EoI No.

Expression of Interest (EoI)

Indian Council of Medical Research, New Delhi

invites EoI for

Joint collaboration for development of vaccine against Lymphatic filariasis (LF)

Indian Council of Medical Research
(Department of Health Research, GoI)
V. Ramalingaswami Bhawan,
P.O. Box No. 4911, Ansari Nagar, New Delhi - 110029, India

CONTENTS

Letter of Invitation

1. INVITATION OF EXPRESSION OF INTEREST

Indian Council of Medical Research, New Delhi, invites Expression of Interest (EoI) through email from vaccine manufacturer/pharma companies/R&D Institutions etc. with experience in developing vaccines for nematode parasite and with global marketing network, for undertaking R&D activities using recombinant antigens of the lymphatic filarial parasite, *Wuchereria bancrofti* for developing vaccine against LF and their manufacturing/commercialization etc.

The EoI Document containing the details of qualification criteria, submission details, brief objective & scope of work and evaluation criteria etc. can be downloaded from the ICMR website (https://www.icmr.gov.in)

Schedule for the Proponents is as under:

EoI Document Number	ICMR/EoI/**VCRC-LFVAg**/2023, 17th April
Date of Publication	Date: 17th April 2023

Note: The EoI may be submitted through email to Mrs. T. Sankari (Technical Officer – C), sankari.t@icmr.gov.in /sankarithirumal@gmail.com and to ICMR Nodal officer Dr. Manju Rahi (Scientist-F) manjurahi.hq@icmr.gov.in / drmanjurahi@gmail.com. Shortlisted firm(s)/organization(s) shall only be contacted for the further process of finalization of the agreement.

ICMR reserves the right to cancel this EoI and/or invite afresh with or without amendments, without liability or any obligation for such EoI and without assigning any reason. Information provided at this stage is indicative and ICMR reserves the right to amend/add any further details in the EoI, as may be desired by the competent authority at ICMR and duly notified on its website.

2. Background

The Indian Council of Medical Research (ICMR), New Delhi, the apex body in India for the formulation, coordination and promotion of biomedical research, is one of the oldest medical research bodies in the world. The ICMR has always attempted to address the growing demands of scientific advances in biomedical research on the one hand and to the need of finding practical solutions to the country's health problems, on the other.

ICMR-Vector Control Research Centre (ICMR-VCRC), Puducherry, one of the constituent Institutes of the Indian Council of Medical Research (ICMR), New Delhi. The Centre has cloned twelve well-characterized antigens of lymphatic filarial parasite, *W. bancrofti*, expressed and

purified the recombinant antigens. These antigens have exhibited good antibody reactivity, in preliminary assays and hence as promising vaccine candidates.
ICMR reserved all the Intellectual Property Rights and Commercialization rights on the recombinant LF antigens stated above. ICMR is lawfully entitled to enter into any form of nonexclusive agreements with Drug/Pharma/Vaccine manufacturers experienced in the development and marketing of vaccines for helminthic parasites, through defined agreement for undertaking R&D as well as manufacturing activities using the recombinant antigens of lymphatic filarial parasite, *W. bancrofti*, hereinafter referred to as the 'Product(s)'.

3. Intellectual Property Rights

ICMR-Vector Control Research Centre (VCRC), Puducherry one of the constituent Institutes of the Indian Council of Medical Research (ICMR), New Delhi, has cloned several well characterized **antigens of lymphatic filarial parasite, *W. bancrofti,*** expressed and purified the recombinant antigens and is the owner of said TECHNOLOGY including any underlying Intellectual Property(ies) and Commercialization rights. ICMR legally possesses the rights and authority to retain full or part of the 'TECHNOLOGY' by itself or to assign at its discretion full or part of the TECHNOLOGY including any patent(s) or intellectual property rights(s) on the invention(s) arising out of such endeavours, and/or ICMR is lawfully entitled to enter into any form of non-exclusive license agreements with selected vaccine manufacturer(s) including transfer of the TECHNOLOGY through suitable agreement.

