



# Instructions for Research Work in Genetic-Engineering Laboratories

According to paragraph 12, part 2 GenTSV

## Safety Level 1

---

### Methods of Protection and Rules for Conduct

---

- In the S1-area only those are allowed to work who have received instructions from the head of the project before the work has started, and thereafter once every year according to these instruction sheets and have signed to confirm these instructions
- **Pregnancy** must immediately be **reported** to the head of the project because of work with potential mutagenic and carcinogenic substances, such as acrylamide, phenol and ethidium bromide .
- **Doors and windows** should be kept **closed** during the work.
- In the S1 area, **laboratory coats** must be worn at all times. Laboratory coats must be stored separately from outdoor clothes. Those working directly with microorganisms must wear **protective gloves**. The university provides all protective clothing
- Upon completion of the work and before the working area is left, hands must either be disinfected or washed thoroughly and creamed (for skin protection)..
- **Pipetting by mouth is not allowed** .
- Syringes and sharp-edged utensils should only be used when unavoidable. After use they should be collected in a hard receptacle provided for the purpose and disposed of in the receptacle.

- Laboratories should be kept tidy and clean. Only those instruments and materials needed for the ongoing experiments should be on the benches
- In all experiments, formation of **aerosols** should be avoided as far as possible
- **The identity of the organisms used must be regularly** checked
- Upon completion of the work, the organisms must be properly stored or disposed of in the appropriate manner .
- **Genetically modified organisms** should be **stored** in refrigerators/laboratories in labelled containers. Storage must be documented within the framework of the records according to the Genetic-Engineering Rules (GenTAufzV). The labelling of the cultures must clearly state the name of the organism, the vectors and the name of the research worker. Any containers discovered in the wrong place without proper identification will be destroyed by the head of the project with no further questions. The authorised representative for biological safety will submit a written report on this matter.

For the use of alcoholic disinfectants, the following rules must be obeyed:

1. The area to be cleaned may not be larger than 2 m<sup>2</sup>.
2. For each m<sup>2</sup> no more than 50 ml of disinfectant may be used.
3. No ignition sources may be anywhere near ( such as, for example, a naked flame)

The area may not be warmer than 37°C.

**Eating, drinking, smoking, taking snuff or adjusting make-up** as well as storage of food, drinks, sweets or cosmetics are **forbidden** in genetic engineering laboratories .

- Uncontrolled release of microorganisms can occur during centrifugation of bacteria cultures, if the centrifuge beaker is too full. For this reason, centrifuge beakers for fixed angle rotors may only be filled to a certain level, which prevents overflowing during centrifugation. If a leak does occur, the fluid containing the organisms must be removed with blotting paper which must be autoclaved and the space around the rotor in the centrifuge must be disinfected.

- If fluid containing organisms is spilled onto the bench or the floor, the fluid must be blotted up, the blotting paper autoclaved and the surfaces immediately disinfected. Protective gloves must be worn.

### Records

- Before a gene modified project begins, the head of the project arranges for **records** to be drawn up according to the Genetic-Engineering Rules (Gen-TAufzV) on the basis of the form Z and confirms their correctness with his signature. The letter of approval granted must be kept with these records
- The records must be kept according to §3 part 7 **continually and promptly** .
- The use of new donors, acceptors and vectors is usually the reason for a further gene modified project about which records must also be kept. Information about the donors, acceptors and vectors must be kept with the records.
- Records must be kept right up to the end of the project and ten years longer

### Transport, Disposal and Disinfection

- S1 organisms should only be transported outside the gene engineering laboratories in **shatter-proof, closed and labelled containers**. This holds true also for GVO-waste
- All waste contaminated with gene modified organisms *where it is not sure whether a detrimental effect on legally protected rights ????? according to § 1 No. 1 of the Genetic-Engineering Rules* is to be expected must be autoclaved for **20 minutes at 121°C**. The autoclave is in room x. Thereafter the waste can be disposed of with the normal laboratory waste.
- All the apparatus which has come into contact with gene modified organisms must be autoclaved or chemically disinfected
- When glass pipettes are disinfected it must be ensured that they are completely covered by the disinfectant solution

- Contaminated disposable material must be collected in the autoclave bags provided and autoclaved
- Pellets containing bacteria which are formed during centrifugation (for example, in plasmid preparations) must be suspended in liquid, poured into a glass receptacle and then autoclaved
- Liquid waste must be collected in glass containers, stored in metal bins and autoclaved.
- The **operating instructions** for the autoclave are to be followed when it is used. The head technician must explain how the autoclave works before the machine is put into operation .
- The rules of the BetrSichV (safety regulations) must be followed when the autoclave is put into operation

<b>In case of danger</b>
--------------------------



**The first aid cupboard is in room .....**

**Emergency**

**110 (from every telephone)**

Injuries must be reported to the head of the project, or his substitute or the BBS and documented in the Accidents Book.

### **Injuries:**

- **Disinfect** contaminated skin (see the Hygiene Plan). The disinfectant solution is in ...

Wash eyes and mucous membranes thoroughly (at least for 5 minutes) with copious amounts of running water. **Eye wash** is kept next to the wash basin in rooms xy. Before the work begins, the head technician must explain how the eye wash works.

If symptoms persist in spite of immediate measures, the injured person must come straight to the Day Clinic or the Night Clinic (TN) UBFT, Level 01, Lift C 1. The doctors should be informed of the danger of infection with biological material.

**Fire:**

The main escape routes are the routes xy.

The fire department plan is .....

Fire extinguishers are in rooms... (or in the hall?)

If clothing has caught fire, use the safety shower

.

Following light burns or scalds, the damaged skin should be held under running cold water for at least 10 minutes or in ice (from the ice machine).

Signature of the head of the project  
(or: Head of Project)

Date