



ATAL INCUBATION CENTRE
CENTRE FOR CELLULAR
& MOLECULAR BIOLOGY

Supported by Atal Innovation Mission, NITI Aayog

INNOVATION HUB USERS & EMPLOYEE HANDBOOK



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PREAMBLE

This laboratory safety manual is compiled to be used as a binding document for all personnel working in laboratories to ensure safe work conduct and practices on CSIR-CCMB's Common Research facility campus. This handbook is intended to set up a framework of how startups and their staff at AIC-CCMB / CRTDH should work and use the facilities in a mindful and safe way.

In this regard all users of these facilities are required to familiarize themselves with safe practices for applied laboratory operations. This manual will be amended as various situations might arise and come to our attention.

INTRODUCTION

CSIR-CCMB is one of the premier scientific institutions in India, with precedence in conducting cutting edge research in modern areas of cellular and molecular biology. In the coming decades, biology will become the key driver in human healthcare, animal health and industrial application. CCMB is ready to take a leadership role in this new wave, collaborating with industries and academia to achieve this goal. In India, scientific leads discovered in laboratories often fail to translate to market and end consumers due to long product life cycle. We understand these challenges and also know that much can be done to mitigate these risks by providing business support services and handholding ecosystem for inventors with early stage technology leads and start-ups in the areas of Health, Pharmaceuticals and Biotechnology.

Common Research and Technology Development Hub

Translating ideas and research into marketable product /process is only possible in an ecosystem where innovations are encouraged. One of the main challenges faced by Startups/MSEs is finding the sophisticated testing facilities, equipment/ infrastructure, intellectual support to test and validate their idea. The Common Research and Technology Development Hub (CRTDH) at CSIR -CCMB was established by the Department of Scientific and Industrial Research (DSIR) with an objective to foster industry-institution interaction and address the problems faced by Biotechnology and Biopharma MSEs by providing infrastructure and support. The CRTDHs are National Facilities operated on a non-commercial cost-plus basis for the benefit of MSEs as well as startups/innovators. CRTDH at CCMB is one of the few hubs that provide technical support, infrastructure and sophisticated analytical services as well advanced research equipment facility to the MSEs for carrying out competitive technological research. Here, MSEs also get to utilize the already developed technologies available in the CSIR laboratories for taking their ideas to market.

Situated in the Medical Biotechnology Complex, CCMB Annex II in the Ramanthapur Industrial Area, Uppal, Hyderabad, this hub has a strong local ecosystem of research institutes, research hospitals, transportation access and industrial parks in the vicinity that adds an intrinsic value and advantage to multiple researchers and innovators. The facility is spread over 10,000 Sq. ft. housing several high-end equipment through the open lab concept as well as dedicated shared working spaces for MSE/Startups.

- 10,000 sq. ft space, customizable plug and play wet lab space with modular movable tables with granite top and wheels, desk tables/ carols with lock and key
- Best-in-class shared equipment managed by a dedicated instrumentations team to keep minimum downtime.
- High-speed internet, basic utilities, parking space, subsidized canteen facility for staff, 24x7 security etc.
- Co-working spaces, workstations, meeting pods, privacy telephone booth, 30 seater conference room with video conferencing facilities

Atal Incubation Centre-Centre for Cellular and Molecular Biology

Atal Incubation Centre-Centre for Cellular and Molecular Biology (AIC-CCMB) & CRTDH is dedicated in contributing towards “Make In India” through its efforts in promoting home-grown life-sciences enterprises. Established in 2017 at CSIR-CCMB, Hyderabad under the Atal Innovation Mission of NITI Aayog, GoI, AIC-CCMB has been voted No 5 in the list of Top Ten Life-sciences incubators ranked by BioSpectrum India, a B2B media platform in Life Sciences. It is no surprise as this incubation centre has become a hub for life-sciences and biotechnology startups and MSMEs.

CCMB has the proud privilege to establish one the first Atal Incubation Centre to overcome the challenges associated with inventors and start-ups in this sector. Spread over of 20,000 Sq. ft space, this centre has one of the largest facilities for shared wet research facilities, industry standard equipment and operating facilities.

