

TABLE 3.1  
EXAMPLES<sup>a</sup> OF BACTERIA OF RISK GROUP 2

Organism	
<i>Abiotrophia</i> spp.	<i>Haemophilus influenzae</i> , <i>H. ducreyi</i>
<i>Acidovorax</i> spp.	<i>Helicobacter pylori</i>
<i>Acinetobacter</i> spp.	<i>Kingella kingae</i>
<i>Actinobacillus</i> spp.	<i>Klebsiella</i> spp.
<i>Actinomyces</i> spp.	<i>Legionella</i> spp.
<i>Aeromonas hydrophila</i>	<i>Leptospira interrogans</i> (all serovars) <sup>d</sup>
<i>Aftipia</i> spp.	<i>Listeria</i> spp., <i>Listeria monocytogenes</i> <sup>e</sup>
<i>Arcanobacterium haemolyticum</i>	<i>Moraxella</i> spp.
<i>Bacillus cereus</i>	<i>Mycobacterium</i> spp. other than <i>M. tuberculosis</i> complex <sup>f</sup>
<i>Bartonella henselae</i> , <i>B. quintana</i> , <i>B. vinsonii</i> , <i>B. elizabethiae</i> , <i>B. weisii</i>	<i>Mycobacterium tuberculosis</i> complex (except multi-drug resistant strains <sup>f, g, h</sup> )
<i>Bordetella pertussis</i>	<i>Mycoplasma pneumoniae</i> <sup>f</sup>
<i>Borrelia</i> (mammalian) spp.	<i>Neisseria gonorrhoeae</i> , Unspecified <i>Neisseria</i> <sup>b, f</sup> , <i>N. meningitidis</i> <sup>b, f</sup>
<i>Brucella ovis</i>	<i>Nocardia</i> spp.
<i>Brucella</i> spp. serology only	<i>Oligella</i> spp.
<i>Burkholderia</i> spp. (except <i>B. mallei</i> ), <i>Burkholderia pseudomallei</i> <sup>b, f</sup>	<i>Pasteurella</i> spp.
<i>Campylobacter coli</i> , <i>C. fetus</i> , <i>C. jejuni</i>	<i>Pseudomonas</i> spp.
<i>Capnocytophaga canimorsus</i>	<i>Rhodococcus equi</i>
<i>Chlamydia</i> spp. (except <i>C. psittaci</i> )	<i>Salmonella</i> serovars
<i>Clostridium</i> spp.	<i>Salmonella</i> Paratyphi A and B <sup>b</sup>
<i>Corynebacterium diphtheriae</i> , <i>C. renale</i> , <i>C. pseudotuberculosis</i>	<i>Salmonella</i> Typhi <sup>b, e</sup>
<i>Coxiella burnetii</i> serology, other tests on samples	<i>Serratia</i> spp.
<i>Dermatophilus congolensis</i>	<i>Shigella</i> spp. <sup>b</sup>
<i>Edwardsiella tarda</i>	<i>Sphaerophorus necrophorus</i>
<i>Eikenella corrodens</i>	<i>Staphylococcus aureus</i>
<i>Enterococcus</i> spp. (Vancomycin-resistant strains)	<i>Stenotrophomonas maltophilia</i>
<i>Erysipelothrix rhusiopathiae</i>	<i>Streptobacillus moniliformis</i>
Pathogenic <i>Escherichia coli</i> (except genetically crippled strains <sup>c</sup> )	<i>Streptococcus pyogenes</i> , <i>S. pneumoniae</i>
Verocytotoxin-producing <i>Escherichia coli</i> (VTEC) <sup>b</sup>	<i>Treponema pallidum</i>
<i>Fusobacterium</i> spp.	<i>Ureaplasma ureolyticum</i>
<i>Gardnerella vaginalis</i>	<i>Vibrio cholerae</i> , <i>V. parahaemolyticus</i> , <i>V. vulnificus</i>
<i>Gordona</i> spp.	<i>Yersinia</i> spp. (except <i>Y. pestis</i> )

<sup>a</sup> This list is not exhaustive. Some species of some genera may be classified as Risk Group 1 subject to a risk assessment and check of current literature.

<sup>b</sup> Low infectious dose, high pathogenicity, common source of laboratory-acquired infections.

<sup>c</sup> For genetically crippled strains, refer to the gene technology regulations.

<sup>d</sup> Can penetrate intact skin.

<sup>e</sup> May be dangerous for pregnant women.

