

The Australia Group

LIST OF HUMAN AND ANIMAL PATHOGENS AND TOXINS FOR EXPORT CONTROL^[1]

July 2017

Viruses

1. African horse sickness virus
2. African swine fever virus
3. Andes virus
4. Avian influenza virus^[2]
5. Bluetongue virus
6. Chapare virus
7. Chikungunya virus
8. Choclo virus
9. Classical swine fever virus (Hog cholera virus)
10. Crimean-Congo hemorrhagic fever virus
11. Dobrava-Belgrade virus
12. Eastern equine encephalitis virus
13. Ebolavirus: all members of the Ebolavirus genus
14. Foot-and-mouth disease virus
15. Goatpox virus
16. Guanarito virus
17. Hantaan virus
18. Hendra virus (Equine morbillivirus)
19. Japanese encephalitis virus
20. Junin virus
21. Kyasanur Forest disease virus
22. Laguna Negra virus
23. Lassa virus
24. Louping ill virus
25. Lujo virus
26. Lumpy skin disease virus
27. Lymphocytic choriomeningitis virus
28. Machupo virus
29. Marburgvirus: all members of the Marburgvirus genus
30. Monkeypox virus
31. Murray Valley encephalitis virus
32. Newcastle disease virus
33. Nipah virus
34. Omsk hemorrhagic fever virus
35. Oropouche virus
36. Peste-des-petits-ruminants virus

37. Porcine Teschovirus
38. Powassan virus
39. Rabies virus and other members of the Lyssavirus genus
40. Reconstructed 1918 influenza virus
41. Rift Valley fever virus
42. Rinderpest virus
43. Rocio virus
44. Sabia virus
45. Seoul virus
46. Severe acute respiratory syndrome-related coronavirus (SARS-related coronavirus)
47. Sheeppox virus
48. Sin Nombre virus
49. St. Louis encephalitis virus
50. Suid herpesvirus 1 (Pseudorabies virus; Aujeszky's disease)
51. Swine vesicular disease virus
52. Tick-borne encephalitis virus (Far Eastern subtype)
53. Variola virus
54. Venezuelan equine encephalitis virus
55. Vesicular stomatitis virus
56. Western equine encephalitis virus
57. Yellow fever virus

Bacteria

1. *Bacillus anthracis*
2. *Brucella abortus*
3. *Brucella melitensis*
4. *Brucella suis*
5. *Burkholderia mallei* (*Pseudomonas mallei*)
6. *Burkholderia pseudomallei* (*Pseudomonas pseudomallei*)
7. *Chlamydia psittaci* (*Chlamydophila psittaci*)
8. *Clostridium argentinense* (formerly known as *Clostridium botulinum* Type G), botulinum neurotoxin producing strains
9. *Clostridium baratii*, botulinum neurotoxin producing strains
10. *Clostridium botulinum*
11. *Clostridium butyricum*, botulinum neurotoxin producing strains
12. *Clostridium perfringens*, epsilon toxin producing types^[3]
13. *Coxiella burnetii*
14. *Francisella tularensis*
15. *Mycoplasma capricolum* subspecies *capripneumoniae* (“strain F38”)
16. *Mycoplasma mycoides* subspecies *mycoides* SC (small colony)
17. *Rickettsia prowazekii*
18. *Salmonella enterica* subspecies *enterica* serovar Typhi (*Salmonella typhi*)
19. Shiga toxin producing *Escherichia coli* (STEC) of serogroups O26, O45, O103, O104, O111, O121, O145, O157, and other shiga toxin producing serogroups^[4]
20. *Shigella dysenteriae*

21. *Vibrio cholerae*
22. *Yersinia pestis*

Toxins as follows and subunits thereof: [5]

1. Abrin
2. Aflatoxins
3. Botulinum toxins^[6]
4. Cholera toxin
5. *Clostridium perfringens* alpha, beta 1, beta 2, epsilon and iota toxins
6. Conotoxins^[6]
7. Diacetoxyscirpenol
8. HT-2 toxin
9. Microcystins (Cyanoginosins)
10. Modeccin
11. Ricin
12. Saxitoxin
13. Shiga toxins (shiga-like toxins, verotoxins, and verocytotoxins)
14. *Staphylococcus aureus* enterotoxins, hemolysin alpha toxin, and toxic shock syndrome toxin (formerly known as *Staphylococcus enterotoxin F*)
15. T-2 toxin
16. Tetrodotoxin
17. Viscumin (*Viscum album* lectin 1)
18. Volkensin

Fungi

1. *Coccidioides immitis*
2. *Coccidioides posadasii*

[1] An agent/pathogen is covered by this list except when it is in the form of a vaccine. A vaccine is a medicinal product in a pharmaceutical formulation licensed by, or having marketing or clinical trial authorisation from, the regulatory authorities of either the country of manufacture or of use, which is intended to stimulate a protective immunological response in humans or animals in order to prevent disease in those to whom or to which it is administered.

