

Exposure Response Plan for the Laboratory Handling of *Salmonella*

Background Information:

Salmonella typhimurium is a gram negative rod; motile, aerobic and facultative anaerobic. There are over 2000 serotypes capable of causing disease (acute gastroenteritis) Salmonellosis. Outside the lab disease usually results from foodborne infection/intoxication.

Acute infectious disease with sudden onset of abdominal pain, diarrhea, nausea and vomiting; dehydration may be severe in infants and elderly; deaths are uncommon except in very young or very old or debilitated/immunocompromised; morbidity may be high; may progress to more serious septicemia, includes focal infections, abscesses, endocarditis, pneumonia; may also cause typhoid like enteric fever; some cases develop reactive arthritis (Reiter's syndrome) which may become chronic.

Exposure Incident: There have been 48 reported laboratory infections with *Salmonella* spp. Source of infection includes contact with feces, blood, urine, food, feed and environmental materials. The exposure routes are ingestion and parenteral inoculation. The importance of aerosol exposure is not known.

Reporting Exposure Incidents: Report all exposures to the Principal Investigator or lab supervisor and seek immediate medical evaluation. Whenever there is an accident involving *Salmonella*, the Biosafety Officer must be notified.

Pre-exposure Health Screening:

Prior to beginning work with or around *salmonella*, the PI or an Employee Health Professional will inform the worker of the risks and symptoms of exposure. Workers with additional concerns about pre-existing medical conditions should schedule an individual appointment with the Occupational Medicine physician by calling 541-737-7566. Note: Immunization is not available at this time.

After an Exposure Incident Occurs:

Immediate Action by Route of Exposure:

- **Mucous Membranes (eye, nose, mouth):** If contaminated material is splashed or sprayed contaminating the eyes, nose or mouth: Flush the eyes for 10-15 minutes. Rinse mouth out with clean water and do not swallow.
- **Inhalation:** If contaminated materials are aerosolized outside of primary containment and potentially inhaled, rinse mouth twice expelling the rinsate. Do not swallow.
- **Needlestick, Animal Bite or Laceration:** Wash the area with soap and running water.

Medical Evaluation and Follow-up:

- Following the exposure and immediate actions stated above, faculty and staff should contact the Corvallis Clinic during business hours at 541-753-1785 or 1-866-209-7711 after business hours. Arrange for medical evaluation, diagnosis and treatment if needed. Student workers

should be evaluated at Student Health Services as soon as possible by the Occupational Health Physician and contact OSU Occupational Medicine at 541-737-7566.

- If you develop diarrhea, fever and/or abdominal cramping within 12 to 72 hours following potential contact with the agent in the laboratory, assume salmonellosis. Notify the Principal Investigator.
- Notify the physician that you work with Salmonella and arrange for a stool specimen or for an anal swab to be taken to be sent off to the laboratory to determine the strain of *Salmonella*.

Signs and Symptoms of Disease:

Symptoms of salmonellosis include diarrhea, fever, and abdominal cramps. They develop 12 to 72 hours after infection, and the illness usually lasts 4 to 7 days. Most people recover without treatment. But diarrhea and dehydration may be so severe that it is necessary to go to the hospital. Older adults, infants, and those with impaired immune systems are at highest risk.

If you only have diarrhea, you usually recover completely, although it may be several months before your bowel habits are entirely normal. A small number of people who are infected with salmonellosis develop Reiter's syndrome, a disease that can last for months or years and can lead to chronic arthritis.

Post-exposure Prophylaxis:

The healthcare provider will determine the course of treatment. People are generally asked not to prepare food and not to provide direct care to infants, the elderly and the immunocompromised. A series of stool cultures may be done to ensure that the infection is not chronic and a carrier state has not developed.

Oregon Department of Public Health classifies suspected or confirmed Salmonellosis as immediately reportable diseases within one working day. If an employee develops signs and symptoms associated with typhoid fever in the absence of an exposure incident, the PI and Biosafety Officer shall be notified immediately. Infection will be considered laboratory-acquired until proven otherwise.