4. Objective

To make available the well characterized recombinant antigens of lymphatic filarial parasite, *W, bancrofti*, for undertaking R&D as well as manufacturing activities, for the development of vaccine against Lymphatic filariasis.

5. Broad Scope of Collaboration

i. ICMR is willing to collaborate with experienced vaccine manufacturer for undertaking R&D as well as manufacturing activities using the characterized recombinant antigens of lymphatic filarial parasite, *W. bancrofti* for developing potential vaccine candidate against Lymphatic Filariasis.

ii. The firm(s)/organization(s) would be granted rights to undertake further R&D, manufacture, sell, and commercialize the end product **'vaccine candidate' against LF,** following appropriate procedures.

iii. The MoU/MoA, following after all the processes, is proposed to be executed on a "Non-Exclusive" basis with single/multiple firms, due to the potential of the said LF antigens, which is being envisaged to develop vaccine candidate(s).

iv. ICMR-VCRC possesses well-characterized recombinant antigens of lymphatic filarial parasite, *W. bancrofti* useful for developing vaccine(s) against LF. ICMR-VCRC has expertise in various techniques, methods and information relating to these strains which could be used for development of vaccine(s), drug, and other R&D activities etc. ICMR-VCRC will provide expert guidance & technical support on the R&D and product

development, in all phases. Such technical oversight by ICMR-VCRC would accelerate the development of the Product(s).

v. The process developed by firm(s)/organization(s) during the course of development of the Product encompassing IP, shall be owned jointly by ICMR and firm(s)/organization(s). IP shall mean patents, rights to inventions, copyright and related rights, moral rights, rights in designs, rights in trademarks, rights to preserve the confidentiality of information (including know-how and trade secrets) and any other intellectual property rights, in each case whether registered or unregistered and including all applications (or rights to apply for and be granted), divisional, continuations, continuations-in-part, reissues, renewals or extensions of, and rights to claim priority from, such rights and all similar or equivalent rights or forms of protection which subsist or will subsist now or in the future in any part of the world regarding subject matter disclosed in Licensed patents; and shall include without limitation, the Technology, Licensed Patents and Licensed Trademarks, developed/ created pursuant to this EoI through ICMR support.

vi. ICMR would provide technical support through team of experienced scientist in study planning, product development, development of clinical trial protocol, results/data analysis, outcome assessment, safety & efficacy assessment, product improvement, and other, if deemed fit upon the mutual understanding between ICMR and collaborative company.

vii. ICMR through its institutes would provide support and facilitate to conduct the clinical trial of new vaccine candidate(s) in India through its Affiliates/Institutes, in collaboration with company/institutions in a professional and mutually agreed-upon manner and timelines, which will be decided later under the MoA/MoU.

viii. The Company will undertake the research & development, scale-up of vaccine candidate, manufacturing and commercialization of LF vaccine.

ix. The partnering company shall provide necessary infrastructure and depute experienced/skilled manpower.

x. The company will share the technical data with ICMR and participate in all discussions in a professional and mutually agreed-upon manner.

xi. The company will allow authorized personnel/scientist/team of ICMR to participate in R&D activities and to carry out specific project activities.

xii. The company shall be responsible for obtaining all the regulatory approvals required starting from R&D for product development to its commercialization.

6. Process involved in Partnership/Collaboration/Technology Transfer

Interested companies/manufacturers with demonstrated capabilities in vaccine manufacturing are invited to join hands with ICMR for further development & validation of vaccine candidate. Under this EoI, the manufacturers/companies who are responsive and fulfilling all the technical need will be shortlisted based on their R&D plan, facilities, capabilities and demonstrated experience in

vaccine manufacturing. Qualified potential companies/manufacturer will be then requested for partnership/collaboration/technology transfer through MoA/MoU on mutually agreed terms.

