Task Risk Assessment (Detailed)

This Task/Process Risk Assessment is not Complete

Printed By: Amanda Jones

Task/Process Details

Task/Process ID: 62317

Name: Working with toxins/venoms in the laboratory

Effective Risk Level: Low

Action: Risk is normally acceptable

Author: Amanda Jones

Last Updated By: Amanda Jones On 10/11/2015 1:18:47PM

Audited By:

Audit Date:

Workplace Location of the Task/Process

Campus: St Lucia Campus

Faculty/Division:

School/Centre:

Other: Your Organisational Unit

Workplace: Your workplace/lab

Supervisor:

Status: Not Approved

Risks Associated with this Task/Process or Situation

Risk Situation: **Envenomation**

Process\Job Desc: Envenomation will only occur through a needle stick and then depression of the syringe to deliver venom.
Venom in syringes should be at concentrations well below an estimated human lethal dose in a volume less than 100µl (such as 100 mg/ml for highly toxic venoms such as Naja naja which has an estimated human lethal dose of 10 mg).
As needles are only used in situations such as in vivo testing, the amounts being worked with at any given time are less than the estimated human lethal dose (such as a typical rat injection would be only 10-50 µg).

Training Required: Yes

Energy Source: Chemical

Current Controls: *Using appropriate personal protective equipment, including safety glasses, appropriate gloves (consider puncture proof gloves), lab coat and enclosed footwear.
*Following stanard operating procedures/safe operating procedures/protocols
*Training from an experienced supervisor and supervision until deemed competent.
*Storing animal venoms/toxins in clearly labelled and sealed plastic containers, never glass.
*Emergency procedures including contact details of first aiders and SDS if available.

Hazard Event: Needle stick injury and then depressing plunger or deep puncture wound from broken glass vial containing venom/toxin.

Incident Category: Single contact with chemical or substance

Assessment Date: 04/11/2015

Risk Analysis

Consequence: Very Serious — **Rationale:** Envenomation from highly toxic venoms/toxins can lead to death.

Exposure: Very Rare — **Rationale:** No envenomation incidents have been recorded in UQ labs.

Probability: Remotely possible — **Rationale:** It is always possible if someone is distracted that the event described could happen.

Risk Level: **Low** — **Action:** **Risk is normally acceptable**

No Additional Controls

Risk Situation: **Allergy induction**

Process\Job Desc: Frequent or chronic exposure to dried venoms/toxins can result in development of an allergy. This may only cause sneezing and other 'hay-fever'-like symptoms in some persons, it may result in anaphylactic type reaction in others.

Training Required: Yes

Energy Source: Chemical

Current Controls: *Avoid handling aerosolised venoms/toxins.
*Handling quantities >20mg must be done in a fume hood or while wearing a P1 half face particulate filter.
*Training by an experienced supervisor and supervision until deemed competent.
*Exclusion of any work who displays symptoms of allergy induction.
*Access to first aid including Epipen if identified as required (e.g. worker with known allergies present)
*Emergency procedures including contact details of first aiders and SDS if available.

Hazard Event: Inhalation of aerosolised or dried toxin/venom by a worker with symptoms of allergy induction or who is sensitive to the toxin/venom.

Incident Category: Long term contact with chemical or substance

Assessment Date: 04/11/2015

Risk Analysis

Consequence:	Very Serious	**Rationale:**	Untreated allergy induction could result in anaphylactic type reaction, which if not treated quickly could result in death.
Exposure:	Rare	**Rationale:**	No incidents reported for UQ labs, but has been reported elsewhere.
Probability:	Remotely possible	**Rationale:**	It is possible a new worker could have be extremely sensitive to a toxin or venom and not know until they come into contact with it.
Risk Level:	**Low**	**Action:**	**Risk is normally acceptable**

No Additional Controls

Risk Situation: **Handling of commercial and non-commercial sources of animal venoms/toxins**

Process\Job Desc: Applicable to all processes where animal venom, venom extracts, or their toxic components are handled (e.g. organ bath studies, HPLC, SDS PAGE analysis whole animal studies etc.). The animal venom/toxin may be in liquid or solid (lyophilized) form. Animal venoms could be from all types of toxic animals: arthropods, cnidarians, echinoderms, gastropods, fishes, mammals, reptiles or sponges.