<sup>f</sup> High risk of aerosol spread.

<sup>g</sup> Vaccination, see Clause 2.6.4.

<sup>h</sup> Less than 5000 cultures per year. See references in Clause 3.3.2.1.

**TABLE 3.2**  
**EXAMPLES<sup>a</sup> OF PARASITES OF RISK GROUP 2—**  
**INFECTIOUS STAGES ONLY**

Organism
<i>Ancylostoma duodenale</i>
<i>Ascaris lumbricoides</i>
<i>Babesia divergens</i>
<i>Babesia microti</i>
<i>Brugia</i> spp.
<i>Clonorchis sinensis</i>
<i>Cryptosporidium</i> spp.
<i>Echinococcus</i> spp.
<i>Entamoeba histolytica</i>
<i>Giardia duodenalis</i> (also known as <i>Giardia lamblia</i> and <i>Giardia intestinalis</i> )
<i>Hymenolepis diminuta</i>
<i>Hymenolepis nana</i>
<i>Leishmania</i> (mammalian) spp.
<i>Loa loa</i>
<i>Naegleria fowleri</i>
<i>Necator americanus</i>
<i>Opisthorchis</i> spp.
<i>Plasmodium</i> (human and simian)
<i>Strongyloides stercoralis</i> <sup>b</sup>
<i>Taenia saginata</i>
<i>Taenia solium</i> <sup>c</sup>
<i>Toxocara canis</i>
<i>Toxoplasma gondii</i> <sup>d</sup>
<i>Trichinella spiralis</i>
<i>Trypanosoma brucei</i> subsp.
<i>Trypanosoma cruzi</i>
<i>Wuchereria bancrofti</i>

<sup>a</sup> This list is not exhaustive.

<sup>b</sup> Filariform larvae may cross intact skin.

<sup>c</sup> Accidental ingestion of eggs may lead to cysticercosis

<sup>d</sup> May be teratogenic

TABLE 3.3  
EXAMPLES<sup>a</sup> OF FUNGI OR FUNGAL-LIKE  
ORGANISMS OF RISK GROUP 2

Organism
<i>Aspergillus fumigatus</i> and <i>A. flavus</i>
<i>Candida albicans</i>
<i>Cladophialophora</i> spp.
<i>Cryptococcus gattii</i>
<i>Cryptococcus neoformans</i>
<i>Epidermophyton floccosum</i>
<i>Microsporum</i> spp.
<i>Scedosporium</i> spp.
<i>Sporothrix schenckii</i>
<i>Trichophyton</i> spp.

<sup>a</sup> This list is not exhaustive.

TABLE 3.4  
EXAMPLES<sup>a</sup> OF VIRUSES AND PRIONS OF RISK GROUP 2

Virus or prion
<i>Adenoviridae</i>
Adenovirus
<i>Arenaviridae</i>
Arenavirus
Lymphocytic choriomeningitis (LCM) non-neurotropic strains
Tacaribe virus complex
<i>Caliciviridae</i>
Feline calicivirus
Norovirus
Sapporo-like
Largovirus
Rabbit haemorrhagic disease
<i>Coronaviridae</i>
Coronavirus other than SARS coronavirus
SARS coronavirus (tests not involving replication) <sup>b</sup>
<i>Flaviviridae</i>
Flavivirus
Dengue 1, 2, 3 and 4
Japanese encephalitis (Nakayama strain) <sup>c</sup>
Kokobera
Kunjin
Murray Valley encephalitis
West Nile (Sarafend strain)
Saumarez Reef
Yellow fever (strain 17D) <sup>c</sup>
Hepacivirus
Hepatitis C
<i>Hepadnaviridae</i>
Duck hepatitis B
Hepatitis B <sup>c</sup>
<i>Herpesviridae</i>
Alphaherpesvirinae
Simplex
Varicella <sup>c</sup>
Betaherpesvirinae
Cytomegalovirus <sup>d</sup>
Gammaherpesvirinae
Herpes 6 and 7
Lymphocryptovirus (EB-like viruses)
<i>Orthomyxoviridae</i>
Influenza (all strains and candidate vaccine strains except those specified in Table 3.7 <sup>c,e</sup> )

(continued)

TABLE 3.4 (continued)

