

User Guidelines, Safety Guidelines and Usage charges for SINE BIRAC BioNEST BioLab

The below mentioned user guidelines must be strictly followed in compliance with Covid-19 Standard Operating Procedures (SOP) to ensure the safety of all Biolab users and SINE staff.

- Entry to BioLab facility is restricted only to authorized personnel and registered users.
- The registered users and authorized personnel from start-ups will be allowed to access the BioLab during the allotted time slots.
- SINE's Lab in-charge will allow the entry of the registered users only after the successful verification of the Identity card.
- Registered users are requested to carry their ID cards while working in the BioLab and needs to present whenever asked for verification.
- Users are requested to be well acquainted with IIT Bombay safety guidelines (<http://www.iitb.ac.in/safety/en>). Users must carefully read and submit the duly signed "Safety Compliance Undertaking" to the Lab In-charge. Users will be allowed to use the BioLab instruments, only after submission of the "Safety Compliance Undertaking".
- While working inside the lab, all the users are requested to remove the footwears outside the lab and needs to use the Lab footwear. All the users must wear the lab aprons inside the Biolab. Do not carry the lab footwear or lab apron outside the lab.
- Users are requested to contact Lab in charge to understand the evacuation procedure before the Lab usage. BioLab users must be aware of all the emergency exits and evacuation protocol.
- Users must follow the instructions provided by the lab in charge from time to time.

Guidelines for Instruments usage

- The appointments for BioLab instrument facility needs to be booked at least two days prior. The time slot will be allotted as per the instrument's availability.
- All the usage charges must be paid in advance for usage of BioLab instrumentation facility.
- The usage charges for all the instruments in BioLab are mentioned on SINE website. Revision of BioLab instrument charges are subjected to SINE labs policies.
- Only one user from a team will be allowed to use the particular instrument facility at a time. Additional charges will be levied, in case more than one person from the team intend to use the facility.
- Users must carefully read the SOP of the instrument and follow all the instructions cautiously while using the instruments.
- All the necessary information about the samples must be provided in the BioLab user form. Users must declare all the essential information about the samples including the nature of the sample, the risks and hazards associated with sample handling in the BioLab.
- Users must provide the information about the type of waste as well as the quantity of waste which will be generated during analysis. The users must appropriately dispose the generated waste as per the safety guidelines.
- Requirement of preparatory work for sample analysis as well as the post treatment work must be mentioned clearly in the user form. Preparatory work must be conducted at the designated workspace allotted by the lab in charge.

User guidelines for instrument handling

- Users must read the Standard Operating Procedure (SOP) as well as safety guidelines (Dos and Don'ts) prior to the instrument's usage.
- Users must acquire all the necessary information regarding the instrument's operation from the lab in charge.
- All the usage information must be entered in the respective logbook of the instruments.
- Users must take utmost care while handling the instrument and sample processing.
- Users must clean the working bench, accessories and nearby area of the instrument before and after the usage.
- In the event of any damage, spillage, accidents and instrument malfunction, users must immediately report to the lab in charge/concerned SINE staff. Safety guidelines regarding such incidents must be followed meticulously.
- Fine will be imposed on the user/s in case of mishandling and damage to the instruments.
- Provision of lab space for users to store the chemicals, media and glassware is subjected to availability.
- SINE will not be responsible for the unattended samples. Such unattended samples will be discarded after 5 days without any prior notice and fine will be imposed on the user/s.
- Eating, drinking and food storage is strictly prohibited in the BioLab.

