

Table S1.1. Virus detected in Antarctic birds by means of serological techniques

ORDER	FAMILY	GENUS	VIRUS	HOST	SAMPLE TYPE	REFERENCE
Unassigned	Orthomyxoviridae	Influenzavirus	Influenza A Virus	<i>Pygoscelis adeliae</i>	Serum	Morgan and Westbury 1981, 1988
				<i>Pygoscelis adeliae</i>	Serum	Austin and Webster 1993
				<i>Pygoscelis adeliae</i>	Serum	Wallensten et al. 2006
				<i>Pygoscelis adeliae</i> , <i>Chionis albus</i>	Cloacal and tracheal swabs	Hurt et al. 2014
				<i>Pygoscelis adeliae</i>	Serum	Baumeister et al. 2004
				<i>P. antarctica</i> , <i>P. papua</i>	Serum	Baumeister et al. 2004
				<i>Stercorarius macormicki</i>	Serum	Austin and Webster 1993
				<i>Stercorarius macormicki</i>	Serum and cloacal swabs	Miller et al. 2008
				<i>Stercorarius macormicki</i>	Serum	Baumeister et al. 2004
				<i>Macronectes giganteus</i>	Serum	Baumeister et al. 2004
				<i>Pygoscelis adeliae</i>	Serum	Gardner et al. 1997
				<i>Pygoscelis adeliae</i>	Serum	Watts et al. 2009
				<i>Pygoscelis adeliae</i>	Serum	Grimaldi et al. 2018
				<i>Aptenodytes forsteri</i>	Serum	Gardner et al. 1997
				<i>Aptenodytes forsteri</i>	Serum	Watts et al. 2009
				<i>Stercorarius macormicki</i>	Serum and cloacal swab	Miller et al. 2008
				<i>Stercorarius macormicki</i>	Serum	Watts et al. 2009
				<i>Stercorarius macormicki</i>	Serum and cloacal swabs	Miller et al. 2008
				<i>Stercorarius macormicki</i>	Serum and cloacal swabs	Morgan and Westbury 1981, 1988
Mononegavirales	Paramyxoviridae	Avulavirus	Avian paramyxovirus	<i>Pygoscelis adeliae</i>	Serum	Morgan 1981 cited within Morgan and Westbury 1988
				<i>Pygoscelis adeliae</i>	Serum and cloacal swabs	Austin and Webster 1993
				<i>Pygoscelis adeliae</i>	Serum and tracheal/cloacal swabs	Thomazelli et al. 2010
				<i>Pygoscelis adeliae</i>	Serum	Grimaldi et al. 2018
				<i>Pygoscelis adeliae</i>	Serum	Olivares et al. 2019
				<i>P. antarctica</i> , <i>P. papua</i>	Serum	Alexander et al. 1989
				<i>P. antarctica</i> , <i>P. papua</i>	Serum and tracheal/cloacal swabs	Thomazelli et al. 2010
				<i>P. antarctica</i> , <i>P. papua</i>	Serum	Olivares et al. 2019
				<i>Stercorarius macormicki</i>	Serum	Austin and Webster 1993
				<i>Stercorarius macormicki</i>	Serum and cloacal swabs	Miller et al. 2008
				<i>Pygoscelis papua</i> , <i>P. antarctica</i> , <i>P. adeliae</i>	Serum	Olivares et al. 2019

