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3.7 Prions

Prions are resistant to most traditional methods of inactivation used for other microorganisms such as formaldehyde, ultraviolet light, ethylene oxide, ionizing radiation and moist heat at 121 °C. Because of the difficulties in destroying prions or ensuring they are non-infectious, they pose particular laboratory problems. However, they are not easily spread from host to host and the usual mechanism of spread appears to be by the ingestion or grafting of infectious material.

When work involves infectious prions, a Class II BSC shall be used. When it is possible for prions to contaminate voids and exhaust air paths between the operating surface of the Class II BSC and the cabinet exhaust filter, a laminar flow CDSC shall be used. A risk assessment shall be carried out to determine when a CDSC shall be used.

Table 3.4 lists examples of prions of Risk Group 2 (see also Clauses 11.9 and 13.2.1). Table D.2 provides guidance on disinfection of equipment or surfaces contaminated with prions.

For potentially infectious diagnostic samples, see Clause 3.4.

3.8 Scale of cultures

The risk group classifications listed in Tables 3.1 to 3.7 are appropriate for small-scale volume laboratory operations with microorganisms of Risk Groups 2 and 3. Where larger volumes or very high concentrations of the microorganisms are to be handled, the risk of infection or inadvertent release from containment can be higher and additional precautions or an increase in PC level may be appropriate. See also Clause 2.3 for large scale GMO work.

Table 3.1 — Examples[a] of bacteria of Risk Group 2

Organism	
Acidovorax spp.	*Haemophilus* spp.
Acinetobacter spp.	*Helicobacter* spp.
Actinomyces spp.	*Kingella kingae*
Aeromonas spp.	*Klebsiella* spp.
Afipia spp.	*Legionella* spp.
Arcanobacterium haemolyticum	*Leptospira interrogans* (all serovars)[c]
Bacillus spp. (except *B. anthracis*[i,l])	*Listeria* spp., *L. monocytogenes*[d]
B anthracis Sterne strain[e,j,k]	
Bacterioides fragilis	*Moraxella* spp.
Bartonella spp. (except *B. bacilliformis*)	*Mycobacterium* spp. other than *M. tuberculosis* complex[e]
Bordetella pertussis	*Mycobacterium tuberculosis* complex (except multi-drug resistant strains[e,f,h,l])
Borrelia spp. (serology only)	*Mycoplasma* spp.
Brucella spp. (serology only), *B. ovis*	*M. pneumoniae*[e]
Burkholderia spp (except *B. mallei*[l])	*Neisseria gonorrhoeae*
B. pseudomallei[b,e]	unspeciated Neisseria/*N. meningitidis*[b,e]
Campylobacter spp.	*Nocardia* spp.
Capnocytophaga spp.	*Pasteurella* spp.
Chlamydia spp. (except *C. psittaci*)	*Pseudomonas* spp.
Clostridium spp.[g]	*Rhodococcus equi*
Corynebacterium diphtheriae, C. pseudotuberculosis	*Salmonella enterica* serovars
Coxiella burnetii (serology only)	*Salmonella* Paratyphi A and B[b]
Dermatophilus congolensis	*Salmonella* Typhi[b,f]

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Table 3.1 *(continued)*

Organism	
Eikenella corrodens	*Serratia* spp.
Enterococcus spp.	*Shigella* spp.[b]
Erysipelothrix rhusiopathiae	*Staphylococcus* spp.
Escherichia coli including:	*Stenotrophomonas maltophilia*
enteropathogenic (EPEC)	*Streptobacillus moniliformis*
enteroaggregative (EAEC)	*Streptococcus* spp.
enterotoxigenic (ETEC)	*Treponema pallidum*[c]
uropathogenic (UPEC)	*Ureaplasma ureolyticum*
Shiga-like toxin producing (STEC)[b]	*Vibrio cholerae, V. parahaemolyticus, V. vulnificus*
Fusobacterium spp.	*Yersinia* spp. (except *Y. pestis*[i])
Gardnerella vaginalis	

a 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.