Guidelines for Microbiology related work

- User must wear the apron and the gloves while handling any biological samples (microbial/viral/bacteriophages/tissue samples) in the BioLab. For additional protection, use the mask, safety goggles or face shield.
- Before and after using the laminar air flow (LAF), users must surface sterilized hands after wearing the gloves, equipment, tools and working bench area using the 70% ethanol: water preparation.
- Mouth pipetting is strictly prohibited while working with cultures and chemical solutions.
- Needles, syringes, scalpels and other sharp objects must be handled carefully. Leak-proof and puncture-resistant containers must be used to dispose the sharp objects.
- All the procedures that may generate aerosols or droplets must be carry out inside the biosafety cabinet (e.g.: Vortex or Sonication). Before and after sample processing, work surface and equipment must be cleaned with 70% ethanol preparation.
- Users must declare the sample processing of bodily fluids, blood and other the infectious material in the user form. Only after necessary clearance from SINE Bio-Lab and IITB Ethics Commettee, users will be allowed to work with such infectious material in BioLab. Users must carefully handle the infectious fluids, sputum and blood samples to avoid spills and to prevent the aerosols and droplets formation.
- In case of any spills, the affected area needs to be cleaned with 5% sodium hypochlorite solution or domestic bleach solution. Allow minimum 10 minutes contact time of the bleach solution with the spillage area.
- Discarded specimens and cultures for autoclaving and/or disposal should be placed in leak proof containers, e.g. laboratory discard bags or biohazard bags. Containers should be secured with autoclave tape prior to disposal into waste containers.

- The spent media, cultures, chemical waste must be disposed as per the waste disposal guidelines. Users must contact the lab in charge for the detailed information.

Handling, Decontamination and disposal of contaminated materials and wastes

- Users must be well aware of the procedures for decontamination of wastes and disposal.
- All infectious/non-infectious materials should be decontaminated and autoclaved within the BioLab.
- Materials for decontamination and disposal should be placed in autoclavable colour coded plastic bags.
- Infectious material which needs to transfer to another facility for incineration purpose must be packed and labelled as per the guidelines.
- Contaminated used “sharps” such as hypodermic needles, scalpels, knives and broken glass must be collected in puncture-proof containers fitted with covers and need to be dispose as per guidelines of infectious material.

Chemicals and Reagents

- Lab in charge must maintain all the material safety data sheets (MSDS) and relevant documents available from chemical manufacturers.
- The MSDS describes the properties, reactivities, chemical hazards, and safe handling procedures. The Lab in charge must archived MSDS sheets in a specified folder and these MSDS sheets should be accessible to all the Lab users.

- Chemicals in the BioLab should be stored at the designated space as per safety regulations.
- Volatile liquids and vapour generating chemicals must be handled in fume hood.
- Lab in-charge must prepare and regularly update the inventory of all the chemicals and reagents.

Chemical spills

- User/Lab in charge must follow the proper safety guidelines provided by chemical manufacturer / MSDS in the event of a chemical spill.
- Spillage charts and spillage kits should be displayed in a prominent position in the laboratory. The lab in charge will provide these spillage kits to the users.
- Users must notify about the spillage immediately to the lab in charge. If needed, evacuate non-essential personnel in the event of chemical spill.
- Spillage spreading must be avoided. If possible, cover the spill with cloth/blotting paper/towels to contain it. If needed, users can use the appropriate disinfectant or detergent to clean the spill using paper towels or blotting paper.
- Do not touch the spill without proper protection (e.g. gloves and safety glasses). Hazardous spillage must be deal after wearing protective clothing, masks, safety face shield, safety glasses, heavy duty rubber gloves, rubber boots.
- Broken glass or other sharps must be separated from spillage and should be collected carefully into a puncture-resistant and leak-proof container for disposal.
- If the spilled material is flammable, extinguish all the open flames, turn off the gas supply in the room and adjacent areas, open the windows (if possible), and switch off the electrical equipment.

Fumigation of BioLab

- Lab in charge will sanitize the rooms and equipment on regular basis by fumigation using potassium permanganate and formaldehyde.
- Fumigation must be performed by trained personnel only. The person must wear apron, masks/respirator, safety glasses and hand gloves for the fumigation.
- All the instruments especially microscope, spectrophotometer, gel doc system must be covered properly during the fumigation. All the air openings in the room (i.e. windows, doors, exhaust fans etc.) should be closed before fumigation.
- Caution notice regarding fumigation must be displayed on the door of the lab. No one is allowed to enter in the Biolab during fumigation process.
- after the fumigation is completed, appropriate respirator masks must be worn while entering the room.
- Formaldehyde must be neutralized after fumigation is over.
- After fumigation the area must be ventilated thoroughly before any personnel is allowed to enter.

