UCC
Coláiste na hOllscoile Corcaigh, Éire
University College Cork, Ireland

UCC Biosafety

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|---|---|---|
| **Department:** _____ | **Building:** _____ | **Room: (PI)** _____ |
| **Room: (Lab)** _____ | **Autoclave Location**: _____ | |
| **PI:** _____ | **Responsible Person:** _____ | |
| **Containment Level (GMM):** | **1**☐ | |
| **Inspected by:**_____ | | **Date:**__/__/__ |

GMM Class 1

**Key:** X = no √ = yes N/A = not applicable

(example documents available for items in **bold**)

| **(A) Other Requirements** | |
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| ☐ | Annual Report Submitted (2010)? *deadline 31st March 2011* |

| **(B) Good Microbiological Practice (GMP)** *[GMM Class 1 & 2 & GMO]* | |
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| ☐ | The laboratory should be easy to clean. Bench surfaces should be impervious to water and resistant to acids, alkalis, solvents and disinfectants |
| ☐ | Benches should be clean and free from clutter & Bench tops should be cleaned after use |
| ☐ | The laboratory door should be closed when work is in progress |
| ☐ | **Biohazard sign** at entrance to lab, autoclave area, freezer area |
| ☐ | Minimise the production of aerosols |
| ☐ | The identity of GMOs should be regularly checked to avoid the culturing of incorrect strains. |
| ☐ | Appropriate training of personnel - **Staff training record** |
| ☐ | Maintenance of equipment – Autoclave/Fume cupboards/Laminar Flow Hoods …. |
| ☐ | **Inactivation Record** (Autoclave) |
| ☐ | Washing and decontamination facilities |

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| ☐ | Hands must be disinfected or washed immediately when contamination is suspected, after handling viable materials and also before leaving the laboratory |
| ☐ | Effective disinfectants should be available for immediate use in the event of spillage |
| ☐ | Used laboratory glassware and other materials awaiting disinfection must be stored in a safe manner |
| ☐ | Use of sharps should be avoided. Contaminated syringes and sharps must be disposed of in a "sharps bin" and incinerated |
| ☐ | Materials for disposal must be transported in robust and leakproof containers without spillage |
| ☐ | Eating, chewing, drinking, taking medication, smoking, storing of food and applying cosmetics must not take place in the work area |
| ☐ | Mouth pipetting must not take place |
| ☐ | Laboratory coats should be worn in the laboratory and removed when leaving the laboratory suite |
| ☐ | Personal protective equipment, including protective clothing, must be<br>- stored in a well defined place<br>- checked and cleaned at suitable intervals<br>- when discovered to be defective, repaired or replaced before further use |
| ☐ | Personal protective equipment which may be contaminated by biological agents must be:<br>- removed on leaving the working area<br>- kept apart from uncontaminated clothing<br>- decontaminated and cleaned, or if necessary, destroyed |
| ☐ | **Biosafety Manual with SOPs** |
| ☐ | All accidents and incidents should be immediately reported to and recorded by the person responsible for the work or other delegated person |
| ☐ | Animals must not be allowed to enter into the laboratory |
| **(C) Physical Control Measures: Facility Design** *Class 1* | |
| ☐ | process with viable micro-organisms separated from the environment (closed system) |
| ☐ | Accessability of window that opens |
| ☐ **optional** | biohazard sign on the door |
| ☐ | signs at laboratory entrance:<br>- special hazard signs if an organism containing rDNA needs special provision for persons entering the laboratory |

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| optional | - names of occupants who have access to the laboratory |
| ☐ | Outward opening of Laboratory doors |
| ☐ optional | Observation window or alternative to enable occupants to be seen |
| **(D) Physical Control Measures: Containment equipment *GMM Class 1*** | |
| ☐ Optional | check the suitability of any chemical disinfectants in use |
| ☐ on site | check position of the autoclave with respect to the GMO installation |
| ☐ | wash hand basin or sink that can be used for hand washing with:<br>- dispenser containing soap<br>- dispenser containing hand disinfectant<br>- paper towels |
| ☐ optional | check position and design of biological safety hoods |
| ☐ | Check design of the equipment for the safe storage of GMOs. Storage is not allowed in floors as long it is not part of the facility |
| ☐ optional | check design of waste transport containers |
| ☐ optional | check design of containers for the transport of GMOs inside the facility |
| ☐ | check design of centrifuge buckets |
| ☐ | Provision of eye wash stations / bottles / equipment |
| **(E) Safety Management – Work Procedures *GMM Class 1*** | |
| ☐ | doors closed while working |
| ☐ | workers should be given adequate information on safety matters and be suitably trained. Training should include the following points:<br>a) the existence and application of written work procedures<br>b) the procedures for using particular pieces of equipment<br>c) spillage control and other emergency procedures |
| ☐ optional | check at which process steps hazardous quantities of aerosols are formed. Any operation that may involve the formation of aerosols (e.g. sonicating, centrifuging, pipetting) shall be performed in such a way as to ensure that these do not find their way into the working area. |

