



**ALKU GENETICS AND BIOENGINEERING
LABORATORY SAFETY AND WORKING RULES FORM**

Ensuring safety in the laboratory is very important for one's own safety, the safety of the people he/she works with and the safety of the environment. Examining and applying the warnings in this booklet before and after the laboratory work will protect laboratory safety and personal health from dangers. Chemical materials used in the laboratory can be very dangerous and present a great danger when they come together. In order to prevent this, it is necessary to have information about the chemicals to be studied. In order to achieve this, the warnings mentioned in this booklet should be taken into consideration, the methods should be well known, and the laboratory should be worked in a planned and programmed manner.

SECTION 1: GENERAL RULES TO BE FOLLOWED IN LABORATORIES

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| <ol style="list-style-type: none">1. Training on laboratory safety rules and general principles must be received and the necessary competence must be gained.2. In case of emergency, contact information, first aid practices and emergency exit locations must be available.3. Have information about the laboratory supervisor. Problems occurring in the laboratory must be reported to the laboratory supervisor.4. Do not enter the laboratory without permission from the laboratory supervisor and never work alone in the laboratory.5. Jokes should never be made in the laboratory and students should not chat among themselves. This is both dangerous and forbidden.6. The location and contents of the medicine cabinet and how the fire extinguisher works should be learnt.7. Personal belongings such as bags, coats, jackets, etc. must be hung on the hangers in the laboratory.8. In the laboratory, you must work with a long lab coat with the front closed. While working in the laboratory, eye and skin protective equipment such as goggles, face mask, gloves, etc. should be used according to the nature of the work.9. Long accessories such as ties, scarves, shawls, etc. that can be pulled by rotary motors should not be used in the laboratory. Jewellery such as rings and bracelets should be removed before the experiment and should not be worn during the experiment.10. Long hair should be tied back as long hair can cause danger in the laboratory environment.11. Closed, comfortable, flat shoes and/or work shoes should be worn in the laboratory. If you have cuts, wounds and similar conditions on your hands while working in the laboratory environment, they should be covered with a waterproof tape.12. Food/drink should not be consumed and food materials should not be kept in the laboratory.13. After the experimental work is finished, the materials used, the experimental setup and the experimental bench must be cleaned with due care. Hands should be washed with soap and water and leave the laboratory with the permission of the responsible person.14. Be careful and attentive during the work. Hands should be washed with soap and water before touching the face in the laboratory and nothing should be taken into the mouth. | <ol style="list-style-type: none">15. Time is very important in the laboratory. The work to be done should be planned at the beginning of the experiment and the laboratory time should be used effectively.16. The objective and ocular part of the microscope should be cleaned before and after each use with the help of lens paper or cheesecloth without damaging the lens.17. Do not take any substance and/or material out of the laboratory without the permission of the laboratory supervisor.18. Equipment and devices used in the laboratory must be properly closed, cleaned and put away.19. Solid wastes generated at the end of the experiment must be thrown into the rubbish bin and the rubbish bins must not be left open. Liquid wastes must be removed from the working environment in accordance with the technique and legislation. |
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SECTION 2: GENERAL RULES TO FOLLOW WHEN WORKING WITH CHEMICALS