b Low infectious dose, high pathogenicity, common source of laboratory-acquired infections.

c Can penetrate intact skin.

d May be dangerous for pregnant women.

e Should be handled in a BSC due to high risk of aerosol spread.

f Vaccination, see Clause 2.6.4.

g *Clostridium botulinum* (botulism toxin-producing strains) — SSBA (see Clause 2.4 Note 1).

h Less than 5 000 cultures per year. See references in Clause 3.3.2.1. See Clause 3.8.

i SSBA (see Clause 2.4 Note 1).

j Use of face shields and masks is recommended.

k High risk of percutaneous infection.

l See also Table 3.5.

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Table 3.2 — Examples[a] of parasites of Risk Group 2 — Infectious stages only

Organism	
Acanthamoeba spp.	*Fasciola hepatica*
Angiostrongylus cantonensis	*Giardia* spp.
Anisakis spp.	*Hookworm* spp.
Ascaris lumbricoides	*Leishmania* spp.
Babesia spp.	*Loa*
Balamuthia mandrillaris	*Naegleria fowleri*
Brugia spp.	*Opisthorchis* spp.
Clonorchis sinensis	*Plasmodium* spp. (human and simian)
Cryptosporidium spp.	*Rodentolepis*
Cyclospora cayetanensis	*Schistosoma* spp.
Cystoisospora belli	*Strongyloides stercoralis*[b]
Diphyllobothrium latum	*Taenia saginata*
Echinococcus spp.	*Taenia solium*[c]
Entamoeba histolytica	*Toxocara* spp.
Enterobius vermicularis	*Toxoplasma gondii*[d]

[a] 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.

[b] Filariform larvae may cross intact skin.

[c] Accidental ingestion of eggs may lead to cysticercosis.

[d] May be teratogenic.

Table 3.3 — Examples[a] of fungi or fungal-like organisms of Risk Group 2

Organism	
Aspergillus fumigatus	*Microsporum* spp.
Candida albicans	*Scedosporium* spp.
Cryptococcus gattii	*Sporothrix schenckii*
Cryptococcus neoformans	*Trichophyton* spp.
Epidermophyton floccosum	

[a] 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.

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Table 3.4 — Examples[a] of viruses and prions of Risk Group 2

Virus			
Species	***Family: Genus***	**Previous/Other name**	**Notes**
Adenovirus	*Adenoviridae*		All types.
Alphaarterivirus equid	*Arteriviridae: Alphaarterivirus*	*Equine arteritis virus*	
Avian orthoavulavirus 1	*Paramyxoviridae: Orthoavulavirus*	*Newcastle disease virus*	Non-virulent enzootic strains only.
Avian metaavulavirus 2, 5, 6, 7, 8	*Paramyxoviridae: Metaavulavirus*	*Avian paramyxovirus 2, 5, 6, 7* and *8*	
Avian metapneumovirus	*Pneumoviridae: Metapneumovirus*		
Avian orthoavulavirus 9	*Paramyxoviridae: Orthoavulavirus*	*Avian paramyxovirus 9*	
Avian paraavulavirus 3 and *4*	*Paramyxoviridae: Orthoavulavirus*	*Avian paramyxovirus 3* and *4*	
Astrovirus	*Astroviridae: Astrovirus*		
Barmah Forest virus	*Togaviridae: Alphavirus*		
Bluetongue virus	*Reoviridae: Orbivirus*		Endemic strains.
Cardiovirus A	*Picornaviridae: Cardiovirus*	*Encephalomyocarditis virus*	
Cowpox virus	*Poxviridae: Orthopoxvirus*		
Dengue virus	*Flaviviridae: Flavivirus*		All serotypes.
Duck hepatitis B virus	*Hepadnaviridae: Avihepadnavirus*		
Enterovirus A to *L*	*Genus Picornaviridae: Enterovirus*	Coxsackievirus, Echovirus, Poliovirus, Human enterovirus	Includes coxsackievirus, echovirus, poliovirus and human enterovirus types in Enterovirus A to D and non-human enterovirus types in Enterovirus E to L. Immunization against poliovirus mandatory (see Appendix A).
Epizootic haemorrhagic disease virus	*Reoviridae: Orbivirus*		Endemic strains.
Feline calicivirus	*Caliciviridae: Vesivirus*		
Hepacivirus C	*Flaviviridae: Hepacivirus*	*Hepatitis virus C*	
Hepatitis delta virus	Unassigned: *Deltavirus*		
Hepatovirus A	*Picornaviridae: Hepatovirus*	*Hepatitis A virus*	Vaccination available (see Clause 2.6.4).
Human coronavirus 229E	*Coronaviridae: Alphacoronavirus*	HCoV-229E	
Human coronavirus OC43	*Coronaviridae: Betacoronavirus*	HCoV-OC43	Subspecies of Betacoronavirus 1.
Human alphaherpesvirus 1 and *2*	*Herpesviridae: Simplexvirus*	*Herpes simplex virus 1* and *2*	
Human alphaherpesvirus 3	*Herpesviridae: Varicellovirus*	*Varicella zoster virus*	