Handling Glassware

- Users must check for cracks/any damage before using the glassware.
- Use appropriate hand gloves while handling glassware.
- Broken glassware or cracked glassware must not be used and should be disposed as per safety guidelines.

Noise Abating Measures

- Users must reduce the instrument's noise by using the sound abating enclosure/barrier around the equipment provided by the manufacturer. Lab in charge should inform the users about such arrangements and will provide the suitable accessories.
- In case the noise levels cannot be abated, user must wear the headphone or earphone. User and Lab in charge must inform the other lab users about the noise from the instrument and provide the necessary ear protections.

Safety Guidelines for BioLab

The safety guidelines provide operational procedures, necessary measures and precautions to be taken in event of an emergency, accidents or natural disaster. These guidelines provide the necessary information about fire safety, biohazard risk assessment, decontamination, emergency evacuation and post-incident operation. These guidelines must be followed in compliance with IITB safety guidelines mentioned on the website.

Fire Hazard and safety

- Fire warnings, instructions and fire exit routes should be displayed prominently in each room, corridors and hallways.
- Lab in charge must acquire the appropriate training for all types of safety procedures from the competent authority (e.g. Safety officer). Lab in charge must be well acquainted with the fire extinguisher usage and fire evacuation protocol. The safety guidelines from IIT Bombay website needs to be referred (<http://www.iitb.ac.in/safety/en>).
- All the precautions must be taken to prevent the fire. In the event of fire, prompt action and use of firefighting equipment is desirable from the trained professional only.
- In the event of fire, inform the lab in-charge immediately. Lab in charge must inform the SINE office/IIT Bombay security/IIT Bombay emergency response team immediately.
- User / lab in-charge should attempt to contain the fire ONLY if the person has taken proper firefighting training and capable of using the appropriate fire extinguisher.
- In case of failure of fire containment efforts, evacuate the lab premises immediately. Users should proceed towards the nearest exit through the staircases and do not use

the elevator. Everyone is requested to gather at the designated assembly point outside the building.

- Lab in charge should arrange the fire and safety drills on regular intervals for all the lab users.
- Fire-fighting equipment should be stationed near main entrance and at the strategic points in the corridors and hallways. This equipment must be inspected and checked on regular basis for the functioning and for the shelf-life. Equipment should be maintained according to the manufacturer's requirements and the relevant records should be archived.
- Below is the information regarding the types of fire extinguisher and their intended use.

Types and uses of fire extinguishers

Type	Use for	Do not use for
Water	Paper, wood, fabric	Electrical fires, flammable liquids, burning metals
Carbon dioxide (CO ₂) extinguisher gases	Flammable liquids and gases, electrical fires	Alkali metals, paper
Dry powder	Flammable liquids and gases, alkali metals, electrical fires	Reusable equipment and instruments, as residues are very difficult to remove
Foam	Flammable liquids	Electrical fires

Electrical hazards

- It is essential that all the electrical installations and equipment are inspected and tested regularly for proper functioning and for any electrical defects.
- All the electrical equipment in the laboratory should be properly earthed.
- All the electrical equipment and wiring should conform to appropriate safety standards and codes.
- Instruments, appliances and extension boxes must be maintained in good condition.
- Unsupported or suspended electrical cords and line must be secured on walls or on ceiling.
- Electrical cords should not be routed over metal objects, overhead pipes, frames, and the metal racks.
- Do not route electrical cords under carpet, rugs, or under heavy objects.
- Users and lab in-charge must ensure that the total input current will never exceed the recommended input.
- Heavy duty instruments with higher ampere requirement such as autoclave and hot air oven must not be used in regular 15 amps sockets. A dedicated 32 amps industrial socket should be used for such heavy duty instruments to avoid overloading and electrical hazard.
- In case of a major campus wide power outage, laboratory personnel should unplug all the electrical equipment (including computers) and switch off light and fans prior to evacuating the lab.
- Any irregularity, sparks, noise from electrical equipment or instrument must be reported to Lab in charge immediately.