7. Details of documents to be furnished

Proponents are requested to go through all pre-qualification requirements, scope of work for execution & requirements with respect to technical/financial capabilities for acceptance and submission of documents for verification by ICMR. Documents to be furnished are:

i. Authorization Letter (Format – 1),
ii. Declaration - Expression of Interest (Format – 2)
ii. Undertaking with regard to Blacklisting (Format-3),
iii. Undertaking with regard to laboratory facilities (Format – 4),
iv. Undertaking with regard to Non-Litigation (Format – 5),
v. Production Capacity Undertaking (Format-6),
vi. EoI document with each page duly stamped and signed by the Authorized signatory,
vii. Supporting documents, as mentioned in Format-2,
viii. MSME Certificate (if applicable),
ix. Concept note on business plan, and
x. Any other information which proponent may like to provide.

ICMR reserves the right to call for any clarifications confined in the broad scope, wherever such a clarification become necessary for proper judgment in evaluation.

8. Rejection Criteria

The application is liable to be rejected if:

- The proposal is not submitted as per the requirements indicated in the EoI.
- Not in the prescribed format.
- Not properly stamped and signed as per requirements.
- Received after the expiry of due date and time.
- All relevant supporting documents are not furnished with the Pre-Qualification criteria.
- The proposal shall be substantially responsive without any material deviation, failing which the proposal shall be summarily rejected.

9. Evaluation Methodology

- Screening of EoIs shall be carried out as per Pre-Qualification criteria mentioned in the EoI document and based on verification of documents submitted. Only shortlisted proponents shall be contacted for further submission of proposal for partnering/collaboration/technology transfer.

- On shortlisting of technically suitable candidates, one Request for Proposal (RFP) will be shared with the shortlisted candidates. At the RFP stages, technically suitable candidates will be required to provide complete technical details along with their financial proposal w.r.t. upfront payment and royalty component, in line with the applicable revenue sharing policy of ICMR. The selection of candidates will be decided on the basis of their offers at the RFP stage.

10. Pre-Qualification Criteria (PQC

The following will be the minimum Pre-Qualification Criteria (PQC). Responses not meeting the minimum PQC will be summarily rejected and will not be evaluated further:

Sl. No.	**Pre-Qualification Criteria**	**Supporting copy of documents required** (All documents must be self-attested by the authorized person of the proponent)
1	The proponent shall be a legal entity, registered as Institution/Company/ LLP/Society/partnership firm/ proprietorship firm under respective acts in India.	Registration of firm/organization/ Company Incorporation Certificate from ROC/Partnership deed etc. whichever is applicable
2	The proponent must be registered in India with taxation and other administrative authorities.	GST Registration or GST exemption certificate/ PAN Card
3	The proponent should have prior experience in R&D and manufacturing of vaccine/ drug/pharma product for parasitic diseases, especially helminths, and must have marketed such products in three (3) immediate preceding years.	Research paper/Pamphlet/brochure of the product/DCGI License for existing product
4	The proponent has to be profitable and should not have incurred overall loss in past three (3) years. (applicable on commercial firms/organizations only)	Certificate from the Chartered Accountant of the Organization/Audited Balance sheets for last three financial years or Income Tax return.
5	The proponent should have good track record and not black-listed by any Central / State Government / Public Sector Undertaking, Govt. of India, at least in three (3) immediate preceding Years. (applicable on commercial firms/organizations only)	Undertaking on the Letter Head of the Proponent duly signed & Stamped by Authorized Signatory (As per format – 3).
6	The proponent should have a registered office, manufacturing unit in India	Registration copies of both
7	The proponent should have functional laboratory to carryout R&D for the product development	Undertaking on Proponent's Letter Head, duly signed and stamped by the Authorized Signatory (As per format – 4)
8	The proponent should not be involved in any major litigation that may have an impact of affecting or compromising the conditions required under this EoI and in the Agreement.	Undertaking on Proponent's Letter Head, duly signed and stamped by the Authorized Signatory (As per format – 5)