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Table 3.4 *(continued)*

Virus			
Species	***Family: Genus***	**Previous/Other name**	**Notes**
Human betaherpesvirus 5	*Herpesviridae: Cytomegalovirus*		May be teratogenic.
Human betaherpesvirus 6A, 6B and *7*	*Herpesviridae: Roseolovirus*		
Human gammaherpesvirus 4	*Herpesviridae: Lymphocryptovirus*	*Epstein-Barr virus*	
Human Hepatitis B	*Hepadnavirinae Orthohepadnovirus*		
Human gammaherpesvirus 8	*Herpesviridae: Rhadinovirus*	*Kaposi's sarcoma-associated virus*	
Human immunodeficiency virus 1 and *2*	*Retroviridae: Lentivirus*		Serology, tests not involving propagation or culture.
Human metapneumovirus	*Pneumoviridae: Metapneumovirus*		
Human orthopneumovirus	*Pneumoviridae: Orthopneumovirus*	*Human respiratory syncytial virus*	
Human orthorubulavirus 2 and *4*	*Paramyxoviridae: Orthorubulavirus*	*Human parainfluenza virus 2* and *4*	
Human papillomavirus	*Papillomaviridae*		
Human polyomavirus 1	*Polyomaviridae: betapolyomavirus*	*BK polyomavirus, BK virus*	
Human polyomavirus 2	*Polyomaviridae: betapolyomavirus*	*JC polyomavirus, JC virus*	
Human respirovirus 1 and *3*	*Paramyxoviridae: Respirovirus*	*Human parainfluenza 1* and *3*	
Influenza	*Orthomyxoviridae*		All strains and candidate vaccine strains except those specified in Table 3.7. Vaccination available (see Clause 2.6.4).
Japanese encephalitis virus – Nakayama and other vaccine strains	*Flaviviridae: Flavivirus*		Vaccination available (see Clause 2.6.4).
Kokobera virus	*Flaviviridae: Flavivirus*		
Lymphocytic choriomeningitis mammarenavirus	*Arenaviridae: Mammarenavirus*	LCMV	Non neurotropic and laboratory adapted strains (see also Table 3.7).
Macaca mulatta polyomavirus 1	Polyomaviridae Betapolyomavirus	*Simian virus 40, SV40*	
Mammalian orthoreovirus	*Reoviridae: Orthoreovirus*	*Mammalian reovirus*	
Measles morbillivirus	*Paramyxoviridae: Morbillivirus*	*Measles virus*	Vaccination available (see Clause 2.6.4).
Menangle pararubulavirus	*Paramyxoviridae: Pararubulavirus*	*Menangle rubulavirus*	
Middle East respiratory syndrome-related coronavirus	*Coronaviridae: Betacoronavirus*	MERS-CoV	Serology and tests not involving propagation or culture.