1. All chemicals in the laboratory contain hazards. For this reason, chemicals should never be touched with bare hands, tasted or smelled.
2. Solid substances should always be taken from their bottles with a clean spoon and the same spoon should be used to take another substance without cleaning.
3. Bottle caps should never be placed in such a way that their inner side touches the table. Otherwise, the cap may become contaminated with foreign matter, which may contaminate the pure substance or solution in the bottle when it is placed back into the bottle.
4. The caps or stoppers of the bottles should not be changed. When filling the solutions into the bottles, 1/4 part should be left as expansion space.
5. Chemical substances should not be mixed indiscriminately. Some chemicals may react with each other and cause fire or violent explosions or toxic products may be formed. Such substances are called incompatible chemicals. These substances should always be stored separately.
6. Chemical substances should be stored in separate rooms, cabinets or warehouses with ventilation systems according to their risk groups and storage conditions. Chemical substances should not be stored on the floor or on the cabinet. After you finish your work in the place where the chemicals are stored, the storage place must be locked and the key must be handed over to the laboratory supervisor.
7. When preparing solutions, the safety precautions specified in the 'Safety Data Sheets (MSDS)' of the chemicals must be followed.
8. Solutions should be prepared in appropriate quantities. Organic solvents and volatile liquids should not be poured into the sink.
9. A special laboratory notebook must be kept for the work done in the laboratory and the work and observations made must be recorded in this notebook.
10. Special gloves or cloths must be used to avoid cutting hands in glass cutting and corking situations. Rubber stoppers should not be put on sharp, broken glass tubes or pipes.
11. When a liquid in the tube is to be heated, the tube should be heated slowly from the top downwards and the tube should be shaken very gently and continuously.
12. The mouth of the tube should not be held towards yourself or the person working next to you and should never be bent over and looked from top to bottom.
13. When transferring liquid from bottles, it should be held with the label side upwards. Otherwise, the drops flowing from the mouth of the bottle will distort the label and the writing on it. It is the most appropriate way to wipe the last drops remaining in the mouth of the bottle with the bottle's own cap.
14. Samples should not be stored in unstable containers such as beakers and balloon jugs. Substances in lidded and stoppered containers should never be heated, and heating and boiling should not be carried out in containers that do not bear a fire-resistant mark.
15. In order to avoid mistakes, the bottles containing the solution should be labelled with appropriate labels and pens.
16. Highly volatile substances such as petrol, ether and carbon sulphide should not be used in a laboratory with an open flame, no matter how far away. Ether vapours can burn from a flame 5 metres or more away and the burning vapours can carry the fire. Flammable liquids should not be kept around hot surfaces that may cause ignition, and these surfaces should not be touched directly by hand for any reason.
17. Work with organic, toxic and corrosive chemicals should be carried out in a fume cupboard. When diluting all acids and alkalis, always pour the acid and alkali slowly over the water, never vice versa.
18. If mercury is spilled in any way, it should be collected by vacuum welding or foam type synthetic sponges. If it is too trace amount to be collected, it should be removed by sprinkling powdered sulphur on it and turning it into sulphur in this way.
19. Broken parts of thermometer with mercury and mercury residues should never be thrown into the garbage or sink and should not be buried in the soil.
20. If chemicals and/or samples are spilled in the laboratory environment, they should be cleaned up immediately and the laboratory supervisor should be notified if necessary.
21. Two hands should be used when carrying chemicals; while holding the chemicals tightly from the cap with one hand, the other hand should be grasped from the bottom of the bottle.
22. When corrosive caustic substances such as acids and bases come into contact with the skin, they should be washed immediately with plenty of water.



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SECTION 3: GENERAL RULES TO BE OBSERVED WHEN WORKING WITH ELECTRICAL EQUIPMENT

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| <ol style="list-style-type: none">1. Hands, switches and sockets must be dry when working with electrical devices. Except when necessary, it should be ensured that the power switch of electrical devices is switched off and the plug is not in the socket before working.2. Electrical plugs must not be removed by pulling the cord. Do not work with an electrical device in damp areas.3. Liquid containers must never be kept where electrical systems are located. If a circuit element burns, the resulting smoke must not be inhaled. It should be remembered that circuit elements may contain toxic materials.4. If any equipment malfunctions during operation, the laboratory supervisor or instructor should be notified immediately. Never try to solve the problem yourself to avoid self-harm. Permission must be obtained before operating high voltage devices and electrical panels must not be opened without permission. | <ol style="list-style-type: none">5. For wiring or other electrical renovations, the electrician or the building administrator should be consulted.6. The use of extension cords should be avoided and, if they must be used, extension cords should be plugged into earthed and fused sockets. Extension cords should not be passed under doors or through windows, hung from ceilings or attached to other extension cords.7. Please do not make any modifications to high-voltage equipment.8. When adjusting a high-voltage appliance, only one hand should be used and the other hand should be in your pocket or behind your back. This procedure prevents high voltage from flowing from one arm to your body and back to the other arm.9. Please make sure that electrical appliances are earthed. The use of devices with two poles joined together instead of a three-pole plug is not permitted. |
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SECTION 4: FIRST AID