We provide:

- ✓ Access to high end research equipment
- ✓ Regular business, IP and regulatory workshops
- ✓ Monthly networking events engaging startups, incubators, investors and policy markers
- ✓ Expert assistance in fund-raising from centre, state and private investors
- ✓ Empowering partnerships with government agencies, industries and research organizations for promoting entrepreneurship

GENERAL CONDUCT ON THE USE OF LABORATORY EQUIPMENT AND FACILITIES

1. Only authorized persons can work in the laboratory. Unauthorized personnel and pets are not allowed in the laboratory premises. Collaborators of the existing incubatees are strictly forbidden to use any equipment in the incubator, unless a prior permission is taken from the management, Decision solely rests with the management.
2. Children under the age of 10 years are not allowed inside the R&D laboratories.
3. Proper laboratory decorum and etiquette is expected of everyone. Formal dress code, Excessive noise and unruly behaviour are not allowed in the laboratory premises.
4. Utmost care should be taken to ensure proper use of all laboratory equipment. Incubatees are strictly prohibited from moving the equipment, chairs, tables etc., for their own convenience. Movement of equipment such as gel electrophoresis and the accessories from third to fourth floor or vice versa is strictly not allowed.
5. Repair of equipment rendered out of order due to carelessness and improper use shall be the responsibility of the users and they are liable to pay the required repair charges
6. All laboratory equipment should be used only for their intended purpose, unless appropriately modified, upon approval of the laboratory supervisor.
7. Eating in the laboratory is strictly prohibited. Food and drinks should not be stored in the refrigerators/freezer/drawers on the lab floor. Please use canteen facilities in the ground floor.
8. Persons working between 8 pm and 8 am need to sign the security log at main gate to use the facility. It is advised that they do not work alone during this time. Also, all the staff working on Saturdays and Sundays need to sign at the Security.

GENERAL SAFETY AND SECURITY

1. It is mandatory for all innovation fellows, startups and their employees to attend safety trainings organised by CCMB-CRTDH/ AIC – CCMB at the iHUB premises.
2. Be fully aware of the building's safety and evacuation procedures.
3. Make sure you know where your lab's safety equipment—including first aid kit(s), fire extinguishers, eye wash stations, and safety showers is located and how to properly use it.
4. Keep emergency phone numbers accessible at all the time, as specified in the end of this document.
5. All chemicals, samples and other biohazard materials or lasers should have appropriate warning signs.
6. No open flames in the laboratory unless explicit permission for the same is taken.
7. In case of any untoward incident or drill, be sure to turn off all electrical equipment and close all containers.
8. Ensure laboratory glassware does not have any chips and cracks before using. Dispose any damaged glassware properly.
9. Never leave an ongoing experiment unattended.

UNDERTAKING FOR MATERIALS

1. All personal supplies/equipment brought into the premises should be listed and checked-in with the Security Guard and the AIC-CCMB laboratory personnel. Only registered supplies/equipment will be allowed to leave the premises with their rightful owners.
2. Be sure to log-in before and log-out after using the equipment. If anyone is found using the equipment without log-book entry, he/she will be barred from using it for a period of 2 weeks.
3. No consumables or laboratory supplies will be provided by CCMB-CRTDH/AIC-CCMB.

PERSONAL PROTECTION SAFETY RULES

1. Wear proper lab clothes (**avoid skirts, shorts and open shoes**) and safety gear (lab coats, safety goggles, gloves, face masks etc) while working. Loose clothing or dangling jewellery should be secured. Always tie back hair that is chin-length or longer.
2. Never smell or taste chemicals, or pipette by mouth and follow the proper procedures for disposing lab waste.
3. Report all injuries, accidents, and broken equipment or glass right away and get help in case of injuries/accidents.
4. In the event of a chemical splashing into your eye(s) or on your skin, immediately flush the affected area(s) with running water for at least 20 minutes. Always wash your hands before leaving the lab or eating.
5. Keep your hands away from your body, mouth, eyes, and face when using lab equipment and chemicals.
6. Make sure that all eyewash stations, emergency showers, fire extinguishers, and exits are always unobstructed and accessible.
7. Only lightweight items should be stored on top of cabinets; heavier items should always be kept at the bottom.

EQUIPMENT HANDLING

1. Do not use any equipment without training and authorisation by the Instrumentation team/Management team of AIC-CRTDH-CCMB.
2. Entry in the logbook provided with the equipment is necessary. Login time and out time must be entered. If any equipment is found to be running without a logbook entry, it will be switched off without any notice to any one and any loss due to this is the responsibility of the Incubating Company.
3. Any person found to be misusing the equipment will be given one warning and after that he/she will be barred from using any equipment in the facility for 2 weeks.
4. High voltage equipment should be handled with utmost precaution and always turn off the high voltage power supply after use.

5. Avoid using extension cords and make sure that all the electrical panels are unobstructed and easily accessible.
6. Always wear gloves and spray your gloves with ethanol before opening incubators. Never wear gloves outside of the lab.
7. Please clean the equipment and their accessories after use and close it appropriately. Turn off all the equipment when not in use.
8. When new chemicals are ordered, please inform the lab manager so that the chemical inventories can be updated (and please provide copies of the MSDS for each new chemical).
9. Always close and latch completely freezer doors (both -80°C and -20°C) when not in use.
10. Make sure samples are capped tightly and counterbalanced appropriately when centrifuging. Also, be sure to screw the top on the microcentrifuge during use.
11. If you break something, please report it to incubation management team by call and email.
12. Please notify the lab manager of any problems ASAP.