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Table 3.4 *(continued)*

Virus			
Species	***Family: Genus***	**Previous/Other name**	**Notes**
Mumps orthorubulavirus	*Paramyxoviridae: Orthorubulavirus*	*Mumps rubulavirus*	Vaccination available (see Clause 2.6.4).
Molluscum contagiosum virus	*Poxviridae: Molluscipoxvirus*		
Murine respirovirus	*Paramyxoviridae: Respirovirus*	*Sendai virus*	
Murine coronavirus	*Coronaviridae: Betacoronavirus*	M-CoV	Mouse hepatitis virus.
Murray Valley encephalitis virus	*Flaviviridae: Flavivirus*		
Norwalk virus	*Caliciviridae: Norovirus*	*Norovirus*	All serotypes, genogroups, strains and isolates.
Orf virus	*Poxviridae: Parapoxvirus*		
Orthohepevirus A	*Hepeviridae: Orthohepevirus*	*Hepatitis virus E*	Risk to pregnant women.
Parechovirus A, B, C and *D*	*Picornaviridae: Parechovirus*	*Human parechovirus, Ljungan virus, Sebokele virus 1* and *Ferret parechovirus*	
Pegivirus C	*Flaviviridae: Pegivirus*	*GB virus C, Hepatitis virus G*	
Porcine epidemic diarrhoea virus	*Coronaviridae: Alphacoronavirus*	PEDV	
Primate erythroparvovirus 1	*Parvoviridae: Erythroparvovirus*	*Human parvovirus, Parvovirus B19*	May be teratogenic.
Primate T-lymphotropic virus 1 and *2*	*Retroviridae: Deltareovirus*	*Human T-lymphotropic virus 1* and *2*	Serology, tests not involving propagation or culture.
Pseudocowpox virus	*Poxviridae: Parapoxvirus*	*Milkers nodule virus*	
Rabbit haemorrhagic disease virus	*Caliciviridae: Lagovirus*		
Rhinovirus A, B and *C*	*Picornaviridae: Enterovirus*		
Ross River virus	*Togaviridae: Alphavirus*		
Rotavirus A to J	*Reoviridae: Rotavirus*		
Rubella virus	*Matonaviridae: Rubivirus*		Vaccination available (see Clause 2.6.4). May be teratogenic.
Sapporo virus	*Caliciviridae: Sapovirus*		
Saumarez Reef virus	*Flaviviridae: Flavivirus*		
Semliki Forest virus	*Togaviridae: Alphavirus*		
Severe acute respiratory syndrome coronavirus (SARS CoV) – related viruses	*Coronaviridae: Betacoronavirus*	SARS Coronavirus	Serology and tests not involving propagation or culture. SSBA (see Clause 2.4 Note 1).
Simian immunodeficiency virus	*Retroviridae; Lentivirus*		Serology, tests not involving propagation or culture.
Tacaribe virus complex	*Arenaviridae: Mammarenavirus*		

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Table 3.4 *(continued)*

Virus			
Species	***Family: Genus***	**Previous/Other name**	**Notes**
Vaccinia virus	*Poxviridae: Orthopoxvirus*		Vaccination available (see Clause 2.6.4). May be dangerous for pregnant women.
West Nile virus – Kunjin strain	*Flaviviridae: Flavivirus*		
West Nile virus – Sarafend strain	*Flaviviridae: Flavivirus*		
Zika virus	*Flaviviridae: Flavivirus*		May be teratogenic.
Prions			
Gerstmann-Sträussler-Scheinker syndrome			
Creutzfeldt-Jakob disease agent			See Clauses 3.7 and 13.2.1.
Kuru disease agent			See Clauses 3.7 and 13.2.1.

[a] 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.

