

BIOLOGICAL AND GENETICALLY MODIFIED ORGANISMS

1. University Biosafety Policy

The University's [Biosafety Policy](#) details requirement for carrying out work with biological and genetically modified organisms. Additional documents can be found here:

www.abdn.ac.uk/staffnet/working-here/resources-5988.php#faq39

2. Working with Biological Organisms

A biological agent is defined as any microorganism, cell culture or human endoparasite which may cause infection, allergy, toxicity or otherwise create may create a hazard to human health.

Those in control of work with biological agents must:

- Determine the hazard group for the biological agent. There are four hazard groups 1-4 – see [The Approved List of biological agents - MISC208 \(hse.gov.uk\)](#).
- Determine which of the four the containment levels is required.
- Implement the requirements of the appropriate containment level and, for work at containment level 2 or above, produce local rules to be followed by those who will be involved in the work.

All work will require a suitable and sufficient risk assessment (eg COSHH).

The HSE have also produced guidance on the [Safe working and the prevention of infection in clinical laboratories and similar facilities \(hse.gov.uk\)](#).

3. Old Aberdeen Biological Safety Committee

The School has representation on the Old Aberdeen Biological Safety Committee (OABSC) which meets regularly throughout the year. The terms of reference of the committees covers:

- Deliberate work involving hazard Group 2 and 3 biological agents under the Control of Substances Hazardous to Health (as amended) Regulations (2002), Regulation 7 (10) Schedule 3, "Additional provisions relating to work with biological agents"
- Work involving genetically modified (micro)organisms as defined in the Genetically Modified Organisms (Contained Use) Regulations (2014).
- Work involving animal pathogens under Schedule 1 of the Specified Animal Pathogens Order (2008).
- Work involving agents under Part 7, Schedule 5 of the Anti-Terrorism, Crime and Security Act (2001) (ATCSA).
- Consideration of plant/soil pathogens and appropriate legislation.

For work involving hazard groups 2 & 3 and genetically modified organisms the committee can:

- Give advice on risk assessments conducted under the Genetically Modified Organisms (Contained Use) Regulations.
- Authorise work involving bioagents and GMOs after consideration of:
 - The risk assessments.
 - Laboratory facilities.
 - Staff / student training/supervision.
 - Arrangements for testing and maintaining control & inactivation measures.
- Report to the University Health and Safety Committee on risks posed to people and the environment by biological hazards at the University.

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- Review inspection/audit reports.
- Review accidents concerning bioagents/GMOs.

For work involving hazard groups HG2 & HG3 and genetically modified organisms the OABSC can:

- Give advice on risk assessments conducted under the Genetically Modified Organisms (Contained Use) Regulations.
- Authorise work involving bioagents and GMOs after consideration of:
 - The risk assessments.
 - Laboratory facilities.
 - Staff / student training/supervision.
 - Arrangements for testing and maintaining control & inactivation measures.
- Report to the University Health and Safety Committee on risks posed to people and the environment by biological hazards at the University.
- Review inspection/audit reports.
- Review accidents concerning bioagents/GMOs.

The expectation under COSHH is always that if in doubt check with the experts. In the event of any new work involving bioagents, staff are encouraged to check with the Committee Clerk.

4. Hazard Group Definitions

Biological agents are classified into one of the following four hazard groups:

Group	Definition
HG1	Unlikely to cause human disease.
HG2	Can cause human disease and may be a hazard to employees; it is unlikely to spread to the community and there is usually effective prophylaxis or treatment available.
HG3	Can cause severe human disease and may be a hazard to employees; it may spread to the community, but there is usually effective prophylaxis or treatment available.
HG4	Causes severe human disease and is a serious hazard to employees; it is likely to spread to the community and there is usually no effective prophylaxis or treatment available.

5. Management and Operation of Containment Laboratories

The HSE has published guidance on the [Management and Operation of Microbiological Containment Laboratories Safety](#) .

COSHH specifies the minimum containment levels for each of the four hazard groups.

Containment Level	Definition
CL1	There are no legal minimum containment requirements under COSHH for containment level 1 laboratories. However, the practices, safety equipment and facilities are similar to those for containment level 2, as required by an assessment of the risks, and these should be used in addition to the more general COSHH control measures.

CL2	<p>Containment level 2 (CL2) is designed to protect against biological agents of hazard group 2. As unidentified biological agents may be present in material sent for examination, CL 2 is the minimum standard for handling clinical specimens in a laboratory or decentralised testing station. Therefore, all work in clinical laboratories must be carried out at a minimum of CL2.</p> <p>It is recognised that pathogens may be present in specimens which, had they been identified, would need to be handled at a higher level of containment.</p> <p>If such pathogens are identified during the course of work at CL2, all further work on the specimen or associated specimens must be conducted at a higher containment level, usually CL3 or exceptionally CL4. If higher containment level facilities are not available, the isolate should be sent to an appropriate laboratory, or be destroyed. If it is suspected, for example from a clinical history, that a specimen may contain hazard group 3 biological agents, all work on that specimen or other specimens from that patient must be conducted at CL3.</p>
CL3	<p>Containment level 3 (CL3) is designed for work with biological agents of hazard group 3. To reduce the risk and spread of infection (particularly by inhalation) requirements for CL3 facilities are more stringent. The management, design and operation of microbiological containment laboratories provides full details of these requirements.</p>
CL4	<p>The requirements for a CL4 laboratory, both physical and procedural, are complex. There are no CL4 facilities in the University.</p>

6. Working with Hazard Group 1 Organisms

Microorganisms in Hazard Group 1 are not required to undergo review by the OABSC unless:

- They are genetically modified organisms.
- Specified Animal Pathogens, listed in Part 7 of ATCSA (highly unlikely if they are HG1).
- Plant/Soil pathogens regulated under the Plant Health Orders.

Working with HG1 organisms requires risk assessments to be carried out where they are required including general risk assessments, COSHH, Biological COSHH and GM risk assessments. Biological COSHH risk assessments will help you identify the biological hazards, evaluate the risks and decide on appropriate control measures to enable you to do the work safely and reduce the risks of accidents.

The practices, safety equipment and facilities are similar to those for containment level 2 and these should be used in addition to the more general COSHH control measures.

There must be local rules, risk assessments, controls and standard operating procedures (SOPs) for the work. All workers and visitors must have adequate information, instructions, training and supervision. There should be adequate communication and cooperation between users of shared laboratories in relation to the hazards, risks and control measures required to protect health and safety.

7. Working with Hazard Group 2, 3 & Genetically Modified Organisms

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Work with HG2, HG3 or GMOs represents a significant increase in risk to health and the environment and requires consultation with the OABC and the design and installation of appropriate containment facilities and systems of work

The School presently has no facilities for working with organisms in this grouping. No work can commence on HG2, HG3 or GMOs without first consulting with the OABSC and the Local Safety Coordinator.

Revision Record			
Issue	Name	Date	Reason for review
1	ES	31/5/2022	Transfer from main handbook