BIOSAFETY

General Biological Safety:

Biological agents in the context include microorganisms, toxins, viruses and their particles/components like allergens. Basic working principles include:

- Washing hands thoroughly before and after working.
- Appropriate lab clothing, lab coats, gloves as well as safety goggles where required, while working with biological agents.
- Using only closed tubes for centrifuging the samples and secondary leak-proof container while transporting cultures, samples and petri-dishes.
- Disposal of syringes with the lid in separate sealed plastic bags.

Maintenance of work area and disposal of fluids:

- The work benches should be disinfected with 70% ethanol before and after the experiments.
- Contaminated samples and cultures should be treated with sodium hypochlorite solutions before disposal and **should not be flushed down the drain**.
- Cultures with other hazardous chemicals or heavy metals should be disposed according to the method provided in Material Safety Data Sheet (MSDS).
- The spills should be cleaned using 70% ethanol or 10% chloroxenol and the materials used to clean the spill should be placed in biohazard bag and decontaminated using an autoclave.
- During the spill of a culture containing organisms, shut down the air-conditioning, inform the concerned authorities and cover the spill with absorbent materials. After soaking excess liquid, decontaminate the area with ethanol and bleach solutions.

General Guidelines for Chemical Safety:

Potentially harmful chemicals are being used in the laboratories every day. Therefore, it is of utmost importance to be informed about the safe handling and disposal of such chemicals. The Material Safety Data Sheet (MSDS) describes the properties, reactivities, potential chemical hazards and contains instructions for the safe handling of the chemicals. The hardcopy of MSDS is required in each lab.

1. Treat every chemical as though it were dangerous.
2. Use of carts provided on each floor for transporting chemicals such as solvents and concentrated acids.
3. Large quantities of these chemicals should be stored in a separate area for corrosive substances.
4. Label all chemicals are properly, clearly stating the name of the substance, its concentration, the date it was received, and company name.
5. Use bulbs for pipetting any chemical.
6. All chemicals, solvents and samples entering the lab must be duly indented by security.
7. No third party samples can be tested without written authorisation/permission by CRTDH-CCMB or AIC-CCMB.
8. Do not allow any solvent to come in contact with your skin.
9. Take only the required amount of chemicals and store the unused chemicals in a separate container.
10. Chemicals or other materials should never be taken out of the laboratory.
11. Chemicals should never be mixed in sink drains.
12. Flammable and volatile chemicals should only be used in a fume hood, by taking utmost precautions by using laboratory attire along with safety goggles if needed.
13. If a chemical spill occurs, clean it up right away.
14. Ensure that all chemical waste is disposed of properly.
15. Never tap flasks that are under vacuum.

Guidelines for Ethidium Bromide (EtBr):

EtBr is a commonly used chemical for gel electrophoresis and fluoresces upon exposure to ultraviolet (UV) light when bound to the double-stranded DNA and single-stranded RNA. It is a mutagenic and moderately toxic chemical and the powder is considered to be an irritant to the respiratory tract, eyes and skin.

- EtBr waste **should not be** poured down the drain or thrown in trash.
- The agarose gels should be disposed in a sealed plastic bag and the liquid EtBr, if spilled, should be collected in a sealed reagent bottle.
- Bleach should not be used for cleaning the spill.

Guidelines for Bis-Acrylamide and Polyacrylamide Gel Disposal:

Bis-acrylamide, used for SDS-PAGE, is considered to be a neurotoxic agent and therefore should be handled with care.

- Use of gloves, lab coats and eye protection is mandatory when handling Bis-acrylamide.

- The solution should be polymerized using TEMED and APS before disposal.
- Polyacrylamide gels should be placed in a leak-proof bag along with the gloves and other debris contaminated by polyacrylamide.
- It should not be disposed in regular garbage or flushed down the drain.

Guidelines for Imaging Stations:

While using UV light for viewing gels stained with EtBr, extra precautions are to be taken. Gloves and eye protection are mandatory while using the imaging stations. Discard the gloves contaminated with EtBr in separate leak-proof bags. **The gloves used for removing the gels should not be used for operating the systems.**

Guidelines for Phenol/Chloroform:

Phenol/Chloroform is used for extraction of biomolecules such as RNA. It is considered to be a moderately toxic solvent which causes respiratory tract and skin irritation. It should be stored in a properly labelled solvent bottle. Use of gloves, eye protection and lab coat is necessary when using this reagent.