Table 3.5 — Examples[a] of bacteria of Risk Group 3

Organism
Bacillus anthracis[f]
Bartonella bacilliformis
Burkholderia mallei
Brucella spp. (except serology (see Table 3.1) and *B. ovis*)
Chlamydia psittaci (syn *Chlamydophila psittaci*)
Coxiella burnetii (cultures, animal work and concentrates)[b,c]
Francisella tularensis (Type A)[f]
Mycobacterium tuberculosis complex[c,d,e]
Rickettsia spp.
Yersinia pestis[f]

[a] This list is not exhaustive.

[b] May be dangerous for pregnant women.

[c] Vaccination, see Clause 2.6.4.

[d] Respiratory protection should be considered.

[e] Greater than 5 000 cultures per year or reference role. Culture, smear microscopy including known multi-drug resistant strains. Identification and drug susceptibility testing. See references in Clause 3.3.2.1. See Clause 3.8.

[f] SSBA (see Clause 2.4 Note 1).

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Table 3.6 — Examples[a] of fungi or fungal-like organisms of Risk Group 3[c]

Organism
Blastomyces dermatitidis
Cladophialophora bantiana
Coccidioides immitis[b]
Coccidioides posadasii
Histoplasma spp.
Paracoccidioides brasiliensis
Talaromyces marneffei (syn *Penicillium marneffei*)

[a] This list is not exhaustive.

[b] May be dangerous for pregnant women.

[c] The mycelial forms of these fungi produce highly infectious conidia. The use of plate cultures should be avoided.

Table 3.7 — Examples[a] of viruses of Risk Group 3

Virus			
Species	***Family: Genus***	**Previous/Other name**	**Notes**
Australian Bat Lyssa virus	*Rhabdoviridae Lyssavirus*		Vaccination available (see Clause 2.6.4).
Avian orthoavulavirus 1	*Paramyxoviridae: Orthoavulavirus*	*Newcastle disease virus*	Exotic strains.
Avian Influenza virus	*Orthomyxoviridae*	Highly pathogenic strains	Propagative activities. SSBA (see Clause 2.4 Note 1).
Chikungunya	*Togaviridae: Alphavirus*		
Eastern equine encephalitis virus	*Togaviridae: Alphavirus*		
Hantaan orthohantavirus	*Bunyaviridae; Orthohantavirus*	*Hantaan and related strains*	
Human immunodeficiency virus 1 and *2*	*Retroviridae: Lentivirus*		Propagative *in vitro* activities.
Influenza virus	*Orthomyxoviridae*	Highly pathogenic strains	Vaccination available (see Clause 2.6.4). SSBA (see Clause 2.4 Note 1).
Japanese encephalitis virus	*Flaviviridae: Flavivirus*		Vaccination available (see Clause 2.6.4).
Lymphocytic choriomeningitis mammarenavirus	*Arenaviridae: Mammarenavirus*	LCMV Neurotropic strains	
Mapeura pararubulavirus	*Paramyxoviridae: Pararubulavirus*	*Mapeura rubulavirus*	
Middle East respiratory syndrome-related coronavirus	*Coronaviridae: Betacoronavirus*	MERS-CoV	Propagative *in vitro* activities.
Oropouche orthobunyavirus	*Bunyaviridae; Orthobunyavirus*		
Primate T-lymphotropic virus 1 and *2*	*Retroviridae: Deltareovirus*	*Human T-lymphotropic virus 1* and *2*	Propagative *in vitro* activities.

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Table 3.7 *(continued)*

Virus			
Species	***Family: Genus***	**Previous/Other name**	**Notes**
Rabies lyssavirus	*Rhabdovirus; Lyssavirus*	Fixed strain only	
Rift Valley Fever phlebovirus	*Pheniuviridae; phlebovirus*		
Severe acute respiratory syndrome coronaviru (SARS CoV) – related viruses	*Coronaviridae: Betacoronavirus*	SARS-coronavirus	Propagative *in vitro* activities. SSBA (see Clause 2.4 Note 1).
Simian immunodeficiency virus	*Retroviridae: Lentivirus*		
St Louis Encephalitis virus	*Flaviviridae: Flavivirus*		Propagative *in vitro* activities.
Tick-borne viruses	*Flaviviridae: Flavivirus*		
Venezuelan equine encephalitis virus	*Togaviridae: Alphavirus*		
Western equine encephalitis virus	*Togaviridae: Alphavirus*		
West Nile virus	*Flaviviridae: Flavivirus*		
Yellow fever virus	*Flaviviridae: Flavivirus*		Vaccination available (see Clause 2.6.4). May be teratogenic. SSBA (see Clause 2.4 Note 1).

