

# **Science and Engineering Research Board**

## **Intensification of Research in High Priority Areas (IRHPA)**

### **SERB - Centres for Antibody Engineering**

Creation of state-of the art research infrastructure is critical to SERB's efforts in supporting fundamental research, through its high priority programs. The Intensification of Research in High Priority Areas (IRHPA) program of SERB supports research where multidisciplinary approaches are involved. The emphasis of such high priority programs is on building a robust interdisciplinary connect for addressing critical national challenges.

Antibodies have emerged as a major alternative to conventional therapeutics agents and antibody-based products account for majority of the FDA approved drugs and therapeutic molecules. Considering the limitations associated with conventional translation methods, synthetic antibody generation utilizing phage display-based approaches have assumed more significance in meeting the current challenges in discovery, diagnostics, and therapeutics.

Considering this scenario, SERB seeks to advance research in antibody technology by establishing integrated antibody engineering platform(s) in India through R&D centres. The vision of these centres is to drive innovative and interdisciplinary collaborative research in recombinant antibody engineering and build critical infrastructures for technology driven solutions.

#### **Call for proposals:**

SERB solicits proposals for establishing centres in recombinant antibody engineering research, the broad contours of which are as under:

#### **(1) R & D for antibody generation and modification:**

- (a) Multidisciplinary approaches in antibody production including biosimilars, purification, functionalization strategies and scale-up; development of novel antibody libraries.
- (b) Antibody conversions, Humanization, fragment engineering, post-translational modifications.
- (c) Novel technologies, such as new display and hyper-mutation technologies, Human B cell clone selection and expansion.; novel vector systems and library platforms.

#### **(2) ADC Therapeutics:**

Antibody-based drug conjugates, ADC-based biosimilars; pre-clinical trials and validation of models for therapeutic applications involving antibodies; pharmacokinetic study and safety assessment modules; study and development of novel effector functions.

#### **(3) Antibody-based diagnostics:**

Development of high-quality detection of pathogens and immunodiagnostic test kits.

The Centres should elaborate the following in the proposal:

- (i) Production of antibodies in sufficient quantities so that Indian lab level requirement for antibodies may be met through these Centres.
- (ii) Engage start-ups, demonstrate road-maps for scaling-up and encourage industry connect.
- (iii) Facilitate knowledge-help and boost infrastructure required to build a start-up ecosystem around the Centre.
- (iv) Implement plans to initiate research and production of antibodies simultaneously.

### **Nature & Duration of Support:**

The tenure of the funded centres will be for five years. The financial support covers recurring and non-recurring heads.

### **Eligibility:**

- Eligibility criteria as applicable to CRG projects are to be followed.
- Additionally, the Principal Investigator (PI) must be in regular service in the host institution and must have at least five years of service left at the time of submission of the proposal.
- PI should not have any on-going IRHPA project from SERB.
- Multi-institutional and collaborative proposals with Start-up/ industry are encouraged.

### **Additional Note:**

1. Proposals should typically focus on specific milestones with a step-wise progression.
2. The proposal must specify the specific antibodies pathway/disease justification to be targeted.
3. Proposals that focus on antibody production and scale-up should specify the quantity of antibody proposed to be generated annually.
4. Institutions that adequately demonstrate the sustainability of the Centre beyond five years, and that which provides commitments to retain trained human resource beyond the support period of SERB, will be ranked higher in the order of precedence.

### **How to Apply:**

Proposals should be submitted in the prescribed IRHPA format through SERB online portal: [www.serbonline.in](http://www.serbonline.in).

In addition to elaborate proposal in required format, the following should be enclosed, duly forwarded by the host institution:

- (i) How is the proposal aligned with the present scenario of recombinant antibody-based research in the country and its future road map? (*One page write-up*)
- (ii) Clear timeline of goals and challenges to be addressed.
- (iii) Plans for sharing the available resources in the Centre and plans to reduce operational costs. (*One page write-up*)

- (iv) Action plan describing sustainability of the proposed Centre beyond the tenure of the project including any avenues for commercialization and Start-up/ industry (*One page write-up*).
- (v) Vision for generating intellectual property in this area (One page write-up).

Last date for submitting the proposals along with other requisite documents is now extended to **18<sup>th</sup> October 2021 at 5.00 P.M.** One can write to [prasanna@serb.gov.in](mailto:prasanna@serb.gov.in) and [harishkumar@nic.in](mailto:harishkumar@nic.in) for any additional information or clarifications.