Safe Handling of Liquid Nitrogen:

Liquid Nitrogen should be stored properly in the respective liquid nitrogen containers. It should be made sure that the containers are leak proof and sealed tight. Use of cryo-gloves and eye protection is mandatory. The gloves should be impervious to the fluid and loose enough to be tossed off easily. **Liquid nitrogen should not be used for cooling flammable mixtures.**

Compressed Gas Safety:

- Clear labelling of the gases on cylinders and pipelines is mandatory.
- New cylinder should be checked for leakage using soapy solution and not flame.
- Valves of the cylinders should be easily accessible and should be handled with care. Closing should not be over-tight.

Disposal of Chemicals

- Do not dispose any solids in the sink.
- Dispose all consumables and waste properly.
- Refer to the chemical guidelines section for proper disposal of the chemicals.

COMMON FACILITIES

- All users are expected to use the common facilities with utmost care.
- Make proper log entries while taking Ultra pure water, nitrogen and other gases provided by the lab.
- It is everyone's responsibility to ensure there is no wastage of resources and other's safety is not compromised.

Utility room

1. Washing of glassware etc., should be done only in the utility room.
2. Autoclave is available in the Utility room. This will be operated by the trained persons of CCMB at specific timings as decided by the management on all working days and no incubatee is allowed to operate the autoclave on their own.
3. Hot air oven is provided in the room which can be used by the incubates on all working days during the working hours. Overnight usage of the oven is not allowed unless prior permission is taken from the management team.
4. Ice can be taken from the ice machine. Please make sure that there is no spillage.
5. Smoking is strictly prohibited in the ENTIRE CAMPUS, ESPECIALLY IN THE UTILITY ROOM.
6. PLEASE STAY AWAY FROM THE ELECTRIC PANELS IN THE UTILITY ROOM.
7. Utility room may be used to operate any high-powered/noise generating equipment belonging to a incubatee only on prior consultation with the management. Use of such equipment is strictly not allowed in the lab.
Fume hoods are provided in Utility room for using any pungent chemicals. Do not open such chemicals in the lab.

Committee room

- Resident companies can use the Committee room for maximum of 4 hours per month beyond with out charge. Management will charge for any use beyond this limit.
- Committee Room must be booked in advance.
- Inform the staff once you have finished using the room.

Canteen

- Resident companies and their staff will be issued canteen cards.
- Contact the Facility co-ordinator for the same
- Canteen is self-service, everyone is expected to clear the table after themselves and put back the chairs

CCMB COVID-19 GUIDELINES

1. All incubating companies are responsible for the strict implementation of COVID discipline within their Work group on the CCMB Campus.
2. Wear masks at all the time and maintain safe physical distance.
3. Sanitise your hands, both before AND after touching any switches, knobs or other surfaces which are in public use.
4. Any staff/student who has any travel history outside Hyderabad in past 14 days or has been in contact with COVID-19 patients must complete quarantine as per state guidelines.
5. Please follow the “COVID discipline” and state guidelines for staff working in the labs. Companies are encouraged allow their staff to follow staggered workings and work from home options to avoid crowding in the labs.
6. Tissue Culture facility access will be available for maximum one person per incubatee at any given time.
7. Do not roaming or loiter around unnecessarily, either alone or in a group, in the campus.

Any identified violators of “COVID discipline” will be sent for 14-day quarantine and the incubating company may be shut down during that period. Security has instructions to check the identity of the people on campus and to report any violations of “COVID discipline”

Remember: Your practice of these measures will help keep everyone safe, at Work and at Home.

If you have any symptoms of COVID-19 (Fever, etc.), please inform AIC-CCMB management immediately. Please do not come to the lab and go to self-quarantine until further notice.

EMERGENCY CONTACT NUMBERS

INCASE OF ANY EMERGENCY CONTACT SECURITY

CONTACT 040- 27192633 FIRST

MBT/CRF Security	040-27195599 EXT. -5599
CCMB Security Officer	040-27192633/ 9441203390
Dr. Srinivas Voley – Principal Technical Officer	9849745817
Mr. Seshu Prasad – Instrumentation	9959060553
Dr. Ramjee Pallela - COO	8826920923
Ms. Ritika Marampalli - Program & Communications	9030131086
Mr. Ashish Kumar Perukari - Business Associate	9849266900
Mr. Harish BG - Program Co-ordinator	8147975276
Fire Department	101
Ambulance	102
EMRI	108
Apollo Emergency	1066
Kamineni Hospital	24022222
Yashoda Hospitals	105910
Police	100