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| <ol style="list-style-type: none">1. In cuts or haemorrhages; the wound and its surroundings are cleaned and covered with gauze. Depending on the severity of the bleeding, pressure is applied with a loose or tight tampon.2. In burns; the victim is prevented from going into shock and getting infected. The first thing to do in burns that are ignited is to prevent the burning part from contacting the air. When this cannot be done, water should be poured on the burning part. In chemical substance burns such as acid, washing with plenty of water should be carried out. If the burn is under clothes, clothes should never be removed. The burn should never be touched by hand.3. In fractures; if the fracture is under the clothes, the clothes should be cut off. If there is a wound, it should be cleaned, if there is bleeding, it should be stopped and tampon should be applied. The fracture should be fixed with hard materials from both sides and wrapped in a way that it will not move. Different applications are made for fractures occurring in different parts of the body.4. Drowning occurs as a result of the inability to provide sufficient amount of oxygen by closing the mouth due to the chemicals used or as a result of electric shock. The tongue of the unconscious victim should be prevented from escaping to the back, if necessary, this should be done with a clamp. Artificial respiration should be started immediately. One of the methods of 'Oral Artificial Respiration Application'; the patient is laid on his/her side. If there are chewing gum etc. in the mouth, they are removed. The area around the mouth is cleaned. The feet are slightly raised and the head is kept bent backwards. The lower jaw is pulled downwards. Cover the mouth with a handkerchief or a thin cloth. The mouth may be locked in electric shocks. In this case, the nose is treated instead of the mouth. The nostrils are closed with two fingers (mouth in electric shock). This prevents air from escaping through the nostrils. | <p>SKIN BURNS</p> <ol style="list-style-type: none">1. Clothes buttons should be unbuttoned, chemical contaminated clothes and shoes should be removed immediately; skin should be washed with plenty of water for at least 15 minutes. Ointment/spray etc. should not be applied to the wound.2. Cover the burn with a sterile bandage (if not available, a clean cloth) without pressing too much.3. If the burn is extensive, emergency help should be called. <p>EYE IRRITATION</p> <ol style="list-style-type: none">1. The unirritated eye should be protected immediately; the other eyelid should be forced open and flushed with water or eye cleanser for at least 15 minutes.2. Care should be taken to ensure that the washing process is carried out from the upper level of the nose in the direction of the ears so that the other eye is not affected and the chemical does not come back into the eye.3. Contact lenses, if any, should be removed immediately for the effectiveness of washing.4. Both eyes should be covered with a sterile or clean bandage.5. Health care services should be contacted. <p>CHEMICAL INGESTION</p> <ol style="list-style-type: none">1. If the person is conscious and can swallow, he/she should be given water or milk (if he/she tends to vomit, do not continue to give fluids).2. If the person is unconscious, the injured person's head and body must be turned to the left side.3. The person exposed to the accident should be transported immediately to the nearest health care centre. <p>INHALATION OF CHEMICALS</p> <ol style="list-style-type: none">1. The area should be evacuated and the injured person should be provided with fresh air.2. Health care services should be contacted, immediately. |
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*****PLEASE APPROVE THE LAST PAGE AND GIVE IT TO THE LABORATORY RESPONSIBLE.*****



ALBU GENETICS AND BIOENGINEERING
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ALBU Genetics and Bioengineering Department Laboratories Safety Form

This form will be filled out by the student and given to the laboratory supervisor before the experimental study / first application lesson. No experimental work will be allowed without filling out the form. A copy of this form must be kept in the student's/researcher's laboratory file.

