

NDMRB-RA-88

Risk Assessment: Bacterial Cell Culture

Scope

Micro organisms will be cultured on nutrient and/or minimal agar with an alternative carbon source. Antibiotics will be used to select for specific genetic constructs. The Advisory Committee on Dangerous Pathogens (ACDP) has classified micro organisms into four categories with category 1 being the least harmful and category 4 being the most dangerous. The ACDP has advised that if the identity of the micro organisms is not known then it must be treated as if it is category 2.

Additionally, "Risk Assessment made under the genetically Modified Organisms (contained use) Regulations 2000" (if the material going to be used for genetic modifications- GM is defined as "The altering of genetic material in an organism in a way that does not occur naturally by mating or natural combination or both) and a separate GMO risk assessment must be filled and signed **before** any work carried out.

If the material is to be obtained from outside the UK or its use is otherwise controlled by MAFF then advice should be sought and licences should be obtained as appropriate.

This replaces TDI-RA-025

Name of assessor:	Andrea Keepence-Keyte	Date of Assessment:	June 2014	Review Date:	Every 3 years
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Risk Matrix:

Risk Matrix		Likelihood			
		High	Medium	Low	Negligible
Consequence	Severe	High	High	Medium	Effectively Zero
	Moderate	High	Medium	Medium/low	Effectively Zero
	Insignificant	Medium/Low	Low	Low	Effectively Zero
	Negligible	Effectively Zero	Effectively Zero	Effectively Zero	Effectively Zero

Risk Assessment:

Hazard (Cause and consequence)	Affected Groups	Existing controls	Risk	Further Action
Working with bacteria in general Main risk is contamination of surroundings.	Staff and students	All staff to be trained before commencing any biological work. Employ good microbiological practices and clean all work surfaces prior to and after work with 70% ethanol solution. All waste to be collected in biohazard bins and subject to autoclave before disposal	Low	None
Kanamycin monosulfate – antibiotic used in bacterial culture COSHH: Toxic and teratogenic	Staff and students	Use in a well-ventilated room, a hood where possible. Wear protective gloves, lab coat and glasses. Dilute working solution (30-100 mg) to be made up to prevent contamination of the air with dust.	Low	None
Ampicillin- antibiotic used in bacterial culture COSHH: Irritant and harmful	Staff and students	Use in a well-ventilated room, a hood where possible. Wear protective gloves, lab coat and glasses. Dilute working solution (30-100 mg) to be made up to prevent contamination of the air with dust.	Low	None
Tetracyclin - antibiotic used in bacterial culture COSHH: Irritant and harmful, toxic possible teratogen	Staff and students	Use in a well-ventilated room, a hood where possible. Wear protective gloves, lab coat and glasses. Dilute working solution (30-100 mg) to be made up to prevent contamination of the air with dust.	Low	None
Chloroamphenicol	Staff and students	Use in a well-ventilated room, a hood where possible. Wear protective gloves, lab coat and glasses. Dilute working solution (30-100 mg) to be made up to prevent contamination of the air with dust.	Low	None
Disposal of cells & contaminated material/equipment. Environmental exposure, spread to other areas.	Staff and students	All cultures/contaminated materials to be decontaminated with Virkon for a period of time to ensure no risk of live cells remains. All associated glassware and plastic waste to be autoclaved.	Low	None
Spread of bacteria causing contamination of work area	Staff and students	All surfaces regularly decontaminated, cultures contained within securely sealed vessels. Wash hands before leaving the lab.	Low	None
Laboratory Glassware – broken causing cuts	Staff and students	Disposal in a dispo jar, subject to autoclaving before disposal through the normal channels. Take extra care when handling so not to break	Low	None
IPTG (Isopropyl β-D-1-thiogalactopyranoside) COSHH: Irritant	Staff and students	Wear protective gloves, lab coat and glasses.	Low	None

All GMO work must have a separate GMO risk assessment carried out and signed off before work commences

Signed By Author:

Approved by (sign and print):

Reviewed by:

Review date: