

University of Notre Dame Institutional Animal Care and Use Committee Policy for Handling BRDU

Purpose

BRDU is a common synonym for the chemical compound 5-Bromo-2'-Deoxyuridine. BRDU is a white powder that must be stored in a freezer below -20°C. All BRDU used in Freimann Life Science Center/Raclin-Carmichael Hall animal facilities must have been prepared outside the animal facilities. No BRDU powder or solution will be stored in either animal facility. BRDU targets the immune system.

Procedure

1. Research on whether BRDU is present in animal excreta is inconclusive. Rodents are typically given low doses and virtually all of the compound should bind to the cellular nucleic acids in the recipient animal or be metabolized. However there is the possibility of exposure when handling animals treated with BRDU.
2. BRDU treated animals are maintained in disposable cages for 7 days post treatment and handled with BSL-2 procedures.
3. The initial cage change of BRDU treated animals is done in a negative air flow transfer hood or biosafety cabinet.
4. Contaminated disposable cages are bagged for disposal by incineration and picked up by RM&S.
5. All cage cards of treated animals and containers with BRDU must be clearly labeled to indicate the date of administration.
6. BRDU treated animals are transferred to clean cages on day 8 post treatment. Caging thereafter will be handled at BSL-1 with routine husbandry practices.
7. Animals injected with BRDU may be discarded in the carcass freezer; autoclaving does not inactivate the chemical. All carcasses must be identified on the bag as BRDU treated.

Precautions

1. Personnel Protective Equipment must be worn when handling BRDU. This includes: nitrile gloves, filter mask, long sleeve lab disposable coat or gown, safety glasses with a face shield, or only safety glasses if working under a hood.
2. If BRDU contacts clothing, remove and wash skin immediately. Skin contact causes erythema and edema.
3. A recapping device **MUST** be used with any syringes and needles for injection of animals or transfer of solution.
4. BRDU solution vials/tubes **MUST** be opened and all syringes **MUST** be loaded in the fume hood to avoid inhalation of aerosols. All needles and syringes will be disposed as an intact unit. **DO NOT** remove the needle from the syringe to avoid the creation of aerosols.
5. All counters and tables will be cleaned completely using table disinfectant (quaternary ammonia) followed with an alcohol rinse. Nitrile gloves must be worn during clean-up.
6. Wash hands thoroughly with soap and water after handling.
7. Launder all contaminated clothing before reuse.
8. Any remaining solution must be removed from the animal facilities and disposed by the investigator in their hazardous waste.

References

1. Material Safety Data Sheet, Bromodeoxyuridine Sigma-Aldrich Chemical Company. Ronkonkoma, NY., August 2, 2000.
2. Kriss JP, L Revesz. The distribution and fate of bromodeoxyuridine and bromdeoxycytidine in the mouse and rat. *Cancer Research* 22:254-65, 1979.
3. Kitchin KT, JL Brown. Incorporation of 5-iodo-2'-deoxyuridine and 5-bromo-2'-deoxyuridine into rodent DNA as determined by neutron activation and analysis. *Analytical Biochem* 229: 18—7, 1995.