Name :
Surname :
Student Phone No :
Student ID :
Supervisor :
Course/Project Name :

	YES	NO
• I have read and understood the laboratory safety rules manual.	<input type="checkbox"/>	<input type="checkbox"/>
• I know my responsibilities regarding laboratory safety.	<input type="checkbox"/>	<input type="checkbox"/>
• I agree to follow all safety procedures shown by the laboratory supervisor.	<input type="checkbox"/>	<input type="checkbox"/>
• I know that I must not perform any experiment without permission.	<input type="checkbox"/>	<input type="checkbox"/>
• I know that I must inform the laboratory supervisor if I need to work outside working hours or on weekends.	<input type="checkbox"/>	<input type="checkbox"/>
• I know that I should never work in the laboratory without an apron, long hair should be tied up and closed shoes should be worn.	<input type="checkbox"/>	<input type="checkbox"/>
• I know that I must use the necessary protective equipment such as apron, gloves and goggles.	<input type="checkbox"/>	<input type="checkbox"/>
• I know that I should not enter the laboratory with food and drink and that smoking is not allowed.	<input type="checkbox"/>	<input type="checkbox"/>
• I know not to taste or smell any chemicals and not to use a pipette with my mouth.	<input type="checkbox"/>	<input type="checkbox"/>
• I know never to add water to acid.	<input type="checkbox"/>	<input type="checkbox"/>
• I know that I should not use a device for which I have not been trained.	<input type="checkbox"/>	<input type="checkbox"/>
• I know that all damaged or broken equipment must be reported immediately to my supervisor or laboratory supervisor.	<input type="checkbox"/>	<input type="checkbox"/>
• I am familiar with emergency procedures. I know the location of fire extinguishers, first aid cabinets, emergency showers and emergency exits.	<input type="checkbox"/>	<input type="checkbox"/>
• I have special health problems (diabetes, asthma, etc.). I have declared this in writing to the laboratory supervisor.	<input type="checkbox"/>	<input type="checkbox"/>
• I know that I must not bring visitors to the laboratory.	<input type="checkbox"/>	<input type="checkbox"/>
• I know that I should not wear contact lenses in the laboratory.	<input type="checkbox"/>	<input type="checkbox"/>
• I know that I should not use other people's devices or consumables (such as glass, gloves, chemicals, pipettes) in the laboratory without permission	<input type="checkbox"/>	<input type="checkbox"/>
• I know that I should not perform any operation with nitrogen, oxygen, etc. gas and liquefied gas cylinders.	<input type="checkbox"/>	<input type="checkbox"/>



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YES NO

- I know that I must inform the laboratory supervisor immediately in case of any glass cut, stinging, bleeding, burns, etc. during the work, even if it seems insignificant.
- I know that if I do not comply with the laboratory rules, I will receive a written warning and will be suspended from the laboratory; I know that disciplinary proceedings will be initiated against me in case of continued indiscipline.
- I am aware that if I behave in a manner and behaviour that endangers occupational health and safety and creates the possibility of an occupational accident, I must take into account the verbal warning of those responsible; if I do not, I know that disciplinary proceedings will be initiated against me immediately.
- I know that I should not touch door handles, telephones, computers or devices with dirty hands or gloves.
- I know that I must not perform any operation related to gas cylinders.
- I know and accept that the laboratory is not responsible for any material and moral damages that may occur if I do not comply with the rules.
- I am aware that in case of an allergy that may be caused by the chemicals or equipment to be used (e.g. latex gloves), I must immediately inform the laboratory supervisor.
- I know that I should not sit on the benches.
- I know that I must wash my hands with soapy water after laboratory work.
- I know that it is forbidden to use mobile phones during laboratory work, except in cases permitted by the laboratory supervisor (taking photos of experimental procedures or using a stopwatch, etc.).

Date :

Signature :

EMERGENCY CONTACT DETAILS

1.
Name Surname :
Degree of proximity :
Phone number :

2.
Name Surname :
Degree of proximity :
Phone number :

IF YOU HAVE ANY CHRONIC DISEASES AND/OR MEDICATION YOU TAKE REGULARLY