

Name	Thomas lab - CMM - Intracampus transport of biological samples (bacteria) in fixative	Managed (Current) Rating	Target (Residual) Rating
		Low	Low
Location	AIBN Building Room 112 (01.0075.1.112)		
Location Category	Facility - Laboratory		
Business Unit		Last Review Date	Risk Owner
	Frazer Institute	6/12/2023	Anne-Sophie Brigitte Marie Bergot
Risk Assessment Team		Risk Approver	
		Ranjeny Thomas	
Additional Notes			
Describe task / use			
	<p>CMM clients process biological samples in lab of origin. The samples are transported to CMM laboratories in aldehyde fixatives for further processing and viewing in SEMs or TEMs. Only small volumes (<5ml) of dilute fixative (2.5% glutaraldehyde or 4% formaldehyde) are used. Samples are transported in double sealed container. Second container to be impact resistant plastic. This is in addition to an "esky" or cooler. Samples must be accompanied by a mini spill kit.</p> <p>Sample description: Non-pathogenic microbiota bacteria. Strains have either previously been isolated from, or will be isolated from gut microbiota. May include Actinobacteria/Bacilli/Bacteroidia/ Clostridia/ Cyanobacteria/ Deltaproteobacteria /Gammaproteobacteria /Methanobacteria /Synergistic /Thermoplasmata /Verrucomicrobiae. Species determined by 16S sequencing. In particular, bacteria frequently used in this project are derived from the Charles River Altered Schaedler Flora (ASF) mini consortium that comprises Parabacteroides goldsteinii (ASF519), Lactobacillus murinus (ASF361), Clostridiales sp. (ASF502) and Mucispirillum Schaedleri (ASF457).</p>		

Any species that are known to have caused disease in humans, including pathogenic Clostridia species will not be used.

Bacteria are fixed in 2.5% glutaraldehyde or 4% formaldehyde prior to transportation to CMM.

Thomas lab UQ Biosafety IBC/1356/UQDI/TRI/2021 Approved (Expires : 30/08/2026) under Non-pathogenic microbiota bacteria description

Risk Factors

Risk Factor	Chemical/Toxins/Poisons/Gases
Description	
<p>Nonhazardous samples in aldehyde fixatives are transported to CMM laboratories for further processing. If the vial containing the sample is dropped and breaks, person may make direct contact with sample in fixative or with the fixative, either liquid or vapour.</p>	<ul style="list-style-type: none"> ● Absorption/skin mucosa -- Yes ● Accumulative effects -- No ● Carcinogen -- No ● Chemical splash/spill -- Yes ● Corrosive substance -- Yes ● Compressed gas -- No ● Cryogenic substance -- No ● Dangerous when wet -- No ● Explosives/explosive atmosphere -- No ● Flammable liquid -- No ● Flammable solid -- No ● Harmful irritant -- Yes ● Incompatible with other chemicals -- No ● Ingestion -- No ● Inhalation -- Yes ● Needle stick or sharps injury -- No ● Oxidiser -- No ● Poison -- No ● Sensitising agent -- Yes ● Serious irreversible affects -- No ● Spontaneously combustible -- No ● Storage hazard -- No ● Toxic substance/toxin -- Yes

Low	Low
Existing Controls	Proposed Controls
<ul style="list-style-type: none"> • • 2 - Substitution: After required fixation time, replace aldehyde fixative with non-hazardous sodium phosphate or sodium cacodylate buffer before transport. • 3 - Isolation: Samples in buffer are transported in vials in sealed double containers. These containers are then placed in an esky. • 4 - Engineering: Samples are transported in small volumes of fixative (total is <5ml in all vials). • 5 - Administration: Written emergency procedures: Risk assessment containing spill procedures available in lab. Good housekeeping practices: Only small volumes of dilute fixative supplied for use. Spill kit available. All work areas to be cleaned after use. All spills to be cleaned up immediately. Good personal hygiene practices: Through washing of hands before leaving lab. Supervision: Assistance provided for first use of procedure and continued until competent. Waste: All chemicals to be placed in substance specific waste container in each fumehood. Waste to be collected by Chemwaste. Spills: Clean up only if safe to do so (be aware of vapours and ensure adequate airflow). Wear nitrile gloves and protective eyewear. Absorb remaining solution with vermiculite or similar absorbent material. Seal in labelled plastic bag for disposal. First Aid: Only small volumes of fixative are used so the most likely injury from short term contact with samples in fixative is minor chemical burn. Treat symptomatically. • 6 - PPE: Nitrile gloves to handle samples when not in double sealed container and when cleaning up spills. Enclosed shoes 	

Appendix

Risk Matrix Level

Low	Task can proceed upon approval of the risk assessment by relevant Line Manager or supervisor is received.
Medium	<p>Task can proceed upon approval of the risk assessment by relevant Line Manager or Supervisor is received.</p> <p>It is recommended that a plan is developed to reduce the risk within a reasonable timeframe.</p>
High	Task can only proceed in extraordinary circumstances and provided there is authorisation by relevant Head of Function and a plan is in place to promptly reduce the risk to an acceptable level.
Extreme	Task must not proceed. Appropriate and prompt action must be taken to reduce the risk to an acceptable level.