9	GMP and ISO Certification (applicable on commercial firms/organizations only)	Registration copies of both
10	Capacity to produce at least one lakh doses per week	Undertaking (As per format – 6)
12	Scientific Plan	A brief concept note on planning & execution, product development, clinical trials, regulatory affairs, production, marketing etc. (not more than 5 pages)

11. Disclaimer

- ICMR shall not be responsible for any late receipt of applications for any reasons whatsoever.
- ICMR reserves the right to cancel the call for EoI without assigning any reasons thereof.
- ICMR may relax or waive any of the conditions stipulated in this document as deemed necessary in the best interest of the ICMR without assigning any reasons thereof.
- To include any other item in the Scope of work at any time after consultation with proponents or otherwise.

12. Contacts

In case of any clarification required, please contact:

For scientific issues-

Dr. Ashwani Kumar, Director, ICMR-Vector Control Research Centre, Medical Complex, Puducherry-605006; ashwanikumar07@gmail.com, director.vcrc@icmr.gov.in

For Administrative issues

Dr. R. Lakshminarayanan, DDG (Admin), ICMR HQ, New Delhi
Email: - lakshminarayanan.r@icmr.gov.in

Format-1

Authorization Letter

(To be submitted on Agency's Letter Head)

To,

The Director General,
Indian Council of Medical Research, Ansari Nagar, New Delhi.

Subject: Letter for Authorized Signatory
Ref: EOI No. ICMR/EoI/ **VCRC-LFVAg**/2023 dated

Sir,
This has reference to your above-mentioned Expression of Interest (EoI) for Collaboration for R&D and manufacturing, commercialization of vaccine against Lymphatic Filariasis.

Mr./Ms./Mrs./Dr……..is hereby authorized to submit the EoI documents and participate in the processing on behalf of M/s……. (Agency Name)……., who's signature is below.

(Specimen Signature of Representative)

Date: Place:

Yours faithfully,

(Signature of the Authorized signatory)
Name:……..
Designation:……..
Seal:……..

Format-2

Expression of Interest

(To be submitted on Agency's Letter Head)

To,

The Director General,
Indian Council of Medical Research,
Ansari Nagar, New Delhi.

Subject: Submission of Expression of Interest (EoI) for joint collaboration for R&D and manufacturing, commercialization of vaccine against Lymphatic Filariasis.
Ref: ICMR/EoI/**VCRC-LFVAg**/2023 dated

Sir,

The undersigned having read and examined in detail all the EoI documents pertaining to your transfer of technology, and do hereby express the interest to undertake the research & development/ commercialization /manufacture/ sell of the product as mentioned in the EoI document. The details of the Company and contact person are given below:

Name of the Proponent	
Address:	
Name, designation & address of the person (to whom all communications shall be made)	
Telephone No. (with STD code)	
Mobile No. of the contact person	
Email ID of the contact person	

The following documents are enclosed:

Sl. No.	Documents required	Type of document attached	Page No.
1	Company Incorporation Certificate from ROC/Partnership deed etc.		
2	GST Registration or GST exemption certificate/ PAN Card.		
3	DCGI/CDSCO license for the existing products available in the market		
4	Certificate from the Chartered Accountant of the Organization/ Audited Balance sheets for las three financial years, Income Tax return.		
5	Proof of a registered office and a manufacturing Unit in India.		
6	GMP and ISO Certification. Registration copies of both		

7	Authorization Letter	As per format – 1	
8	Undertaking on the Letter Head of the Proponent duly signed & Stamped by Authorized Signatory	As per format – 3	
9	Undertaking on Proponent's Letter Head, duly signed and stamped by the Authorized Signatory	As per format – 4	
10	Undertaking on Proponent's Letter Head, duly signed and stamped by the Authorized Signatory	As per format – 5	
11	Undertaking for declaring capacity to produce at least one lakh doses per week	As per format – 6	
12	Royalty Offer	As per format – 7	
13	MSME Certificate (if have any)		
14	Business Plan	A brief concept note on planning & execution, product development, clinical trials, regulatory affairs, production, marketing etc. (not more than 5 pages)	

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

Thanking you,

Yours faithfully,

(Signature of the Authorized signatory)
Name:……..
Designation:……..
Seal:……..

