**EXPOSURE CONTROL PLAN**

##### FOR Hazardous Drugs (xxx, XXX)

***[INSTRUCTIONS:***

***1. Review and edit the template ECP to include the hazardous drug(s) being used.***

***2. Instructional*** *[text in grey and within square brackets]* ***can be deleted.***

***3. Contact OHSE for assistance and approval.]***

1. **PURPOSE**

This plan has been developed in accordance with the requirements outlined in the WorkSafeBC Occupational Health and Safety Regulations sections [6.42-6.58](http://www2.worksafebc.com/publications/OHSRegulation/Part6.asp#SectionNumber:6.42). The purpose of this plan is to identify, and mitigate any risks of exposures to hazardous drugs that researchers may use in the course of their research.

1. **RESPONSIBILITIES**
   1. **Employees or Students (Users):**

* adhere to all safety policies laid out by their supervisor, UVic Occupational Health, Safety & Environment and WorkSafeBC
* declare all hazardous drug use
* read all SDS/data sheets
* take all reasonable and necessary precautions to prevent exposure, spills or other accidents; report all incidents (even the very minor)
  1. **Supervisor:**
* provide users with adequate training and personal protective equipment
* make safety information available to users
* perform risk assessments
* perform lab inspections
* ensure compliance with regulations

1. **HEALTH HAZARDS**

[WorkSafeBC](https://www.worksafebc.com/en/law-policy/occupational-health-safety/searchable-ohs-regulation/ohs-regulation/part-06-substance-specific-requirements#SectionNumber:6.42) defines hazardous drugs as a drug that;

(a) has one or more of the following characteristics:

(i) carcinogenicity;

(ii) teratogenicity;

(iii) genotoxicity;

(iv) reproductive toxicity;

(v) organ toxicity at low doses,

(b) is a new drug that mimics, in structure or toxicity, an existing drug known to be a hazardous drug according to the characteristics listed in paragraph (a), or

(c) is identified in the NIOSH list as a hazardous drug

* 1. **Exposure routes**

Typical exposure routes for hazardous drugs may include accidental needle-stick injury, eye or mucous membrane-splash accidents, skin contact, animal bites and aerosols.

* 1. **Symptoms**

Acute symptoms of exposure include nausea, rashes, hair loss, liver and kidney damage, hearing loss and cardiac and hematapoetic toxicities.

**4.0 RISK IDENTIFICATION, ASSESSMENT, AND CONTROL**

*[Update as appropriate]*

Employees or students may use cytotoxic drugs as part of their research. This work may occur in the research labs or in the animal care or the aquatics facilities.

**4.1 Job Classification:**

*[Update as appropriate]*

The job classifications that may be exposed to cytotoxic drugs may include research scientists, Principal Investigator, post-doctoral fellows, research assistants, visiting scientists, technicians, graduate and undergraduate students and animal care staff.

**4.2 Risk of Exposure:**

*[Update as appropriate]*

The risk of exposure to hazardous drugs is dependent upon the work occurring in the lab. The risk level is determined based on typical frequencies of exposure, severity of exposure, the type of work and protective equipment available. Common tasks where hazardous drugs are used include weighing the drug, diluting the drug, administering the drug via pipette or needle and disposing of the drug or drug contaminated waste.

**4.3 Grouping**

[*Grouping can save time as there are cases where multiple hazardous drugs can be treated within the same ECP and SWP.*

*Provide rationale for the grouping. Must be able to demonstrate rationale (e.g. describe the drugs as having similar toxicological effects (as applicable), and the forms of administration are the same). If no grouping, delete section or type no grouping]*

*Note for reproductive toxins:*

*WSBC 6.47: If a worker is or may be exposed to a hazardous drug that is a reproductive toxin, an employer must develop (a) a written policy about the availability of protective reassignment, and (b) a procedure for determining if protective reassignment is appropriate for workers who advise the employer of a pregnancy or an intent to conceive a child.]*

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| **Hazardous drug** | **Harmful health effect(s), including both acute and chronic effects and reproductive effects** | **Will exposure to multiple hazardous drugs increase the risk of harmful health effects?** | **Link to SDS** |
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**4.4 Risk Assessment**

**Risk assessment table**

*[Example of a risk assessment table.*

*Please delete tasks that are not planned and add tasks that will be planned.*

*Ensure location of tasks (e.g. Class II B2 BSC, fume hood, etc. is described in controls.*

