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# Policy for Disposing of Recombinant or Synthetic Nucleic Acid Molecules (rDNA) and rDNA Contaminated Waste

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## 1. Background

Work with recombinant and synthetic nucleic acids can pose risks to researchers, to the public, and to the environment. To mitigate these risks, the National Institute of Health (NIH) established the [NIH Guidelines for Research Involving Recombinant or Synthetic Nucleic Acid Molecules](#). Institutions receiving funding from the NIH, such as NYU and NYU Langone Medical Center, are required to comply with these guidelines. These guidelines require that all liquid or solid wastes contaminated with recombinant or synthetic nucleic acids must be decontaminated prior to disposal.

## 2. Definitions

**rDNA:** Referral to rDNA throughout will apply to (i) molecules that a) are constructed by joining nucleic acid molecules, and b) can replicate in a living cell (i.e. recombinant nucleic acids); (ii) nucleic acid molecules that are chemically or by other means synthesized or amplified, including those that are chemically or otherwise modified but can base pair with naturally occurring nucleic acid molecules (i.e. synthetic nucleic acids); or (iii) molecules that result from the replication of those described in (i) or (ii) above.

**rDNA waste** is included in the definition of regulated medical waste (RMW) in the NYU Langone Medical Center Safety Policy # 141. rDNA waste includes the following categories:

- Cultures and stocks of rDNA, including those handled at BSL1, and culture dishes and devices used to transfer, inoculate, and mix cultures of rDNA.
- Animal waste, including carcasses, body parts or body fluids. This includes recombinant organisms handled at ABSL1 and those, including drosophila and zebrafish, not necessarily handled in the animal facility.
- Bedding that is potentially contaminated with rDNA waste, in particular, bedding from recombinant animals handled at ABSL2 or animals treated with rDNA which requires handling at BSL2.

## 3. rDNA Disposal Methods

All rDNA waste, regardless of its potential to infect humans, shall be disposed as Regulated Medical Waste (RMW). Appropriate waste handling practices are detailed below.

### *Liquids*

- rDNA contaminated liquids shall be autoclaved or otherwise decontaminated before disposal.
- As an alternative to autoclaving, rDNA contaminated liquids may be decontaminated as follows: Add enough fresh bleach to the liquid to yield a final concentration of 10% bleach. Allow it to sit for at least 30 minutes. rDNA decontaminated with bleach may be disposed via sinks. Environmental Health and Safety (EH&S) or Radiation Safety should be contacted if the rDNA waste also contains a hazardous chemical or radioactive compound or if a chemical other than bleach is used to decontaminate rDNA waste.

### ***Animal waste***

Carcasses from animals that qualify as rDNA waste shall be disposed via red bags. In the animal facilities, these bags will be packed in 4.5 cubic foot corrugated boxes or 55 gallon fiber drums lined with red plastic bags. Boxes or drums shall be scheduled for incineration.

### ***Sharps***

Immediately after use, sharps contaminated with rDNA shall be discarded into sharps containers. Sharps shall be discarded intact. They will not be cut, broken, bent or recapped prior to disposal

### ***Other Wastes***

Other wastes which have been contaminated with rDNA, such as culture dishes and devices used to transfer, inoculate, or mix cultures, shall be discarded directly into a waste container lined with a red bag.

***For questions, contact EH&S: 212-263-5159***