA), LNE (France), NIM (China), PTB (Germany), ensuring high metrological accuracy.
- ❖ Make in India
- ❖ No barrier in International Trade

USP/SALIENT FEATURES:

- ❖ Ready to use for regulatory compliance
- ❖ Fit for quality-verified AYUSH products/ functional food
- ❖ Homogeneity and stability
- ❖ best-in-class with at par quality
- ❖ Certified property values with uncertainty
- ❖ Fit for analytical testing and calibration

TECHNOLOGY DELIVERABLES: 14 BNDs of phytochemicals

YEAR OF DEVELOPMENT: 2024-26

TECHNOLOGY READINESS LEVEL (TRL): TRL 7

IPR STATUS: Patented (Granted & Filed) & Technology Know-How

WHETHER ALREADY LICENSED: No

LINE MINISTRY MAPPING/ USER SECTOR:

- ✓ Ministry of AYUSH,
- ✓ Food Safety and Standards Authority of India (FSSAI), Ministry of Health & Family Welfare, Government of India.

Please contact-

- ✓ For queries: Dr. Karuna Shanker, Scientist-G and Project Leader, BNDs development (k.shanker.cimap@csir.res.in),
- ✓ For EOIs to: Head, TBD, rksrivastava.cimap@csir.res.in or Director (director.cimap@csir.res.in)



Expression of Interest

(To be submitted on Company's Letter Head)

To,
The Director,
CSIR-Central Institute of Medicinal and Aromatic Plants
Lucknow-226015
 E-mail: director.cimap@csir.res.in

Subject: Submission of Expression of Interest (Eol) for Transfer of Technology or joint collaboration in R&D and manufacturing, commercialization –reg.

Ref: CSIR-CIMAP/Eol/..... dated

Sir,

The undersigned, having read and examined in detail all the Eol documents pertaining to the transfer of technology, and do hereby express the interest to undertake the research & development/manufacture/sale/commercialization of the product as mentioned in the Eol document. The following documents (Part-I & II) are being furnished-

Part-I

S.No.	Name of Technology:		Bharatiya Nirdeshak Dravyas(BNDs)/ Indigenous Certified Reference Materials (CRMs) of Phytochemicals
1.	Name of Company	:	
2.	Name and Designation of Contact Person	:	
3.	Corresponding Address with Telephone Number and E-mail	:	
4.	Website Address	:	
5.	GST Registration or GST exemption certificate/		
6.	<i>MSME Certificate (if have any)</i>		
7.	Products/Services handled	:	
8.	Certification & accreditation (GMP / GLP/ ISO/FSSAI/AYUSH) if any).		
9.	Proof of a registered office and a manufacturing Unit in India. Including DSIR certificate		
10.	Annual Turnover of last three years (enclose audited balance sheets) (<i>Relaxation in case of start-ups and MSME would be available in deserving cases</i>)	:	

11.	Details of Income Tax registration, sales tax registration, service tax registration etc.	:	
12.	PAN number	:	
13.	Available Technical Manpower	:	
14.	Brief statement- Why you are interested in the technology	:	

I/we hereby declare that our EoI is made in good faith and the information contained is true and correct to the best of our knowledge and belief.

Looking forward to technology transfer/commercialization.

Yours,

Name

(Signature of the Authorized signatory)

Part II**Financial Bid – Licensing fees including terms of payment (Upfront, milestone, royalty)**
(On company letter head)

S. No	Particulars	
1.	Name of Technology:	
2.	Payment details (Quote in INR):	Rs.... (In words)
3.	Lump sum Licensing Fee Payment (in 02 installments, as indicated below)- i. Payment at the time of signing the Agreement ii. ii. Payment on Completion of Technology Transfer Or Staggered payment of the licensing fee not exceeding three years	
4.	Royalty (negotiable) :	
5.	Nature of technology transfer:	Exclusive/non-exclusive

Technology Information

Standing Advertisement for Expression of Interest (Eoi) for Technology Transfer

“Technology for commercial production of Bharatiya Nirdeshak Dravyas(BNDs)/ Indigenous Certified Reference Materials (CRMs) of Phytochemicals”

CSIR-Central Institute of Medicinal and Aromatic Plants is a constituent laboratory of Council of Scientific & Industrial Research (CSIR), an autonomous body under the Ministry of Science & Technology, Govt. of India.

