

CALL FOR PROPOSALS

SERB-IRHPA National Biosafety Level 3 (BSL 3 / ABSL 3) Facilities

SCIENCE AND ENGINEERING RESEARCH BOARD Department of Science and Technology

Vision: Establishing SERB National Biosafety Level (BSL 3 / ABSL 3) infrastructure facilities for handling infectious pathogens, build capacity to provide support for programmes of national priority and provide surge capacity to respond expeditiously to epidemics / pandemics.

Mission: To create state of the art BSL 3 / ABSL 3 facilities to promote R&D activities in the frontiers of drug discovery, diagnosis, novel vaccine investigation, and to investigate and handle the new, emerging, infectious and opportunistic pathogens that cause contagious diseases to human, plants, livestock, wildlife etc. These facilities will also be made available to start-ups and MSMEs to contribute to the development and validation of their efforts in antimicrobial drugs, vaccines, and diagnostics product pipeline. These standalone national facilities will be developed without any overlap with the already existing facilities created through other programs.

- **BSL3 / A-BSL3 Facility:** Should act as a regional functional facility for biocontainment and to safely receive, store, and work with known BSL-3 agents of bacterial and viral origin, unidentified/uncategorized infectious agents and genetically modified organisms.
- The above facilities are mandated to function independently and cooperate with regional institutions / hospitals / industries (Pharma and healthcare start-ups and MSMEs) for developing knowledge, techniques and tools for detection, diagnosis, prevention, treatment of diseases caused by the known, newly identified or unidentified infectious, opportunistic organisms and genetically modified organisms capable of causing contagious diseases in interconnected world of people, animals and environment.
- Proposals for A-BSL3 facility should be equipped to perform cutting edge animal experiments with multiple BSL3 class pathogens. The engineering requirements and design should be proposed differentially than the normal BSL-3 facilities.
- These facilities will conduct Research programs, train scientists / technicians and research students in R&D activities involving infectious pathogens, and provide surge

capacity in response to epidemic / pandemic activity. Safe handling and disposal practices are to be rigorously implemented.

Eligibility Conditions

- Public funded national research institutes/labs, Universities, Institutes of National importance or established by the Act of Parliament can submit the application. It will be coordinated by a single institution and the PI must have at least 10 years of active service remaining at the time of submission of application.
- The applicant must establish a regional cluster of not less than 5 institutions with the public and private sector that promises advanced research cooperation. The cluster should include at least one government hospital or a hospital with DSIR/SIRO recognition. The investigator from hospitals should mandatorily have clinical expertise in the field of medical microbiology and infectious diseases / virology / epidemiology / medical pathology.
- The applicant must have demonstrated capacity and capability to meet regional (multi-state, multi-institutional) research needs by the way of handling independent and collaborative projects at the national or international level involving pathogens.
- PI should have at least 5 years of working experience in BSL 2 facility and worked on infectious pathogens, as evident from high quality publications/patents. PIs having trained in BSL3/ABSL3/BSL4 facilities and well versed in biosafety protocols / guidelines / SOPS will be a desirable additional qualification.
- Institute and applicant must be in compliance with Indian laws and regulations of Ministry of Health and Family Welfare (MoHFW), Department of Biotechnology and Ministry of Science and Technology etc. concerning BSL facilities.

Required Capabilities

- Applicants are expected to meet fast track schedules in planning, design, construction, and final commissioning of the facility. Development of the facility involved construction, testing, commissioning and validation of facilities. As per the schedule PIs should be in position to establish the facilities in the first two years and commence the research and training activities from no later than the third year.
- State of the art status and technical merit of the laboratory designs, the feasibility of the plans, scientific and technical expertise, project plans, and linkages to other

institutions / industry (in additional to the collaborating institutions and scientists) that will use the BSL labs should be clearly specified in the proposal.

- Information on existing infrastructure and research facilities such as tissue culture, antigen production, *in vitro* / *in vivo* studies, cell and molecular biology facility, high end microscopy, FACS, scientific workstations etc. to support research using the proposed facility should be indicated.
- Plans for A-BSL3, BSL3 must include space for conducting research on disease pathogenesis and host response in humans, plants, livestock and wildlife and genetically modified organisms. PI and group can plan for full integrated facility or specialized facilities for any one or two areas indicated above.
- Dedicated spaces should be there for procedure room, pathology laboratory, along with dedicated small animal housing facility that meets international standard and GOI prescribed guidelines for setting up such facilities.
- Clinical facilities in compliance with containment protocols and procedures, isolation units for research on and treatment of patients, and human trials of vaccines / therapeutics is required (applicable only to the institutions attached with Hospitals)
- Appropriate supporting features such as change rooms, an autoclave room, a media preparation room, and a plant room. The facility should have specific safety and engineering features for maintaining requisite negative pressure environment to ensure unidirectional airflow, and for ensuring safety of lab personnel. These should be routinely monitored by certified personnel both at BSL as well as by institutional authorities.

Biosafety and other requirements

The applicants will be required to submit the following items along with their proposals:

- Existence of an institutional biosafety committee, registration with RCGM, designated biosafety officer and/or health safety officer besides having Institutional animal ethics committee and/or human ethics committee.
- BSL3/ABSL3 unit organizational structure with responsibilities
- Topographic data (including seismic data and other pertinent information).
- Pilot drawings showing possible arrangement of space. Conceptual designs and schematic designs, including proposed movement of workers and materials.
- Project Milestones and schedule.

- Facility creation cost estimates
- Future research plans for any national emergency.
- Institutional commitment

As the facilities are proposed to be developed as national facilities, coordinating institution and cluster partners should have a long-term commitment in maintaining the facility, sustaining research grants for utilizing the facility prepared to meet any regional and national emergencies. The host institute should also extend the staff strength in the following aspects to keep the facilities operational in 24x7 mode.

- SERB funds cannot be used for creation of physical infrastructure
- Governance, administration and day-to-day management of the facility including booking systems for end users.
- Institutes proposing for ABSL-3 facility should involve one veterinarian for comprehensive care of animals, following approved ethical consideration and protocols.
- The facility should be established and certified as per Department of Biotechnology, Government of India, “Guidelines for Establishment of Containment Facilities BSL2 and BSL3 and Certification of BSL3 facility 2020”. (<https://ibkp.dbtindia.gov.in>). Ref. No. PID-15011(11)/5/2020-PPB-DBT.
- Scientific and technical staff to run the core laboratories and train students / visiting professionals in utilizing the facility.
- Host institute's responsibilities also include necessary physical infrastructure for the BSL facility, maintenance, adherence to the GOI of norms of biosafety, and providing medical facility and insurance to staff/students engaged in the research work on BSL-3/ABSL pathogens.

Call for proposals opens: 1st November – 15th December 2021

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