Emergency procedures for Biolab

- In the event of puncture wounds, cuts and abrasions to the person, it is advised to wash affected area and apply an appropriate skin disinfectant. Users should seek the medical attention as immediately.
- Users should report any accidents/emergency in lab to the Lab in charge. Lab in charge must inform the appropriate authority at SINE office immediately. No user should enter the BioLab after the event of any accident till further notice.
- Contact details of concerned people will be displayed prominently in the BioLab.
 - ❖ SINE office landline numbers, BioLab Number
 - ❖ Lab in charge contact number
 - ❖ IIT security/IITB quick response team/Fire services /IIT Hospital /ambulance services

Emergency equipment: Lab in charge is responsible for the availability of the following emergency equipment in the BioLab:

- ❖ First-aid kit.
- ❖ Rechargeable emergency light
- ❖ Appropriate fire extinguishers and fire blankets
- ❖ Apron, hand gloves, face safety shield and masks
- ❖ Disinfectants and detergents
- ❖ Toolkit including hammers, spanners, screwdrivers, ladder and ropes.

Safety guidelines for storage of compressed and liquefied gases

- Users must read Standard Operating Procedure (SOP) as well as safety guidelines (Dos and Don'ts) prior to use compressed and liquefied gases.
- Lab in charge and users must inspect the gas cylinders received in BioLab for the leakage and for the safety cap. Cylinders shall have clear labels indicating the type of gas, purity and pressure. If the cylinders are acceptable, they shall be stored in a proper location as per safety guidelines.
- Cylinders should be securely fixed (e.g. chained) to the wall so that they are not inadvertently dislodged.
- Cylinders must be transported with their caps in place and should be supported on trolleys.
- Gas cylinders should not be placed near radiators, open flames, heat sources, sparking electrical equipment, or in the direct sunlight.
- The main high-pressure valve should be turned off when the cylinder is not in use.
- Lab in charge must display safety warning notices near the storage and working area of flammable gas cylinders.
- Lab in charge and users should not use the non-specific and non-fit gas regulators for the gas cylinders. Users should always make sure that the gas regulator and valve fittings are compatible with the particular gas cylinder. Never use oil or grease on the gas regulator of a cylinder valve.
- When moving or shifting, the large cylinders should be properly strapped to trolley to ensure stability. Cylinders should be moved only with dedicated trolleys. Cylinders should never be rolled or dragged.
- In the event of leak, use a flammable-gas leak detector or soapy water to detect and locate the leak.

- If the leak cannot be stopped by tightening a valve gland or a packing nut, emergency action procedures should be initiated. Lab in charge should not attempt to repair a leak at the valve threads or at safety device and should contact the concerned personal/authority immediately.
- Lab in charge must consult with the supplier for all the important instructions and must be conveyed the important information to users on regular basis.

Safe handling of Cryogenic Liquids (liquid Nitrogen)

- Cryogenic liquids must be handled by trained personal and trained user only and the activity will be supervised by the Lab in charge/trained personal.
- The transfer of liquid nitrogen from one container to another could be done only in the presence of Lab in charge.
- Users must wear cryo-gloves, cryo apron, protective shoes and face shield while handling liquid nitrogen.
- Only appropriate impact-resistant containers which have been designed to withstand the extremely low temperatures must be used for handling and storage of larger quantities of cryogenic liquids.
- Only dedicated Polyurethane Foam Ice Buckets are permitted for liquid nitrogen. Styrofoam boxes (thermo col) are NOT allowed for handling liquid nitrogen at any time.

BioLab Usage charges

Sr. No.	Instrument	SINE incubatee/IIT Bombay students/Academia (For one person)	SINE incubatee/IIT Bombay students/Academia (for additional person 1+1)	Industry/External users
1	Laminar Air Flow I	55 Rs / h/ person, 400 Rs / 8 hour / person; 1700 Rs / week / person	75 Rs.h; 550 Rs/8 h; 2500 Rs/week	85 Rs / hour/ person, 500 Rs/ 8 hour/ person; 2200 Rs/ week / person
2	Laminar Air flow II	55 Rs / h/ person, 400 Rs / 8 hour / person; 1700 Rs / week / person	75 Rs.h; 550 Rs/8 h; 2500 Rs/week	85 Rs / hour/ person, 500 Rs/ 8 hour/ person; 2200 Rs/ week / person
3	Biosafety Cabinet level 1	85 Rs / h /person; 275 Rs / 4 hour/ person; 500 Rs/8 hour /person	120 Rs/h; 400 Rs/ 4 h; 750 Rs/8 h	150 Rs/h; 500 Rs/4 h; 1000 Rs/8 h
4	Biosafety Cabinet II (Thermo fisher)	85 Rs / h /person; 275 Rs / 4 hour/ person; 500 Rs/8 hour /person	120 Rs/h; 400 Rs/ 4 h; 750 Rs/8 h	150 Rs/h; 500 Rs/4 h; 1000 Rs/8 h
5	Autoclave	450 Rs/ 4 h/ person	650 Rs/4 h	850 Rs/ 4 h/ person