Virus or prion
<i>Paramyxoviridae</i>
Paramyxovirinae
Morbillivirus
Measles <sup>c</sup>
Rubulavirus
Menangle
Mumps <sup>c</sup>
Human parainfluenza 2 and 4
Avulavirus
Newcastle disease (non-virulent enzootic strains)
Avian paramyxoviruses 2 to 9
Respirovirus
Sendai
Human parainfluenza 1 and 3
Pneumovirinae
Pneumovirus
Respiratory syncytial
Metapneumovirinae
Metapneumovirus
Avian metapneumovirus
Human metapneumovirus
<i>Parvoviridae</i>
Human parvovirus <sup>d</sup>
<i>Picornaviridae</i>
Cardiovirus
Encephalomyocarditis virus
Hepatovirus
Hepatitis A virus <sup>c</sup>
Human Enterovirus
Coxsackievirus
Echovirus
Enterovirus
Poliovirus 1, 2 and 3 (see Appendix C) <sup>e</sup>
Parechovirus
Rhinovirus
<i>Poxviridae</i>
Orthopoxvirus
Vaccinia <sup>c, f</sup>
Parapoxvirus
Orf
Prions
Gertsman-Sträussler syndrome,
Kuru and Creutzfeldt-Jakob agents (See Clauses 3.7 and 12.2.1)
<i>Reoviridae</i>
Orbivirus
Bluetongue viruses (endemic strains)
Epizootic haemorrhagic disease viruses of deer (endemic strains)
Rotavirus
Rotavirus
<i>Retroviridae</i> (serology, other tests on samples)
Oncovirinae
Human lymphotropic virus 1
Human lymphotropic virus 2
Lentivirinae
Human immunodeficiency virus

(continued)

TABLE 3.4 (continued)

Virus or prion
<i>Togaviridae</i>
Alphavirus
Barmah Forest
Ross River
Semliki Forest
Arterivirus
Equine viral arteritis
Rubivirus
Rubella <sup>c,d</sup>
Unclassified
Hepatitis D
Hepatitis E <sup>f</sup>

<sup>a</sup> This list is not exhaustive.

<sup>b</sup> While these agents are exotic to Australia, the AQIS permit determines the level of containment required.

<sup>c</sup> Vaccination available, see Clause 2.6.4.

<sup>d</sup> May be teratogenic.

<sup>e</sup> See also Tables 3.7.

<sup>f</sup> May be dangerous for pregnant women.

NOTE: Hepatitis G and hepatitis TT have been excluded from this Table as there is insufficient evidence that these agents are associated with disease.

TABLE 3.5  
EXAMPLES<sup>a</sup> OF BACTERIA OF RISK GROUP 3

Organism
<i>Bacillus anthracis</i>
<i>Bartonella bacilliformis</i>
<i>Burkholderia mallei</i>
<i>Brucella</i> spp. (except serology (see Table 3.1) and <i>B. ovis</i> )
<i>Chlamydia psittaci</i>
<i>Coxiella burnetii</i> (cultures, animal work and concentrates) <sup>b, c</sup>
<i>Francisella tularensis</i> (type A)
<i>Mycobacterium tuberculosis</i> complex <sup>c, d, e</sup>
<i>Rickettsia</i> spp.
<i>Yersinia pestis</i>

<sup>a</sup> This list is not exhaustive.

<sup>b</sup> May be dangerous for pregnant women.

<sup>c</sup> Vaccination, see Clause 2.6.4.

<sup>d</sup> Respiratory protection should be considered.

<sup>e</sup> Greater than 5000 cultures per year, susceptibility testing, known multi-drug resistant strains. See references in Clause 3.3.2.1.

TABLE 3.6  
EXAMPLES<sup>a</sup> OF FUNGI OR FUNGAL-LIKE  
ORGANISMS OF RISK GROUP 3

Organism
<i>Blastomyces dermatitidis</i>
<i>Coccidioides immitis</i> <sup>b</sup>
<i>Coccidioides posadasii</i>
<i>Histoplasma</i> spp.
<i>Paracoccidioides brasiliensis</i>
<i>Penicillium marneffeii</i>

<sup>a</sup> This list is not exhaustive.

<sup>b</sup> May be dangerous for pregnant women.

NOTE: The mycelial forms of these fungi produce highly infectious conidia. The use of plate cultures should be avoided.

