

## **Standard Operating Procedures for Cytotoxic Agent use in Animals.**

### **For an Emergency refer to the Safety Data Sheet**

#### **Hazards:**

Possible carcinogen- may cause cancer in humans

Possible teratogen- may cause birth defects

Possible reproductive hazard- may affect the ability to have healthy children

Chemotherapeutic drugs are by nature cytotoxic and often carcinogenic. Studies that use chemotherapeutic drugs in animals can put researchers and DLAM staff at risk from acute and chronic exposure.

All personnel who handle chemotherapy drugs or any other cytotoxic drugs should follow the methods outlined in this document.

Chemotherapy drugs include, but are not limited to: Amascrine, Bleomycin, Bromo-Deoxyuridine (BrdU), Carboplatin, Carmustine, Chlorambucil, Cisplatin, Cyclophosphamide, Cyclosporin A, Dacarbazine, Dactinomycin, Daunorubicin, Docetaxel, Doxorubicin, Epirubicin, Etoposide, Ifosfamide, Mechlorethamine, Methothrexate, Mithramycin-A, Mitomycin-C, Oxaliplatin, Paclitaxel, Streptozotocin, Tamoxifen, Topotecan, Vincristine, Vinorelbine.

#### **Chemical handling instructions:**

##### Personal Protective Equipment (PPE):

Those handling cytotoxic agents must wear chemically resistant gloves (not latex), lab coat, eye protection, and appropriate lab attire (pants, closed-toe shoes). Double gloving is recommended when working with high concentrations or during long exposure times so that the outer gloves can be changed frequently.

##### Preparing cytotoxic agent solutions:

1. Cytotoxic agent solutions must always be prepared inside a certified chemical fume hood or ducted biosafety cabinet.
2. The work area should be prepared by laying down an absorbent work surface with the absorbent material facing up. Tape the edges of the absorbent material to prevent its movement in the fume hood.
3. Care should be taken to not generate any aerosol during the preparation or injection procedure. Always wash hands after removing gloves following handling cytotoxic agents.
4. To clean areas where cytotoxic agents have been handled, wash the area with soap and paper towels after removing the absorbent material.
5. Any contaminated paper towels should then be placed into a container for hazardous waste, appropriately labeled for waste removal and placed in a designated area for disposal.

##### Waste Disposal:

1. Any leftover/unused cytotoxic agents should be collected for disposal as chemical waste.
2. All disposable materials contaminated with the chemical and residual chemical must be disposed of as hazardous waste.

3. Re-useable glassware and other non-porous materials can be decontaminated by soaking in 10% bleach for 24 hours.
4. Used needles/syringes should be disposed in a sharps container destined for incineration.
5. Contact the Safety Office at x2697 or [SafetyOffice@unthsc.edu](mailto:SafetyOffice@unthsc.edu) for hazardous waste pickup.

### **Animal Experiments**

Research staff must inform DLAM in advance that cytotoxic agents will be used, and arrangements will be made for appropriate animal housing.

#### Injecting animals with cytotoxic agents:

1. Animals must be injected with cytotoxic agents within a Class II Type B Biosafety cabinet or designated fume hood.
2. Animal handler must wear PPE as above with a 2nd pair of gloves (double-glove).
3. All needles must be disposed of in sharps container – do not recap or bend needles.
4. Dispose of waste as described above.

#### Cage handling:

1. DLAM staff should be made aware of cytotoxic agents use and cage cards should be labeled with "Cytotoxic agents" after injection.
2. Animal cages and bedding are considered hazardous for a minimum of 3 days (36 hours) after an injection. The first cage change after each drug administration is to be done no sooner than 3 days after the administration.
3. The bedding is considered contaminated and requires special handling. The first bedding change after drug administration should be handled using procedures that minimize aerosolization in a biosafety cabinet.
4. After this first cage change there is no need for further special precautions to be taken regarding the animals or the cages as long as the animals have not received any more cytotoxic agents.
5. Dispose of all contaminated bedding and animal carcasses in waste container to be incinerated.