

Use of 5-Ethynyl-2'-deoxyuridine, (EdU)

Purpose:

To provide guidance for the use of 5-Ethynyl-2'-deoxyuridine, (EdU) in the laboratory and animal facility environment. EdU is commonly used in research at UW-Madison to detect replicating cells in living tissues.

Precautions:

The following information can be used to complete the Safety section of your animal protocol.

1. Chemical hazard agents – (Identify the category of the chemical): (*Select the following*)
 - Mutagen
 - Reproductive Hazard/Teratogen
2. Containment preparation – (Containment equipment required for the preparation of the chemical)
3. (*Select one of the following*)
 - Fume Hood
 - OR**
 - Ducted Biosafety Cabinet (BSC)
4. Containment animals – (Containment equipment required for chemical administration and handling animals after exposure to the chemical): (*Select the following*)
 - No special containment needed.

NOTE: For Rodents: Microisolators or other containment type housing is recommended.
5. PPE needed - (for handling live animals, carcasses or animal waste/dirty bedding): (*Select the following*)
 - Exam gloves – nitrile
 - Safety glasses/goggles
 - Lab coat or disposable gown
6. Waste Disposal: (disposal of animal waste/dirty bedding from animals after exposure to the chemical) (*Select both options and include additional information for Other*)

- Bag animal waste/dirty bedding and place sealed bag in secondary container and place secondary container in regular trash.
- Other: Chemical Hazard Cage Labels are required on each individual cage containing the hazard and must contain the chemical health hazard symbol and “Agent and Disposal method”. Labels are removed or crossed out when the special handling time has ended. *Chemical Hazard Cage Labels are available at www.ehs.wisc.edu/ehs-signage.
- **Note:** For EdU administered in water, treated water should be disposed of into the drain with copious amounts of water within the animal room. Water bottles should be labeled appropriately.

For Aquatic Use: *(Select Othe and include additional information)*

- Other: Chemical Hazard Cage Labels are required on each individual tank containing the hazard and must contain the chemical health hazard symbol and “Agent and Disposal method”. Labels are removed or crossed out when the special handling time has ended. *Chemical Hazard Cage Labels are available at www.ehs.wisc.edu/ehs-signage.
- **Note:** Please contact chemical safety regarding the quantity and concentration of the chemical you will be using to determine disposal requirements needed.

7. Carcass disposal: *(Select the following)*

- Pick up by EH&S for incineration.

8. Chemical human risk: *(Add the following)*

- EdU can cause mutations in DNA and appropriate precautions should be taken to avoid exposure. Pregnant and lactating women should avoid exposure to EdU and animals that have been administered EdU as it is suspected of damaging fertility or the unborn child. EdU acts on dividing cells, primarily directed to the immune system including bone marrow cells. Therefore, immunocompromised individuals should use extreme caution when handling EdU.

References:

“Dr Jekyll and Mr Hyde: a strange case of 5-ethynyl-2'-deoxyuridine and 5-ethynyl-2'-deoxycytidine”

- [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4736823/#:~:text=5%2DEthynyl%2D2%E2%80%B2%2Ddeoxyuridine%20\(EdU\)%20and,than%20the%20toxicity%20of%20EdC](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4736823/#:~:text=5%2DEthynyl%2D2%E2%80%B2%2Ddeoxyuridine%20(EdU)%20and,than%20the%20toxicity%20of%20EdC)

“5-Ethynyl-2'-deoxyuridine, (EdU) SDS”

- <https://datasheets.scbt.com/sds/aghs/en/sc-284628.pdf>