[a] This list is not exhaustive.

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Table 3.8 — Examples[a] of viruses in Risk Group 4

Virus			
Species	***Family: Genus***	**Previous/Other name**	**Notes**
Crimean-Congo haemorrhagic Orthonairovirus	*Bunyaviridae; Orthonairovirus*		
Ebola virus	*Filoviridae*		
Guanarito virus	*Arenaviridae; Arenavirus*		SSBA (see Clause 2.4 Note 1)
Hazara orthonairovirus	*Bunyaviridae; Orthonairovirus*		
Hendra virus	*Paramyxoviridae: Henipavirus*		
Junin virus	*Arenaviridae; Arenavirus*		
Kyasanur Forest Virus	*Flaviridae; Flavirus*		
Lassa virus	*Arenavirus; Arenavirus*		
Macacine alphaherpesvirus	*Herpes viridae; Alphaherpes virus*	*Herpes virus simiae (B virus)*	
Machupo virus	*Arenaviridae; Arenavirus*		
Marburg virus	*Filoviridae*		SSBA (see Clause 2.4 Note 1).
Mopeia viruses	*Arenaviridae; Arenavirus*		
Nipah virus	*Paramyxoviridae: Henipavirus*		
Omsk Haemorrhagic virus	*Flaviviridae: Flavivirus*		
Sabia virus	*Arenaviridae; Arenavirus*		
Tick-borne encephalitis virus	*Flaviviridae: Flavivirus*		

[a] This list is not exhaustive.

Table 3.9 — Examples[a] of plant pathogens of Plant Risk Group 2[b]

Organism
Onion smut (*Urocystis magica*) — soilborne, under control
Citrus canker (*Xanthomonas axonopodis*) — exotic, splash-dispersed
Fire blight (*Erwinia amylovora*) — exotic, needs vector
Plum pox potyvirus — exotic, needs vector
Potato cyst nematode (*Globodera rostochiensis* and *G. pallida*) — soilborne, under control or exotic
Pierce's disease (*Xylella fastidiosa*) — exotic, needs vector
Chestnut blight (*Cryphonectria parasitica*) — under control, splash-dispersed
Pine pitch canker (*Fusarium circinatum*) — exotic, splash-dispersed

[a] This list is not exhaustive.

[b] Use of plant pathogens may also be subject to regulation by state and territory or relevant Australian or New Zealand government authorities.

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Table 3.10 — Examples[a] of plant pathogens of Plant Risk Group 3[b]

Organism
Karnal bunt (*Tilletia indica*) — exotic, wind borne
Grapevine rust (*Phakopsora euvitis*) — exotic, wind borne
Sudden oak death (*Phytophthora ramorum*) — exotic, wind borne
Potato late blight (*Phytophthora infestans*) exotic strains — wind borne
Guava rust/eucalyptus rust/myrtle rust (*Austropuccinia psidii*) — required for States not already affected, and for exotic strains, wind borne

[a] This list is not exhaustive.

[b] Use of plant pathogens may also be subject to regulation by state and territory or relevant Australian or New Zealand government authorities.