6	Autoclave II	450 Rs/ 4 h/ person	650 Rs/4 h	850 Rs/ 4 h/ person
7	Minus 20 degree Freezers	2000 Rs/Tray/month	2000 Rs/Tray/month	4000 Rs/Tray/month
8	Minus 80 degree Freezers	2500 Rs/rack/month	2500 Rs/rack/month	4500 Rs/rack/month
9	4 degree chromatography refrigerator I	60 Rs/24 h; 350 Rs/7 days; 1400 Rs/30 days	60 Rs/24 h; 350 Rs/7 days; 1400 Rs/30 days	110 Rs/24 h; 650 Rs/7 days; 2600 Rs/30 days
10	4 degree chromatography refrigerator II	60 Rs/24 h; 350 Rs/7 days; 1400 Rs/30 days	60 Rs/24 h; 350 Rs/7 days; 1400 Rs/30 days	110 Rs/24 h; 650 Rs/7 days; 2600 Rs/30 days
11	UV Spectrophotometer Vis	65 Rs/h/ person	85 Rs/h	120 Rs/h/ person
12	Microplate Reader	400 Rs/hour	400 Rs/hour	1200 Rs/hour
13	Refrigerated Shaker Incubator	250 Rs/12 h; 500 Rs/24 h/ person	300 Rs/12 h; 600 Rs/24 h/ person	400 Rs/12 h; 800 Rs/24 h/ person
14	Hot air oven	25 Rs/Day; 500 Rs/month	25 Rs/Day; 500 Rs/month	50 Rs/Day; 1000 Rs/month
15	PCR workstation	55 Rs / h/ person, 400 Rs / 8 hour / person; 1700 Rs / week / person	75 Rs.h; 550 Rs/8 h; 2500 Rs/week	85 Rs / hour/ person, 500 Rs/ 8 hour/ person; 2200 Rs/ week / person



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16	Gradient PCR Machine	300 Rs/ Run/ person	500 Rs/ Run	800 Rs/Run/ person
17	RT PCR	700 Rs/run	700 Rs /run	2000 Rs/Run
18	Gel Electrophoresis	200 Rs/ Run/ person	300 Rs/ Run/ person	400 Rs/ Run/ person
19	Western Blot Unit	250 Rs/ h/ person	400 Rs/ h/ person	500 Rs/ h/ person
20	Ice maker machine	50 Rs/8 hr; 150 Rs/week; 500 Rs/month	50 Rs/8 hr; 150 Rs/week; 500 Rs/month	100 Rs/8 hr; 450 Rs/week; 1700 Rs/month
21	Hot plate with Magnetic stirrers	25 Rs/8 h/person; 350 Rs/Month/ person	40 Rs/8 h; 600 Rs/Month/ person	40 Rs/8 h; 550 Rs/Month/ person
22	Weighing Balance (Analytical and general balance)	25 Rs/8 h/person; 350 Rs/Month/ person	50 Rs/8 h; 600 Rs/Month/ person	40 Rs/8 h; 550 Rs/Month/ person
23	pH meter I	25 Rs/8 h; 350 Rs/Month/ person	40 Rs/8 h; 600 Rs/Month/ person	40 Rs/8 h; 550 Rs/Month/ person
24	pH meter II	25 Rs/8 h; 350 Rs/Month/ person	40 Rs/8 h; 600 Rs/Month/ person	40 Rs/8 h; 550 Rs/Month/ person
25	Probe sonicator	50 Rs/h, 1000 Rs/ month/ person	75 Rs/h, 1800 Rs/ month/ person	75 Rs/h, 1500 Rs/ month/ person



