CSIR- Indian Institute of Chemical Biology Vision

Preamble

CSIR-Indian Institute of Chemical Biology (IICB), formerly known as the Indian Institute of Experimental Medicine (IIEM), traces its roots back to 1935. Later, the institute was inducted under the aegis of Council of Scientific & Industrial Research (CSIR). The genesis of this institution lies in the noble pursuit of eradicating cholera, a mission that culminated in the development of the oral vaccine for cholera. Today, CSIR-IICB stands not only as a testament to our past successes but as a beacon guiding us toward new horizons.

In the present day, our institute stands at the forefront of scientific inquiry, addressing major diseases. Drawing inspiration from our rich legacy, we have expanded our research purview. This document is more than just a compilation; it is a collective vision that echoes through the corridors of all laboratories within CSIR-IICB. It encapsulates the shared commitment to pioneering research and the transformative impact we aspire to have on complex challenges of healthcare, environment, and agriculture.

In witness whereof, we hereby affirm our commitment to the mission and vision of CSIR-IICB, as we strive to create a healthier, sustainable, and gift cutting-edge technology to humanity through the power of scientific discovery.

Vibha Daul

Prof. Vibha Tandon Director, CSIR-Indian Institute of Chemical Biology, Kolkata.

Vision

CSIR-Indian Institute of Chemical Biology stands at the forefront of biomedical sciences, uniquely integrating basic biological research with synthetic chemistry, phytochemistry, biophysical, and structural biology techniques. Presently, our innovative approach extends to the realms of Artificial Intelligence and Machine Learning. This multidisciplinary approach propels our mission to develop cutting-edge technologies and advance drug development, dedicated to addressing critical human diseases of national significance. Aligned with the CSIR's vision in healthcare research, IICB is committed to pioneering transformative solutions at the intersection of various scientific disciplines.

Mission

CSIR-IICB is dedicated to pioneering advancements in 5 key thematic areas -

- Innovative approaches in healthcare for communicable and non-communicable diseases,
- Host-pathogen interactions in microbial colonization, infection, and disease,
- Cell-based therapies, biological therapeutics (Biologics) for the management of autoimmune disorders (SLE, RA), Idiopathic Pulmonary Fibrosis, Solid Tumors (Breast, Ovarian, Pancreatic), and AML.
- Development of therapeutic agents and diagnostic probes from both synthetic and natural sources.
- Developing synthetic process technology for healthcare, pharmaceuticals & agrochemicals.

Our mission is to strategically expand and evolve in these thematic areas, charting a transformative course toward our Vision for 2030. Through a well-defined roadmap comprising short-term, mid-term, and long-term goals, we aim to propel our scientific pursuits. In the short term, we focus on ongoing projects, delineating achievable objectives over the next 2-3 years. Transitioning into the mid-term (till 2030), we harness insights from current initiatives to elevate our technologies for broader clinical and industrial impact. The long-term goals extend beyond 2030, propelling us into the next frontier of scientific and technological exploration in the healthcare sector.

Mandate

In the coming year, CSIR-IICB is committed to a multifaceted mandate encompassing various strategic initiatives:

- Research Themes and Technology: Aligning our project proposals with CSIR Mission Mode Projects and external funding organizations, focusing on short-term and mid-term research goals within the specified thematic areas.
- Interdisciplinary Approach: Emphasizing our commitment to interdisciplinary research, evident in our short-, mid-, and long-term goals, fostering innovation and holistic scientific exploration.
- Facilities and Pilot Plants Establishment: Proposing the creation of a national drug screening facility, a pioneering initiative at CSIR, and a pilot plant for reactors to scale up in-house drug production. This contributes to sustainability, supports local industries, and generates revenue, fostering start-ups in the eastern region.
- *Training and Mentorship Programs:* Offering Ph.D. programs, training undergraduates, and participating in CSIR's Skill Development mission to provide short-term training, empowering individuals with biomedical and chemical research expertise.
- *Research Collaboration:* Strengthening collaborations with national and international universities, research institutes, hospitals, and industries to enhance project outcomes through shared expertise.
- Policy Contributions: Engaging in national policy and mission development related to biomedical research, sharing research findings, and contributing expertise to shape policies addressing public health challenges.

- *Regular Assessment and Adaptation:* Continuously evaluating ongoing projects, reassessing research priorities, and adapting strategies to align with emerging trends and advancements in the field.
- *Translation of Research:* Ensuring the translation of newly developed chemical resources and knowledge into practical solutions for specific diseases, exploring partnerships with industry and healthcare sectors to facilitate the application of research outcomes.
- *Communication and Outreach:* Conduct regular assessments of project progress, reassessing research priorities, and adapting strategies based on emerging trends and advancements