*Update entire table as appropriate.]*

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| --- | --- | --- | --- | --- | --- | --- |
| **Task** | **Potential Hazards** | **Risk Level** | **Controls** | **Quantity/con-centration of hazardous drug** | **Frequency and duration of exposure** | **Will another worker in the same work area also be at risk of exposure to the hazardous drug(s)?** |
| Weighing drug | Aerosolized powder, skin contact | Moderate | Respirator, gloves, moisture resistant gown, Class B2 BSC |  |  |  |
| Diluting/mixing drug | Aerosols, skin contact | Moderate | Respirator, gloves, moisture resistant gown, Class B2 BSC |  |  |  |
| Priming needle | Sharps, aerosols, skin contact | Moderate | Respirator, gloves, eye protection, moisture resistant gown, Class B2 BSC |  |  |  |
| Administer Drug - pipette | Aerosols, skin contact | Moderate | P100 respirator, gloves, eye protection, moisture resistant gown |  |  |  |
| Administer Drug - needle | Sharps, aerosols, animal bites, skin contact | High | P100 respirator, gloves, eye protection, moisture resistant gown |  |  |  |
| Dispose of waste | Skin contact | Low | P100 respirator, gloves, eye protection, moisture resistant gown |  |  |  |

**4.5 Risk Control**

*[Update as appropriate]*

**4.5.1 Administrative Controls:**

1. An employer must ensure that a worker who may be exposed to hazardous drugs at a workplace is effectively supervised and required to follow all safe work procedures applicable to the workplace.
2. In addition to this exposure control plan, the following documents will be available for workers: SDS, standard operating procedures for safe handling of hazardous drug materials, spill response plan and exposure log records.
3. All containers holding a hazardous drug will be labeled with the name of the drug, statements regarding adverse effects, where to go for more information and what to do in the event of any emergency. In addition all shelves, fridges, freezers and cupboards where hazardous drugs are stored will be properly labeled with cytotoxic hazard labels and signs.
4. An inventory of hazardous drugs used in the laboratory will be made available and regularly updated.
5. A record of potential exposure of all those preparing and administering hazardous drugs will be maintained by the supervisor and kept on file for 10 years following employment.
6. If an employee/student is pregnant or planning on becoming pregnant, protective reassignment will be available.
7. Hazardous drug spill kits will be available in any areas where hazardous drugs are received, prepared, used or stored. These locations will be marked with appropriate signage.
8. All materials and waste contaminated with hazardous drugs will be collected and disposed of using approved methods. These methods include collecting contaminated waste in white puncture-proof, leakproof, cytotoxic waste pail.

**4.5.2 Engineering Controls:**

a) Class II B2 biological safety cabinets will be used for all mixing,

preparation and priming of administration sets with a hazardous drug. These cabinets will be located in a centralized area and labelled for cytotoxic use. The biological safety cabinet will vent directly outside, will not recirculate into any work area and will be equipped with a continuous monitoring device for airflow.

1. Only luer-lock connections will be used in the preparation and administration of hazardous drugs.

**4.5.3 Personal Protective Equipment:**

It is the responsibility of both the employee/student and supervisor to ensure that proper personal protective equipment (PPE) is worn when handling hazardous drugs or hazardous drug contaminated materials. PPE will not be worn outside the hazardous drug preparation, administration or storage area. Used disposable PPE will be handled and disposed of as cytotoxic waste.

Personal protective equipment such as gloves, respirators and eyewear are readily available. The following must be worn when there is risk of contact with a cytotoxic drug:

1. Gowns:

Moisture-proof disposable gowns with cuffs must be worn. Lab coats will not be used. Gowns will be changed immediately if they are contaminated.

1. Gloves:

Non-permeable gloves specific for use with hazardous drugs must be worn at all times when handling hazardous drugs or waste that may contain hazardous drugs. For most cases gloves made of latex, nitrile, neoprene or polyurethane are sufficient when handling hazardous drugs. Vinyl gloves will not be worn. Gloves will be greater than 0.1mm in thickness, and of sufficient length to cover the cuff of gown.

Gloves will be changed immediately and hands will be washed if the gloves become compromised or contaminated.

1. Eye Protection:

If there is any risk of eye contact, safety glasses, goggles and/or full face shields are required to be worn.

1. Respirator:

An P100 respirator is to be worn if there is any chance of aerosol risk. Before using a respirator, annual fit-testing and training will be conducted and documented.

**5.0 EDUCATION AND TRAINING**

1. Researchers involved in any aspect of hazardous drug use must have completed formal cytotoxic hazards training through [Occupational Health Safety and Environment](https://www.uvic.ca/ohse/training/research-safety/biosafety/index.php#acc-cytotoxic-drug-awareness), and be trained in the lab specific policies and procedures.
2. Instruction and training must address the following;
   1. known health effects, including reproductive effects, caused by exposure of the hazardous drug
   2. the applicable work procedures, including procedures to be followed in the event of a spill, uncontrolled release or accidental exposure.