Place:

Format-3

Undertaking with regard to blacklisting

(To be submitted on Agency's Letter Head)

To,

The Director General,
Indian Council of Medical Research, Ansari Nagar, New Delhi.

Subject: Undertaking regarding Blacklisting / Non-Debarment.
Ref: ICMR/EoI/**VCRC-LFVAg**/2023 dated

Sir,

It is hereby confirmed and declared that M/s……has not been blacklisted / debarred by any Government Department / Public Sector Undertaking / or any other agency for which works/assignments/services have been executed / undertaken.

Yours faithfully,

(Signature of the Authorized signatory)
Name:
Designation:
Seal:

Place:

Format-4

Undertaking with regard to laboratory facility

(To be submitted on Agency's Letter Head)

To,

The Director General,
Indian Council of Medical Research, Ansari Nagar, New Delhi.

Subject: Undertaking regarding laboratory infrastructure.
Ref: ICMR/EoI/**VCRC-LFVAg**/2023 dated

Sir,

It is hereby confirmed and declared that M/s…..... do have adequate laboratory infrastructure (equipped laboratory facility) and experienced staff/skilled manpower to undertake research on vaccine development.

Yours faithfully,

(Signature of the Authorized signatory)
Name:……..
Designation:……..
Seal:……..

Place:

Format-5

Undertaking with regard to Non-Litigation
(To be submitted on Agency's Letter Head)

To,

The Director General,
Indian Council of Medical Research, Ansari Nagar, New Delhi.

Subject: Undertaking regarding Litigation.
Ref: ICMR/EoI/**VCRC-LFVAg**/2023 dated

Sir,

It is hereby confirmed and declared that M/s…..... and owner of the firm / board of directors, do not have any litigation / arbitration pending/under trial in court.

Yours faithfully,

(Signature of the Authorized signatory)
Name:
Designation:
Seal:

Place:

Format-6

Undertaking with regard to production capacity

(To be submitted on Agency's Letter Head)

To,

The Director General,
Indian Council of Medical Research, Ansari Nagar, New Delhi.

Subject: Undertaking with regard to production capacity.
Ref: ICMR/EoI/**VCRC-LFVAg**/2023 dated

Sir,

It is hereby confirmed and declared that M/s…… does have the capacity in all mean (including infrastructure, fund, material, staff etc.) for manufacturing of vaccine doses min. 01 (one) lakh unit per week.

Yours faithfully,

(Signature of the Authorized signatory)
Name:
Designation:
Seal:

Place:

SCHEDULE – (A)

Joint collaboration for development of vaccine against Lymphatic Filariasis

i. About the Technology/Product/Process:

Lymphatic Filariasis (LF) caused by filarial parasites, *Wuchereria bancrofti*, *Brugia malayi* and *Brugia timori*, is a major public health problem leading to societal stigma besides causing huge burden of disability and economic loss in India and other tropical and sub-tropical countries. As a neglected tropical disease, it is therefore, identified as one of the six diseases that are targeted for elimination. According to the World Health Organization (WHO) report 2019, 859 million people in 50 countries are at the risk of LF and there is a need for a preventive therapy to interrupt the transmission as well as for treatment (WHO 2021). Realizing the permanent disability caused by this disease and considering the availability of necessary diagnostic and control tools, the WHO launched the Global Programme for Elimination of LF (GPELF) in the year 2000. The aim of the programme is to stop the transmission of infection using the strategy of Mass Drug Administration (MDA) annually of a combination of diethylcarbamazine (DEC) and albendazole for 5 years (WHO 2020). However, DEC is effective against the microfilaria stage but ineffective in killing adult worms, whereas albendazole can kill adult worms only when treated for 21 days with 400 mg which causes adverse effects. Hence, these drugs are partially effective in cutting down the filarial transmission, thus straining the efforts of the global LF elimination program. Therefore, there is a felt need to find alternative tools such as drugs/vaccines.