Training Required: Yes

Energy Source: Chemical

Current Controls:
* Training from an experienced supervisor and supervision until deemed competent.
* Caution used at all times when handling animal venoms/toxins.
* Using appropriate personal protective equipment, including safety glasses, appropriate gloves, lab coat and enclosed footwear.
* Do not breath dust, use only in well ventilated areas, wear protective breathing apparatus when handling highly toxic venoms e.g. jelly fish venoms.
* avoid creating aerosols and fine dust.
* Store animal venoms/toxins in clearly labelled and sealed containers in a well ventilated place.
* For commercially available venoms/toxins, follow the SDS (if available) for information on hazards, safe handling and storeage.
* Follow standard operating procedures/ safet oeprating proecdures/protocols.
* Have emergency procedures, including contact details of first aiders available.

Hazard Event: Inhalation of aerosolised/dried animal venom/toxin.

Incident Category: Single contact with chemical or substance

Assessment Date: 10/11/2015

Risk Analysis

Consequence: Very Serious

Rationale: Inhalation could lead to intense pain, swelling, vomiting, infection, necrosis, haemorrhaging of internal organs/breakdown, blood cells destroyed, respiratory collapse, paralysis, death.

Exposure: Very Rare

Rationale: No incidents have been recorded in UQ labs.

Probability: Remotely possible

Rationale: All handlers of venoms/toxins are required to undertake training, but accidental contact may occur.

Risk Level: **Low**

Action: **Risk is normally acceptable**

No Additional Controls

Chemical Risk Assessment Details

Substances: (1)

Substance Name: Venom
UN Number:
Form: N/A
Concentration: dilute
DG Class: 6 - Toxic or infectious
Hazardous Substance: Yes
Storage Location: room number

Health Effects		Hazardous Reactions		Route of Exposure		Evidence of Exposure	
NIL:	No	NIL:	Yes	NIL:	No	NIL:	No
Irritant:	No	Explosive:	No	Inhalation:	No	Presence of dusts/fumes/odours:	No
Corrosive:	No	Flammable:	No	Skin absorption:	No	Leaks/spills/residues:	No
Sensitiser:	Yes	Peroxide forming chemicals:	No	Eye contact:	No	Worker symptoms and complaints:	Yes
Asphyxiant:	Yes	Water reactive:	No	Ingestion:	No	Previous incidents and exposures:	No
Toxic:	Yes	Oxidising agents:	No	Needlestick:	Yes	Neighbouring activities impact:	No
Carcinogenic:	No	Cryogenic:	No				
Mutagenic:	No	Pyrophoric:	No				
Teratogenic:	No						
Cytotoxic:	Yes						
Neurotoxic:	Yes						
Reproductive:	No						

Risk Control

Elimination/Substitution:

Engineering Controls: Biosafety cabinet or cytotoxic cabinet

Effectiveness: Effective and maintained well

Administrative Controls: Written safe working procedure
Good housekeeping practices

Good personal hygiene practices

Supervision

Written emergency procedures with contact details of first aiders and SDS if available

Effectiveness: Effective and maintained well

Training Controls: Training by experienced supervisor
Completion of online Biosafety Training

Effectiveness: Effective and maintained well

PPE Controls: Appropriate Gloves
Eye protection

Footwear

Effectiveness: Effective and maintained well

Waste Disposal: All sharps must be disposed of via appropriate sharps containers.
Other waste should be appropriately decontaminated and then disposed of in clinical waste stream.

Storage Incompatibilities:

Safety Instructions:

Risk Determination

Exposure Frequency: Very Rare

Risk Level: **Significant but controlled**

Air Monitoring: No

Health Surveillance Req: No

Schedule 10: No **Carcinogen Authority No:**

No Task Readers

No Training Specified