TABLE 3.7  
 EXAMPLES<sup>a</sup> OF VIRUSES OF RISK GROUP 3

Virus
<i>Arenaviridae</i>
Arenavirus
Lymphochoriomeningitis (LCM) neurotropic strains
<i>Bunyaviridae</i>
Group C
Oropouche
Phlebovirus
Hantavirus
Hantaan and related viruses <sup>b</sup>
<i>Coronaviridae</i>
SARS coronavirus (from cultures and concentrates) <sup>c</sup>
<i>Flaviviridae</i>
Flavivirus
Japanese encephalitis <sup>d</sup>
St Louis encephalitis
Tick-borne viruses
West Nile
Yellow fever <sup>d</sup>
<i>Orthomyxoviridae</i>
Avian influenza (exotic pathogenic strains) <sup>c, d</sup>
Influenza (highly pathogenic strains)
<i>Paramyxoviridae</i>
Paramyxovirinae
Rubulavirus
Mapuera
Avulavirus
Newcastle disease (exotic strains)
<i>Retroviridae</i> (from cultures and concentrates)
Oncovirinae
Human lymphotropic virus 1
Human lymphotropic virus 2
Lentivirinae
Human immunodeficiency virus
<i>Rhabdoviridae</i>
Lyssavirus
Australian bat lyssavirus <sup>d</sup>
Rabies fixed strain (CVS II) <sup>d</sup>
<i>Togaviridae</i>
Alphavirus
Chikungunya
Eastern equine encephalitis
Western equine encephalitis
Venezuelan equine encephalitis <sup>d</sup>

<sup>a</sup> This list is not exhaustive.

<sup>b</sup> Animal inoculations to be performed under PC4 containment.

<sup>c</sup> While these agents are exotic in Australia, the AQIS permit determines the level of containment required.

<sup>d</sup> Vaccination available, see Clause 2.6.4.

TABLE 3.8  
EXAMPLES<sup>a</sup> OF VIRUSES OF RISK GROUP 4

Virus
<i>Arenaviridae</i>
Arenavirus
Guanarito
Junin
Lassa
Machupo
Mopeia viruses
Sabia
<i>Bunyaviridae</i>
Nairovirus
Crimean-Congo hemorrhagic fever
Hazara
<i>Filoviridae</i>
Ebola
Marburg
<i>Flaviviridae</i>
Flaviviruses
Absettarov
Central European encephalitis
Hanzalova
Hypr
Kumlinge
Kysanur Forest disease
Omsk hemorrhagic fever disease
Russian spring summer encephalitis
Tick-borne encephalitis
<i>Herpesviridae</i>
Alphaherpesvirinae
Herpes virus simiae (B virus)
<i>Paramyxoviridae</i>
Paramyxovirinae
Henipavirus
Hendra <sup>b</sup>
Nipah

<sup>a</sup> This list is not exhaustive.

<sup>b</sup> Although only a few cases of infection with Hendra have occurred, the death rate has been high. It is considered appropriate to include this virus in Risk Group 4 from the limited information available.

**TABLE 3.9**  
**EXAMPLES<sup>a</sup> OF PLANT PATHOGENS OF**  
**PLANT RISK GROUP 2**

Organism
Grapevine fan leaf nepovirus
Asparagus stem blight ( <i>Phomopsis asparagi</i> )
Tomato yellow leaf curl virus
Citrus tristeza virus
Onion smut ( <i>Urocystis cepulae</i> )
Lettuce leaf blight ( <i>Pythium tracheiphilum</i> )

<sup>a</sup> This list is not exhaustive.

**TABLE 3.10**  
**EXAMPLES<sup>a</sup> OF PLANT PATHOGENS OF**  
**PLANT RISK GROUP 3**

Organism
Citrus canker ( <i>Xanthomonas axonopodis</i> )
Fire blight ( <i>Erwinia amylovora</i> )
Plum pox potyvirus
Potato cyst nematode ( <i>Globodera pallida</i> )
Pierce's disease ( <i>Xylella fastidiosa</i> )
Chestnut blight ( <i>Cryphonectria parasitica</i> )
Pine pitch canker ( <i>Fusarium circinatum</i> )

<sup>a</sup> This list is not exhaustive.

**TABLE 3.11**  
**EXAMPLES<sup>a</sup> OF PLANT PATHOGENS OF**  
**PLANT RISK GROUP 4**

Organism
Guava rust ( <i>Puccinia psidii</i> )
Karnal bunt ( <i>Tilletia indica</i> )
Sudden oak death ( <i>Phytophthora ramorum</i> )
Potato leaf blight ( <i>Phytophthora infestans</i> exotic strains)
Grapevine rust ( <i>Phakopsora euvtis</i> )

<sup>a</sup> This list is not exhaustive.