CSIR – CIMAP is happy to announce that it has developed the technologies of indigenous Certified Reference Material (CRMs) of organic chemicals (phytochemicals) for the AYUSH & Functional food sector:

Eoi are invited from interested Industries / MSMEs / Progressive Entrepreneurs for technology transfer. Interested applicants may send their intent to The Director, CSIR-Central Institute of Medicinal and Aromatic Plants, PO-CIMAP (Near Kukrail Picnic Spot Road), Lucknow-226015; E-mail: director.cimap@csir.res.in in the format as per **Annexure-I**.

Description of the *Indigenous Certified Reference Materials (CRMs) of the Phytochemicals production technology* is available in **Annexure-II**.

About the Policy, Privacy, and Confidentiality

About CSIR-CIMAP

CSIR-Central Institute of Medicinal and Aromatic Plants (CSIR-CIMAP) is a premier multidisciplinary research institute of Council of Scientific and Industrial Research (CSIR), India, with its major focus on exploiting the potential of medicinal and aromatic plants (MAPs) by cultivation, bioprospection, chemical characterization, extraction, and formulation of bioactive phytomolecules. The Institute provides specialized scientific services within its research domain, focused on medicinal and aromatic plants (MAPs).

CSIR-CIMAP is dedicated to achieving excellence in the domains of Medicinal and Aromatic Plants (MAPs) science and technology through various avenues, including sponsored projects, grant-in-aid initiatives, consultancy services, and in-house research programs. The research activities at CSIR-CIMAP are primarily focused on attaining excellence in scientific investigation and on the development and dissemination of technology aimed at transforming knowledge into practical applications. Additionally, these efforts contribute to the nation's societal, industrial, strategic, and developmental goals and aspirations. In all projects financed by external entities, such as agencies, industries, or institutions, CIMAP is committed to maintaining confidentiality and safeguarding its clients' interests to the greatest extent possible.

Confidentiality

The CSIR-Central Institute of Medicinal and Aromatic Plants maintains strict confidentiality of information and data received from its customers, adhering to the terms and conditions established at the time of the agreement's execution. In particular, CSIR-CIMAP is dedicated to ensuring the following provisions-

- Institute enters into a Non-Disclosure Agreement (NDA) in accordance with the model agreement format established by the Council of Scientific and Industrial Research (CSIR) with customers, thereby guaranteeing the protection of any data or information disclosed to them.
- Prior to the transfer of any process or technology, as well as the initiation of any contract research with a customer or sponsor, the Institute executes an agreement based on the model agreement format of CSIR, as required.
- All information received from customers is utilized solely for the specified purposes outlined in the agreement.
- The institute refrains from disclosing any project details in its internal correspondence or documentation.

- The authority to publish information pertaining to such projects in annual reports and other reports directed to external agencies is retained by the Institute, unless explicitly committed otherwise in advance. The Annual Report complies with the terms and conditions of the agreement.
- All external communications related to such projects, including press releases, media interactions, seminar presentations, and publications, are conducted only with the express written consent of the Head TBD and/or Director of the CSIR-CIMAP.
- The authorities and team CSIR-CIMAP are committed to maintaining high standards of personal and professional ethics in their contract research endeavors. In pursuing these assignments, careful consideration is given to avoid potential conflicts of interest.

SOP for CSIR-CIMAP Technology Right to Use

A brief flow chart of the methods of accessing our technologies to be included in the relevant page of the website

- Expression of Interest (EOI) for BND technology is uploaded and available on the CSIR-CIMAP website around the year.
- Proposal of the party is evaluated by the internal committee and the head of technology and business development (TBD) of the Institute, as per CSIR rules
- Party may be requested for interaction in-person/hybrid mode with Head, TBD /Director of the Institute.
- The technical and financial bid needs to be submitted by the owner or authorized person of the firm/company.
- The technical and financial bid is evaluated by the designated person or competent authority
- The party will be informed about the terms and conditions and requested to sign an NDA agreement.
- A non-disclosure agreement (NDA) will be signed with the party, based on mutual agreement, prior to sharing any information.
- Finalization of terms and conditions, including pricing, royalty etc., will be done through negotiation.
- Signing of the agreement/Memorandum of understanding (MoU) with the party would be required before handing over the Technology Transfer Documents (TTD) and related documents.
- Regular monitoring of technology usage should be conducted periodically in accordance with the terms and conditions outlined in the agreement.
- Interested applicants may send their intent to-

The Director
CSIR-Central Institute of Medicinal and Aromatic Plants
PO-CIMAP (Near Kukrail Picnic Spot Road)
Lucknow-226015
Ph:91--522-2718505; Fax:91-522-2718695
E-mail: director.cimap@csir.res.in