

Guidelines for the Safe Handling of Animals Exposed to LPS in Research

1. Endotoxin (bacterial Lipopolysaccharide, or LPS) is a component of the cell wall of gram-negative bacteria. Although it occurs naturally in the environment (in agricultural settings, and in the home particularly if there are household pets) it can exacerbate asthmatic symptoms in susceptible individuals.
2. Potential hazards of working with the agent include sharps, splashes, ingestion, and chronic inhalation.
3. The appropriate Animal Biosafety Level for work with LPS is Level 1 (ABSL-1). (See <https://www.cdc.gov/biosafety/publications/bmbl5/>).
4. Personal protective equipment (PPE) requirements for all procedures involving LPS (i.e. injecting the animal, changing the bedding, cleaning up spills of agent) – include wearing gloves and lab coat for all procedures involving handling of LPS and animals exposed to LPS, and for cleaning spills.
5. Engineering and work practice controls must be used to protect workers from potentially hazardous aerosols.
 - a. All **aerosol exposures** are performed in a biological safety cabinet or chemical fume hood, within an exposure chamber.
 - b. All exposures by **injection** are performed carefully to minimize the risk of accidental exposures to staff.
 - i. Sharps used must be discarded immediately after use in appropriate sharps containers and then treated according to your Biowaste Treatment Plan (https://www.safety.duke.edu/sites/default/files/VII_3MedWaste.pdf)
6. Standard animal care precautions are sufficient once animals are moved to a clean cage. Animal bedding should not become contaminated with LPS as the animals are not likely to shed the toxin.
7. Spill procedure – wearing protective clothing and gloves, the area will be wiped up with absorbent material and decontaminated with a freshly made 10% household bleach solution (at least 0.5% sodium hypochlorite). All contaminated material will be contained and treated according to the Biowaste Treatment Plan. Large amounts of bleach will not be autoclaved.
8. Training of all personnel who handle LPS or work with animals will be performed. All employees, in addition to receiving animal handling training must be completely familiarized with the proper procedure for handling LPS.
9. Exposure follow-up:
 - a. Report exposure immediately by calling the Employee Health Exposure Hotline (115 from a Duke Campus phone, 919-684-8115 from non-Duke phone).
 - b. Complete the Report of Occupational Injury or Illness form found at <https://hr.duke.edu/wellness/workers-compensation>
10. Animal carcass disposal: dead animals will be frozen until they are collected for disposal by DLAR.