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| ☐ | GMO's are only to be transported within the facility in closed, robust and leakproof containers |
| ☐ | work surfaces must be decontaminated daily and after a spillage |
| ☐ optional | inactivation of GMOs in contaminated material and waste |
| ☐ | users should ensure that the performance of safety equipment is validated (e.g. autoclaves and safety hoods)<br>- validation of equipment (e.g. autoclaves, safety hoods)<br>- maintenance of the equipment<br>- markers used to verify the efficiency of autoclaves |
| ☐ | skin contact with rDNA material must be avoided |
| ☐ | decontaminate protective clothing before laundering |
| ☐ | protective clothing and street wear must be kept separate |
| ☐ optional | *Gloves* (Optional) |
| ☐ optional | *implementation of an insect and rodent control programme* |
| ☐ | sample collection, addition of materials to closed system and transfer of viable micro-organisms to another closed system, should be performed as appropriate |
| ☐ | safe storage of biological agents |
| ☐ | Regular identification and confirmation of purity of microbial strains |
| ☐ | Safe storage of contaminated laboratory equipment |
| ☐ | Personnel to remove protective clothing on leaving the facility |
| ☐ | Worker required to wear closed shoes |
| ☐ optional | Regular maintenance of safety equipment such as safety cabinets |
| (E) **Safety Management – Organisational matters and documentation relating to the safe handling of GMOs** | |
| ☐ | provide documentation of:<br>- the appointment of the Biological Safety Officer (BSO) by the licensee |
| ☐ | the appointment of project leader by the licensee |

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| ☐ | - a description of the tasks of the BSO a.o. with respect to<br>- safety<br>- internal control<br>- accident/incident response and preparedness<br>- internal counselling, advice and education<br>- reporting |
| ☐ | a description of the tasks of the project leader a.o. with respect to:<br>- everyday management<br>- drawing-up and executing work-protocol |
| ☐ | a clear description of the separation of responsibilities and tasks between the BSO and the project leader<br>the discretionary powers/mandate that the BSO has received in order to fulfill his duty |
| ☐ | the status of the BSO should be defined. The job description should include<br>- mechanisms whereby the BSO can report directly to the licensee<br>- instructions that the BSO should hand his function over to a deputy in situations where he is involved in carrying out the practical work himself.<br>- an indication as to the amount of time that the BSO will be allocated to undertake their role |
| ☐ | there should be written procedures that cover the following:<br>- undertaking risk assessments<br>- the training of new staff<br>- emergency procedures including the treatment of spillages with disinfectants<br>- cleaning and disinfection of equipment<br>- transport of GMOs<br>- operation, testing and maintenance of containment equipment<br>- measures for limiting access to facilities<br>- health surveillance of workers |
| ☐ | written instructions should be in the language of the personnel working in the facility |
| ☐ | documents that should be centrally held within an institution undertaking GM work:<br>a) records indicating working areas and their containment levels (these records may include plans of buildings)<br>b) all of the documents listed in point 8 above<br>c) a copy of all risk assessments and notifications<br>d) these records should also cover any sites for storage of GMOs outside of containment facilities<br>e) records of internally organised inspections<br>f) records of incidents and accidents, including evaluation and any remedial action<br>g) a list of other data and documents that are held at |

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| | other locations within the institution |
| ☐ | examples of documents that can be held separately from the main records:<br>a) records of staff involved in GM work indicating their experience and training and the type of projects in which they have been employed<br>b) results of procedures for checking the purity and identity of the GMOs<br>c) results of the testing of containment equipment (e.g. autoclaves and safety cabinets)<br>d) a list of stored GMOs for each storage facility<br>e) work protocols for particular experimental procedures |
| ☐ | Implementation of measures to minimise worker exposure, where work with class 1 GMMs with sensitising or toxic properties is being carried out (e.g. safety cabinet, provision of inhalation equipment when working with sporulating fungi) |
| (F) **Risk Assessment** | |
| ☐ | check that risk assessments have been undertaken for all projects and that individual risk assessments contain sufficient information and have addressed all relevant issues. |
| ☐ | Ensure accurate descriptions/ characterisations of GMO's or groups of GMO's |
| ☐ | description of the host-organism and name of the GMO |
| ☐ | description of the genetic material used to construct this GMO comprising at least the composition and the donors it was derived from |
| ☐ | in case of a Class 1 GMMs (requiring only reporting) gene functions should be documented |
| ☐ | for GMO's requiring notification the number of notification/licence should also be mentioned |
| ☐ | classification of the micro-organism(s) to be used |
| ☐ | classification of the operation |
| ☐ | check that ongoing projects have not diversified into areas of research that were not covered in the original risk assessment (e.g. by the help of a literature search or discussion with other members of staff) |
| ☐ | check that notifications have been made where necessary |
| ☐ | check to see that risk assessments are reviewed by a local safety committee, if necessary |
| ☐ | check that people actually handling a particular GMO are aware of the content of the corresponding risk assessment |

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| **Emergency Responses:** | |
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| ☐ | check information on accidents (reporting of accidents and near – misses and records of corrective actions that have been taken) |
| ☐ | provide written procedures for:<br>- a procedure for internal notification of incidents (e.g. spillages)<br>- a procedure for external notification in case of serious risk<br>- a procedure for incident/accident response (measures, reporting, evaluation)<br>- emergency preparedness actions and countermeasures in case of accidents or incidents |

**IMPORTANT:** Please refer back to your **EPA GMO registry** to see the **conditions** that apply to your lab. Some items that are **optional** for one lab may be **required** for another. This checklist is for guideline purposes only.

Recommendations/Comments:

Next Visit Date: __/__/__

***Copy to be given to Principal Investigator/Responsible person.***