There is no vaccine available for LF, and the development of an effective vaccine may be a highly beneficial tool for LF elimination efforts. Animal models for vaccine research are available for *B. malayi*. Previous research on a vaccine against LF using live or dead larval stages (Microfilariae; Mf) of *B. malayi* >50% protection against subsequent infection in ferrets. Interestingly, subcutaneous injections of irradiated larvae *B. malayi* in jirds showed 53-91% protection against subsequent L3 infection and complete protection against microfilaremia. The soluble portions of crude vaccine preparation even without adjuvant were shown to be effective in the jird model and provided significant protection against microfilaremia and future infection. Recently, multiple antigens, either recombinant or purified fractions from different stages of parasites have been explored as vaccines but none of these has reached the even clinical trial stage.

At VCRC twelve antigens, upregulated in different stages of *W. bancrofti* have been cloned, expressed and purified as recombinant proteins. These antigens have exhibited good antibody reactivity, in preliminary assays.

ii. Need and utility of invention:

As stated above, the available anti-filarial drugs are not fully effective in cutting down the transmission thus putting a tremendous strain in the Global Programme for Elimination of Lymphatic Filariasis (GPELF). Further, the efforts for the development of vaccines for LF are scanty and not successful. Hence, effective tools are urgently required for prevention/control/elimination of filariasis globally. Availability of an effective vaccine will immensely contribute to the global efforts to eliminate LF. At VCRC, 12 antigens upregulated in different stages of *W. bancrofti*, have been cloned and expressed, and found to have good antibody reactivity, in preliminary assays. Therefore, these antigens have the potential for development as candidate vaccine molecule(s) for LF.

iii. Scope for collaboration:

This collaboration will open up scope for development of an effective LF vaccine.

iv. Role of ICMR

a. ICMR would provide technical support through team of experienced scientist in study planning, product development, development of clinical trial protocol, results/data analysis, outcome assessment, safety & efficacy assessment, product improvement, and other, if deemed fit upon the mutual understanding between ICMR and collaborative company.

b. ICMR-VCRC shall provide the antigens of lymphatic filarial parasite, *W. bancrofti*, for development of vaccines.

c. ICMR through its institutes would provide support and facilitate to conduct the clinical trial of new vaccine candidate in India through its Affiliates/Institutes, in collaboration with company/institutions in a professional and mutually agreed-upon manner and timelines, which will be decided later under the Agreement.

v. Role of company

a. The Company shall undertake the research & development, scale-up of vaccine candidate(s), manufacturing and commercialization of LF vaccine(s).

b. The partnering company should provide necessary infrastructure and depute experienced/skilled manpower.

c. The company will share the technical data with ICMR and participate in all discussions in a professional and mutually agreed-upon manner.

d. The company will allow authorized personnel/scientist/team of ICMR to participate in R&D activities and to carry out specific project activities as envisaged under this EoI and subsequent Agreement.

e. The company shall be responsible for obtaining all the regulatory approvals required starting from R&D for product development to its commercialization.

vi. Methodology/process:

ICMR-VCRC, Puducherry has cloned several well-characterized antigens of lymphatic filarial parasite, *W. bancrofti*, expressed and purified the recombinant antigens. Preliminary evaluation of the diagnostic potential of these recombinant antigens showed them to be promising. Confirmation of the antigens was performed by Western blotting and sequencing. These antigens were further purified and evaluated for the antibody reactivity potential in preliminary tests.

vii. Envisaged outcome:

Development of a safe and efficacious LF vaccine(s) for eliciting strong, durable, and broad immune responses for robust clinical protection against LF parasite infection.

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