Biological agents and pathogens are controlled when they are an isolated live culture of a pathogen agent, or a preparation of a toxin agent which has been isolated or extracted from any source, or material including living material which has been deliberately inoculated or contaminated with the agent. Isolated live cultures of a pathogen agent include live cultures in dormant form or in dried preparations, whether the agent is natural, enhanced or modified.

[2] This includes only those Avian influenza viruses of high pathogenicity as defined by the World Organization for Animal Health (OIE), the European Union (EU), or competent national regulatory bodies.

[3] It is understood that limiting this control to epsilon toxin-producing strains of *Clostridium perfringens* therefore exempts from control the transfer of other *Clostridium perfringens* strains to be used as positive control cultures for food testing and quality control.

[4] Shiga toxin producing *Escherichia coli* (STEC) includes *inter alia* enterohaemorrhagic *E. coli* (EHEC), verotoxin producing *E. coli* (VTEC) or verocytotoxin producing *E. coli* (VTEC).

[5] Excluding immunotoxins

[6] Excluding botulinum toxins and conotoxins in product form meeting all of the following criteria:

- are pharmaceutical formulations designed for testing and human administration in the treatment of medical conditions;
- are pre-packaged for distribution as clinical or medical products; and
- are authorised by a state authority to be marketed as clinical or medical products

Warning List^[1]

Bacteria

1. *Clostridium tetani*^[2]
2. *Legionella pneumophila*
3. *Yersinia pseudotuberculosis*
4. Other strains of *Clostridium* species that produce botulinum neurotoxin^[3]

Fungi

1. *Fusarium langsethiae*
2. *Fusarium sporotrichioides*

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An agent is covered by this list except when it is in the form of a vaccine. A vaccine is a medicinal product in a pharmaceutical formulation licensed by, or having marketing or clinical trial authorisation from, the regulatory authorities of either the country of manufacture or of use, which is intended to stimulate a protective immunological response in humans or animals in order to prevent disease in those to whom or to which it is administered.

^[2] The Australia Group recognizes that this organism is ubiquitous, but, as it has been acquired in the past as part of biological warfare programs, it is worthy of special caution.

^[3] It is the intent of Australia Group members to add to the control list strains of species of *Clostridium* identified as producing botulinum neurotoxin.

Genetic Elements and Genetically-modified Organisms:

Any genetically-modified organism¹ which contains, or genetic element² that codes for:

- a. any gene or genes specific to any listed virus; or
- b. any gene or genes specific to any listed bacterium³ or fungus, and which
 - i. in itself or through its transcribed or translated products represents a significant hazard to human, animal or plant health, or
 - ii. could endow or enhance pathogenicity⁴; or
- c. any listed toxins or their sub-units.

Technical note:

1. Genetically-modified organisms include organisms in which the nucleic acid sequences have been created or altered by deliberate molecular manipulation.
2. Genetic elements include, inter alia: chromosomes, genomes, plasmids, transposons, vectors, and inactivated organisms containing recoverable nucleic acid fragments, whether genetically modified or unmodified, or chemically synthesized in whole or in part. For the purposes of the genetic elements control, nucleic acids from an inactivated organism, virus, or sample are considered 'recoverable' if the inactivation and preparation of the material is intended or known to facilitate isolation, purification, amplification, detection, or identification of nucleic acids.
3. These controls do not apply to nucleic acid sequences of shiga toxin producing *Escherichia coli* of serogroups O26, O45, O103, O104, O111, O121, O145, O157, and other shiga toxin producing serogroups, other than those genetic elements coding for shiga toxin, or for its subunits.
4. 'Endow or enhance pathogenicity' is defined as when the insertion or integration of the nucleic acid sequence or sequences is/are likely to enable or increase a recipient organism's ability to be used to deliberately cause disease or death. This might include alterations to, inter alia: virulence, transmissibility, stability, route of infection, host range, reproducibility, ability to evade or suppress host immunity, resistance to medical countermeasures, or detectability.