**6.0 DOCUMENTATION**

* Hazardous drug list (Appendix 1)
  + Develop a written list (reviewed annually) of all hazardous drugs that a worker may be exposed to at a workplace. List to be made available for reference by workers at each workplace to which the list applies
* Record of training
  + Employer must keep a record of all instruction and training provided (Appendix 2).
* Record of hazardous drug preparation and administration (Appendix 3)
  + Must be kept for the period of employment to whom the record relates and for 10 years after then end of the workers employment
* Record of potential exposure (Appendix 4)
  + A record of potential exposure of all those preparing and administering hazardous drugs will be maintained by the supervisor and kept on file for 10 years following employment.

**7.0 WRITTEN WORK PROCEDURES (Safe Work Plans)**

1. The employer must ensure that work procedures are readily available for reference by workers at each of the workplaces to which the work procedures apply.

**Approved safe work procedures for work with hazardous drugs**

*[Complete table for all hazardous drugs and SWPs associated with this ECP]*

|  |  |  |
| --- | --- | --- |
| Hazardous Drug | Approved SWP(s) | Date of last approval |
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1. **INCIDENCES**

In case of accidental exposure, decontamination of people and first aid treatment are the priority over containment and clean-up of any spill. Spill clean-up procedures are available in the cytotoxic spill clean-up SWP.

If you suspect you may have been exposed to a cytotoxic drug call 911 to summon an ambulance if a medical emergency and seek medical attention. Symptoms of exposure include skin irritation or depigmentation, respiratory tract irritation, blurring of eyes or tearing, pain, fever and in case of ingestion possible nausea, vomiting and diarrhea.

**8.1 Skin Contamination:**

If your skin was exposed to any hazardous drugs remove any contaminated clothing and wash the area thoroughly with soap and running water for at least 15 minutes. Then seek medical attention.

**8.2 Skin Puncture:**

In case of skin punctures, wash the puncture site thoroughly with soap and

running water for 15 minutes and allow wound to bleed freely. Then seek medical attention.

**8.3 Eye and Mucous Membrane Exposure:**

In case of eye contact, flush the affected eye(s) for a minimum of 15 minutes and seek medical attention.

**8.4 Inhalation/ingestion:**

If inhaled, move to a location with fresh air. Immediately seek medical attention.

All incidents and accidents will be reported and investigated so that measures can be taken to prevent further incidents or accidents. A WorkSafeBC claim will be initiated for any occupational exposures and the Departmental Incident and Investigation Report form will be completed.

1. **Annual review**

This exposure control plan will be reviewed annually and updated as necessary

Department: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Signature of Supervisor: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Exposure Control Plan Revision History

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|  | Revision date | Author | Position |
| 1. |  |  |  |
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Reason for Revision / Summary of Changes

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| Revision Date | Page/Section | Change/Justification |
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Record of Exposure Control Plan Annual Review

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| Name | Date | Signature incumbent | Signature PI / person responsible |
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APPENDICES

Appendix 1: Hazardous drug list.

*[This list is to be available for reference to all workers in all workplaces where hazardous drugs are used.]*

Date list created/updated: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| Hazardous drug | Associated ECP | Associated SWP(s) |
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Appendix 2: Hazardous Drug Training Record

*[One sheet for each employee/student. Save as digital or hard copy. ECP, associated SWP(s), and SDS must be signed off on. Also ensure OHSE Cytotoxic Drug course has been completed.]*

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| --- | --- | --- | --- |
| Employee/student name |  | Supervisor name |  |
| Department |  | Position |  |

Each Employee/Student and their Supervisor must complete this checklist before they begin working with hazardous drugs. Once the employee/student has read, reviewed and clearly understood a procedure they may sign the box associated with that safe work procedure. Both the Employee/Student and the Supervisor will sign the bottom of this form. Please retain a copy of this document for your records.

Has completed [OHSE Cytotoxic Drug Awareness Course](https://www.uvic.ca/ohse/training/research-safety/index.php) : \_\_\_\_\_\_\_\_

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| **Hazardous Drug** | **Associated ECP, SWP(s), or SDS** | **Employee Sign-off** |
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Employee/Student Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Supervisor Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Appendix 3: Record of hazardous drug preparation and administration

*[Have the sheet available to be filled out in any area where preparation or administration occurs (e.g. at Class II B2 BSC). Remind all personnel that they must complete the form. Completed copes must be stored.]*

Record each preparation or administration of hazardous drug. Let supervisor or lab manager know if new sheet required.

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| Date | Hazardous Drug | User’s Name | Amount Used | State | Location | Notes |
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State: L-Liquid, P-Powder, O-Other (please specify)

Appendix 4

Record of Potential Exposure to Cytotoxic Drugs

*[Maintained by the supervisor and kept on file for 10 years following employment]*

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| Date | Drug | User's Name | Amount Used | State | Location |
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State: L-Liquid, P-Powder, O-Other (please specify)