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26	Binocular Microscope	50 Rs/h, 1000 Rs/ month/ person	80 Rs/h, 1800 Rs/ month	75 Rs/h, 1500 Rs/ month/ person
27	CO2 Incubator I	100 Rs/Shelf/Day; 2500 Rs/Shelf/month	200 Rs/Shelf/Day; 4500 Rs/Shelf/month	250 Rs/Shelf/Day; 6500 Rs/Shelf/month
28	CO2 Incubator II	100 Rs/Shelf/Day; 2500 Rs/Shelf/month	200 Rs/Shelf/Day; 4500 Rs/Shelf/month	250 Rs/Shelf/Day; 6500 Rs/Shelf/month
29	Liquid Nitrogen container storage	1000 Rs /month/Rack	1000 Rs /month/Rack	4500/month/Rack
30	Liquid N2	30 Rs/L	30 Rs/L	70 Rs/ L
31	Lyophilizer	2500 Rs/day	2500 Rs/day	5000 Rs/ day
32	Water Bath	50 Rs/ 4 h; 100 Rs/Day	85 Rs/ 4 h; 150 Rs/Day	50 Rs/ 4 h; 100 Rs/Day
33	Refrigerated Centrifuge	100 Rs/h; 400 Rs/4 hour; 600 Rs/day	150 Rs/h; 700 Rs/4 hour; 1000 Rs/day	200 Rs/h; 800 Rs/4 hour; 1200 Rs/day
34	High speed centrifuge	350 Rs/hour	350 Rs/hour	1500 Rs/hour
35	Gel Documentation System	Rs. 200/ scan	Rs. 200/ scan	Rs 500 Per Usage Upto a maximum of 1 hour)
36	Gel Rocker	200 Rs/4 h/person; 400 Rs/8 h	200 Rs/4 h/person; 400	400 Rs/ h/person



			Rs/8 h	
37	Dry heating Bath	50 Rs/h/person; 200 Rs/4 h; 400 Rs/8 h	50 Rs/h/person; 200 Rs/4 h; 400 Rs/8 h	200 Rs/h /person
38	Culture Incubator I	75 Rs/12 h; 150 Rs/24 h; 950/7 days	75 Rs/12 h; 150 Rs/24 h; 950/7 days	350 Rs/12 h; 550 Rs/24 h
39	Culture Incubator II	75 Rs/12 h; 150 Rs/24 h; 950/7 days	75 Rs/12 h; 150 Rs/24 h; 950/7 days	350 Rs/12 h; 550 Rs/24 h
40	Ultrasonic Bath/Cleaner Sonicator	50 Rs/h; 200 Rs/4hr	50 Rs/h; 200 Rs/4hr	150 Rs/h; 600 Rs/4 h
41	1 degree cooler	25 Rs/ 12 hours, 50 Rs/ 24 hours	25 Rs/ 12 hours, 50 Rs/ 24 hours	150 Rs/ 12 hours, 300 Rs/ 24 hours
42	Inverted Microscope	75 Rs/ h	100 Rs/ h	300 Rs/h
43	Storage Space	500 Rs/cabinet (2ft X 4 ft)/month		2500 Rs/cabinet (2ft X 4 ft)/month
44	Storage Cupboard	1 No (500 Rs/month)	1 No (500 Rs/month)	
45	Consumables	As per actual usage		As per actual usage
46	Desiccator	20 Rs/8 h	20 Rs/8 h	80 Rs/8 h
47	Membrane filtration assembly+ Vacuum Pump	50 Rs/h	50 Rs/h	100 Rs/h



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48	Micropipettes	100 Rs/ month	100 Rs/ month	400 Rs/ month
49	Liquid N2	30 Rs/L	30 Rs/L	70 Rs/ L
50	Distilled water /MiliQ water	75 Rs/ L	75 Rs/ L	75 Rs/ L
51	Vortex	Free	Free	Free
52	Microwave	Free	Free	Free