

Use this form to assist you to complete risk assessments for hazardous activities and processes. Any serious or ongoing hazards should be reported via [RiskWare](#) to ensure that appropriate corrective actions are tracked and completed.

Faculty/School:	Faculty of Science /	Initial Issue Date: Oct 2015
	School of Molecular Bioscience	Next Review Date: Oct 2016
Risk Assessment Reference Number:	SMB 001	
Risk Assessment Name:	Agarose gel electrophoresis	
Prepared by:	JOSEPH DIMAURO	
Responsible supervisor/s:	Markus Hofer (Chair WHS committee) & Dianne Fisher (Safety Officer)	

Identify the activity and the location	Identify who may be at risk This may include fellow workers, students, visitors, contractors and the public
Activity or process: The separation and staining of DNA fragments using electrophoresis.	Persons at risk: All staff and students at SMB who run DNA electrophoresis.
Location: Research and Teaching Laboratories	Risk assessment team (Who was consulted?): WHS committee at SMB

List of Legislation, Code of Practice, Australian Standards, Guidance Materials used to determine control measures
SAFE WORK PROCEDURE SWP001.3. SDS for ethidium bromide and other hazardous substances

Risk Assessment Methodology
<p>Assessing the risk is a brainstorming exercise, which is most effectively carried out in a team environment with the people required to complete the activity or process. Most activities or processes are broken down into a variety of separate tasks. For each task, consider the hazards, the potential harm or negative outcomes and the conditions required for those negative outcomes to occur.</p> <p>Whenever assessing the health and safety risks associated with a task, always consider the following primary risk factors.</p> <ul style="list-style-type: none"> • The physical activities required to complete the task e.g. repetitive movement, high force, physical exertion, awkward posture • The work environment e.g. lighting, work layout, traffic, thermal comfort, working in isolation • The nature of the hazard itself e.g. working with chemicals, microorganisms, radiation, machinery, potentially violent clients • The individual workers involved, e.g. level of training, skills, experience, health, age, physical capacity <p>The information gathered from the risk assessment process must be used to develop a Safe Work Procedure (SWP).</p>

Task or scenario	Hazard/s	Associated harm, e.g. what could go wrong?	Existing Risk Controls	Current risk rating Use the Risk Matrix	Any additional controls are required? ¹	Residual risk rating Use the Risk Matrix
Heating agarose solution	Spill	Superheated agarose could be spilled onto skin, face and eyes causing serious burns.	<ol style="list-style-type: none"> 1.Wear appropriate PPE. 2.Don't overfill flask. 3.Apply medium heat. 4.Swirl agarose during heating. 5.Refer to SWP001.3 	LOW LEVEL 6	NO	NA
Gel electrophoresis	Electrocution	Potential for serious electrical shock due to leaking chamber, faulty or corroded electrode cables or faulty power supply.	<ol style="list-style-type: none"> 1.Wear appropriate PPE. 2.Inspect Leads for defects. 3.Ensure area free of leaks. 4.Chamber lid secure 5.Refer to SWP001.3 	LOW LEVEL 6	NO	NA
Preparing ethidium bromide solution	Spill	Potential for direct contact with skin and eyes with harmful side effects. Ethidium Bromide is a potential mutagen.	<ol style="list-style-type: none"> 1.Wear appropriate PPE. 2.Work in Fume Hood. 3.Only use liquid stock. 4.Use filter tips only. 5.Refer to SWP 001.3 & SWP034.4. 	MEDIUM LEVEL 5	Use safer alternatives for ethidium bromide where possible	LOW LEVEL 6
UV light use	Exposure	Potential for exposure to skin and eyes. May cause tissue burns after a few seconds. May cause blindness upon prolonged exposure to eyes. Symptoms may not be immediately painful or visible.	<ol style="list-style-type: none"> 1.Wear appropriate PPE. 2.Refer to SWP001.3 3. Use of Gel doc for visualization (Gel doc has safety switch to prevent accidental UV exposure) 	LOW LEVEL 6	NO	NA

¹ Always consider whether or not it is possible to eliminate the hazard or hazardous task altogether. If this is not possible, refer to the [hierarchy of risk controls](#).



Implementation of Additional Risk Controls				
Additional controls needed	Resources required	Responsible person	Date of implementation	RiskWare Reference
Safe Work Procedure (SWP)	DONE/time	Supervisor	17.2.15	N/A
Train workers to complete process in accordance with SWP	DONE/time	Supervisor		N/A
University and local WHS training	DONE/time	Supervisor		N/A

List emergency controls for how to deal with fires, spills or exposure to hazardous substances and/or emergency shutdown procedures

For spills and burns wash area with running water, and then seek medical advice.

For electrocution, switch off all power, apply first aid and call for medical assistance.

For inhalation, seek medical assistance.

REVIEW

Scheduled review date	1 year	2 years	3 years
Are control measures in place (YES/NO)	YES		
Are controls eliminating or minimizing the risk (YES/NO)	MINIMISING		
Are there any new problems with the risk (YES/NO)	NO		
Reviewed by:			
Actual Review date:			



Risk Matrix.

			Potential Consequences				
			L6	L5	L4	L3	L2
			Minor injuries or discomfort. No medical treatment or measureable physical effects.	Injuries or illness requiring medical treatment. Temporary impairment.	Injuries or illness requiring hospital admission.	Injury or illness resulting in permanent impairment.	Fatality
			Not Significant	Minor	Moderate	Major	Severe
Likelihood	Expected to occur regularly under normal circumstances	Almost Certain	Medium	High	Very High	Very High	Very High
	Expected to occur at some time	Likely	Medium	High	High	Very High	Very High
	May occur at some time	Possible	Low	Medium	High	High	Very High
	Not likely to occur in normal circumstances	Unlikely	Low	Low	Medium	Medium	High
	Could happen, but probably never will	Rare	Low	Low	Low	Low	Medium

In signing this section the assessor agrees that the following persons are competent in following this Risk Assessment.

Name	Signature	Date Competent	Name of Assessor/Authoriser	Assessor/Authoriser signature