

PATHOGEN INVENTORIES

Scope

This SOP applies to all faculty and staff with collections of pathogenic agents at UNL whether the agents are actively being used or are in long-term storage.

Purpose

Pursuant to best practices in biosafety stewardship and in order to avoid stockpiles of unknown or abandoned pathogenic agents at UNL, it is institutional policy for all faculty and staff to maintain an inventory of all pathogenic agents in their possession at UNL.

Definitions

Pathogenic agents: Any microbiological agent or biological toxin that is capable of causing disease in humans, animals or plants. Lab-adapted strains of microbes are not included under this definition; examples include K12-derived *E. coli* strains and *S. cerevisiae*. Additionally, certain replication incompetent viral vectors are not included in this definition. Please contact the EHS Biosafety Officer for additional information and guidance on viral vectors.

Inventory Requirements

An inventory listing all pathogenic agents in the possession of a faculty or staff member must be maintained by the faculty or staff member. The inventory must be kept current and accurate at all times. An updated copy of the inventory must be submitted to EHS biosafety staff whenever new agents are added/removed or at least annually. The inventory must at a minimum contain the following information:

- **Name of agent**, preferably list the genus and species of microbiological agents; or name and species of origin for biological toxins
- **Strain information:** list all strains of the agents possessed. *(If known, please include the genotype of the microbe indicating all antibiotic resistance genes and any mutations that may increase virulence, host range or pathogenicity)*
- **Storage location of agent**
- **Status of agent** (e.g., long-term storage, active use, etc.)

If the inventory has not changed in the past 12 months after initial submission of an inventory document, an email indicating as such can be submitted following the procedures below.

Submission procedures

Inventories must be submitted to the following email address: ibc@unl.edu

Inventories must be submitted as email attachments in any of the following formats: Microsoft Excel (.xls, .xlsx or .csv), Microsoft Word, or PDF.

Proprietary database file formats will not be accepted, as we do not have access to software that may have been used to create the database file.

Please format the email subject line as follows:

“[Year] Pathogenic Agent Inventory for [PI Name – Department – Building]”

Sample subject line: “2018 Pathogenic Agent Inventory for Matthew Anderson – Environmental Health & Safety – Agriculture Warehouse 1”

Updated inventories will be requested once a year from all faculty that have pathogen collections. A request will be sent from the IBC email account (ibc@unl.edu). If your inventory changes significantly in the interim period, please submit an update more frequently. If no changes in inventory have occurred, respond to the annual inventory update request that no changes to the inventory have occurred since the last submission.

Inventories and Lab Decommissioning

Faculty planning to leave UNL should submit a final inventory approximately **one month** prior to your lab shutting down. This will allow sufficient time for the Biosafety staff to review your inventory and advise on the following (as applicable):

- Requirements for shipping your inventory to your new institution
- Best disinfection methods for disposing of the inventory; or
- Procedures for transferring your inventory to another faculty member.

Disposal of Pathogenic Agents

Follow the procedures outlined in the EHS SOP, ***Disposing of Biohazardous Materials Including Recombinant Nucleic Acids*** to properly discard biological agents.



Important: Do not dispose of pathogenic agents or recombinant materials in the regular trash.

If you find pathogenic agents while conducting an inventory that are no longer needed or of which the identity is unknown, please verify that the agent is not on the Select Agent and Toxin list found in **Appendix A** of this document. If you do determine that you possess one of the agents on the Select Agent and Toxin list, contact either the EHS Director or Biosafety Officer immediately. Keep the agent in a locked freezer with restricted access and do not discard or



destroy the agent without permission and applicable instructions from the EHS Director or Biosafety Officer.

Abandoned Agents

If you are aware of pathogenic agents or other biological materials that have been abandoned in a freezer, cold room or other type of long term storage, please contact EHS at 402.472.4925 for assistance with disposal options.

Questions or comments about this process can be directed to the email address provided above (ibc@unl.edu) or to the UNL Biosafety Officer at 402.472.9554.

Appendix A

Below is the complete list of Select Agents and Toxins. These agents are regulated by the federal government and possession of these agents requires registration with either CDC/HHS or USDA-APHIS. Additionally, disposal/destruction of these agents must be documented and paperwork submitted to the appropriate federal agency.

HHS and USDA Select Agents and Toxins 7CFR Part 331, 9 CFR Part 121, and 42 CFR Part 73

HHS SELECT AGENTS AND TOXINS

1. **Abrin**
2. *Bacillus cereus Biovar anthracis**
3. **Botulinum neurotoxins***
4. Botulinum neurotoxin producing species of *Clostridium**
5. **Conotoxins**
6. *Coxiella burnetii*
7. Crimean-Congo haemorrhagic fever virus
8. **Diacetoxyscirpenol**
9. Eastern Equine Encephalitis virus³
10. Ebola virus*
11. *Francisella tularensis**
12. Lassa fever virus
13. Lujo virus
14. Marburg virus*
15. Monkeypox virus³
16. Reconstructed replication competent forms of the 1918 pandemic influenza virus containing any portion of the coding regions of all eight gene segments (Reconstructed 1918 Influenza virus)
17. **Ricin**
18. *Rickettsia prowazekii*
19. SARS-associated coronavirus (SARS-CoV)
20. **Saxitoxin**
- South American Haemorrhagic Fever viruses:**
 21. Chapare
 22. Guanarito
 23. Junin
 24. Machupo
 25. Sabia
26. **Staphylococcal enterotoxins A,B,C,D,E subtypes**
27. **T-2 toxin**
28. **Tetrodotoxin**
- Tick-borne encephalitis complex (flavi) viruses:**
 29. Far Eastern subtype
 30. Siberian subtype

31. Kyasanur Forest disease virus
32. Omsk hemorrhagic fever virus
33. Variola major virus (Smallpox virus)*
34. Variola minor virus (Alastrim)*
35. *Yersinia pestis**

OVERLAP SELECT AGENTS AND TOXINS

36. *Bacillus anthracis**
37. *Bacillus anthracis* Pasteur strain
38. *Brucella abortus*
39. *Brucella melitensis*
40. *Brucella suis*
41. *Burkholderia mallei**
42. *Burkholderia pseudomallei**
43. Hendra virus
44. Nipah virus
45. Rift Valley fever virus
46. Venezuelan equine encephalitis virus³

USDA SELECT AGENTS AND TOXINS

47. African horse sickness virus
48. African swine fever virus
49. Avian influenza virus³
50. Classical swine fever virus
51. Foot-and-mouth disease virus*
52. Goat pox virus
53. Lumpy skin disease virus
54. *Mycoplasma capricolum*³
55. *Mycoplasma mycoides*³
56. Newcastle disease virus^{2,3}
57. Peste des petits ruminants virus
58. Rinderpest virus*
59. Sheep pox virus
60. Swine vesicular disease virus



USDA PLANT PROTECTION AND QUARANTINE (PPQ)
SELECT AGENTS AND TOXINS

- 61. *Coniothyrium glycines* (formerly *Phoma glycinicola* and *Pyrenochaeta glycines*)
- 62. *Peronosclerospora philippinensis*
(*Peronosclerospora sacchari*)
- 63. *Ralstonia solanacearum*
- 64. *Rathayibacter toxicus*
- 65. *Sclerophthora rayssiae*
- 66. *Synchytrium endobioticum*
- 67. *Xanthomonas oryzae*

*Denotes Tier 1 Agent

Toxins are highlighted in blue.