Table 3.11 — Examples[a] of aquatic pathogens of Risk Group 2[b]

Organism	Family
Abalone herpesvirus	*Malacoherpesviridae*
Aphanomyces invadans	*Leptolegniaceae*
Aeromonas salmonicida subspp. (excluding subsp. salmonicida)	*Aeromonadaceae*
Batrachochytrium dendrobatidis	Not assigned
Bonamia exitiosa	*Haplosporidiidae*
Bonamia sp.	*Haplosporidiidae*
Edwardsiella ictaluri	*Enterobacteriaceae*
Epizootic haematopoietic necrosis virus	*Iridoviridae*
Gill-associated virus	*Roniviridae*
Infectious hypodermal and haematopoietic necrosis virus	*Parvoviridae*
Macrobrachium rosenbergii nodavirus	*Nodaviridae*
Marteilia sydneyi	*Marteiliidae*
Nervous necrosis virus	*Nodaviridae*
Ostreid herpesvirus-1 including µVar	*Malacoherpesviridae*
Perkinsus olseni	*Perkinsidae*
Ranavirus	*Iridoviridae*

[a] This list is not exhaustive.

[b] Use of aquatic pathogens may also be subject to regulation by state and territory or relevant Australian or New Zealand government authorities.

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Table 3.12 — Examples[a] of aquatic pathogens of Risk Group 3[b,c,d]

Organism	Family
Aeromonas salmonicida subsp. *salmonicida*	*Aeromonadaceae*
Aphanomyces astaci	*Leptolegniaceae*
Bonamia ostreae	*Haplosporidiidae*
Candidatus Hepatobacter penaei	*Rhizobiaceae*
Channel catfish virus	*Alloherpesviridae*
European catfish virus/European sheatfish virus	*Iridoviridae*
Grouper iridovirus	*Iridoviridae*
Gyrodactylus salaris	*Gyrodactylidae*
Infectious haematopoietic necrosis virus	*Rhabdoviridae*
Infectious myonecrosis virus	*Totiviridae*
Infectious pancreatic necrosis virus	*Birnaviridae*
Infectious salmon anaemia virus	*Orthomyxoviridae*
Koi herpesvirus	*Alloherpesviridae*
Laem-Singh virus	Not assigned
Marteilia refringens	*Marteiliidae*
Marteilioides chungmuensis	*Marteiliidae*
Mikrocytos mackini	*Mikrocytiidae*
Myxobolus cerebralis	*Myxobolidae*
Perkinsus marinus	*Perkinsidae*
Piscirickettsia salmonis	*Piscirickettsiaceae*
Red sea bream iridovirus	*Iridoviridae*
Renibacterium salmoninarum	*Micrococcaceae*
Salmonid alphavirus	*Togaviridae*
Spring viraemia of carp virus	*Rhabdoviridae*
Taura syndrome virus	*Dicistroviridae*
Vibrio parahaemolyticus (VP_{AHPND}[e])	*Vibrionaceae*
Viral haemorrhagic septicaemia virus	*Rhabdoviridae*
Xenohaliotis californiensis	*Anaplasmataceae*
Yellow head virus	*Roniviridae*
Yersinia ruckeri — Hagerman strain	*Enterobacteriaceae*

[a] This list is not exhaustive.

[b] Use of aquatic pathogens may also be subject to regulation by state and territory or relevant Australian or New Zealand government authorities.

[c] For diagnostic purposes, excluding culture of pathogens, organisms categorized as Risk Group 3 may be handled in PC2 facilities (see Clause 4.3.3) with permission from the relevant authority.

[d] A number of examples of megalocytiviruses are listed in Biosecurity Australia, *Importation of freshwater ornamental fish: review of biosecurity risks associated with gourami iridovirus and related viruses – Provisional final import risk analysis report*, Department of Agriculture, Canberra, Australia, 2010, pp. 7–8. At least one of the viruses listed in this publication have already been detected in Australia in aquaculture and others are recorded in imported ornamental fish. Before work commences with such viruses, advice should be sought from relevant state, territory or Australian or New Zealand government authorities (see Bibliography, References 1.31 and 1.32).

[e] VPA_{HPND} is a newly emerging disease of farmed prawns in Asia — information on this disease is changing on a regular basis.

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