FAMILY	GENUS	SPECIES / UNASSIGNED SPECIES	VIRUS	HOST	SAMPLE TYPE	REFERENCE
Paramyxoviridae	Orthoavulavirus	Avian orthoavulavirus 1	avian paramyxovirus 1	<i>Pygoscelis adeliae</i>	Serum and tracheal/cloacal swabs	Thomazelli et al. 2010
	Orthoavulavirus	Avian orthoavulavirus 17	Antarctic penguin virus A	<i>Pygoscelis papua</i> , <i>P. antarcticus</i> , <i>P. adeliae</i>	Serum and cloacal swabs	Neira et al. 2017, Olivares et al. 2019, Wille et al. 2019
	Orthoavulavirus	Avian orthoavulavirus 18	Antarctic penguin virus B	<i>Pygoscelis papua</i> , <i>P. antarcticus</i> , <i>P. adeliae</i>	Serum and cloacal swabs	Neira et al. 2017, Olivares et al. 2019, Wille et al. 2019
	Orthoavulavirus	Avian orthoavulavirus 19	Antarctic penguin virus C	<i>Pygoscelis papua</i> , <i>P. antarcticus</i> , <i>P. adeliae</i>	Serum and cloacal swabs	Neira et al. 2017, Olivares et al. 2019, Wille et al. 2019
	Metaavulavirus	Avian metaavulavirus 10	avian paramyxovirus 10	<i>Pygoscelis adeliae</i>	Cloacal swabs	Neira et al. 2017, Olivares et al. 2019, Wille et al. 2019
Orthomyxoviridae	Alphainfluenzavirus	Influenza A virus	influenza A virus [H5N5; H11N2; H4N7]	<i>Pygoscelis antarcticus</i> , <i>P. adeliae</i> , <i>Macronectes giganteus</i>	Serum and tracheal/cloacal swabs; Tracheal and cloacal	Hurt et al. 2014, Hurt et al. 2016, Barriga et al. 2016, de Souza et al. 2017
Papillomaviridae	Trieseptilonpapillomavirus	Trieseptilonpapillomavirus 1	Pygoscelis adeliae papillomavirus	<i>Pygoscelis adeliae</i>	Faeces, Cloacal swab	Varsani et al. 2014, Van Doorslaer et al. 2017
Polyomaviridae	Gammapolyomavirus	Pygoscelis adeliae polyomavirus 1	Adélie penguin polyomavirus	<i>Pygoscelis adeliae</i>	Faeces	Varsani et al. 2015
Adenoviridae	Siadenovirus	Penguin siadenovirus A	chinstrap penguin adenovirus 2	<i>Pygoscelis antarcticus</i> , <i>P. papua</i>	Lung, liver, kidney, heart, intestine, trachea samples	Lee et al. 2014, 2016
	Siadenovirus	Skua siadenovirus A	South Polar skua adenovirus 1	<i>Stercorarius maccormicki</i>	Kidney	Park et al. 2012
Poxviridae	Avipoxvirus	unclassified	Avipoxvirus isolate Antarctica	<i>Macronectes giganteus</i>	Tissue samples from nodular lesions	Shearn-Bochsler et al. 2007
Anelloviridae	Lambdatorquevirus	Torque teno seal virus 8	torque teno Leptonychotes weddellii virus 1	<i>Stercorarius maccormicki</i>	Faeces	Fahsbender et al. 2017
Picornaviridae	Megrivirus	Megrivirus E	penguin megrivirus	<i>Pygoscelis adeliae</i>	Faeces	Yinda et al. 2019
	Unassigned	unclassified	Pingu virus	<i>Pygoscelis papua</i>	Serum and cloacal swabs	de Souza et al. 2019
	Unassigned	unclassified	Scott virus	<i>Pygoscelis antarcticus</i>	Cloacal swab	Wille et al. 2020
	Unassigned	unclassified	Amundsen virus	<i>Pygoscelis antarcticus</i>	Cloacal swab	Wille et al. 2020
	Unassigned	unclassified	Ross virus	<i>Pygoscelis antarcticus</i>	Cloacal swab	Wille et al. 2020
	Unassigned	unclassified	Shirase virus	<i>Pygoscelis adeliae</i>	Cloacal swab	Wille et al. 2020
	Unassigned	unclassified	Wedell virus 1	<i>Pygoscelis antarcticus</i>	Cloacal swab	Wille et al. 2020
	Unassigned	unclassified	Wedell virus 2	<i>Pygoscelis antarcticus</i>	Cloacal swab	Wille et al. 2020

Table S1.2. Virus detected in Antarctic birds by PCR – polymerase chain reaction, HTS – high throughput sequencing

FAMILY	GENUS	SPECIES / UNASSIGNED SPECIES	VIRUS	HOST	SAMPLE TYPE	REFERENCE
<i>Picobirnaviridae</i>	<i>Picobirnavirus</i>	unclassified	Hilary virus	<i>Pygoscelis adeliae</i>	Cloacal swab	Wille et al. 2020
<i>Circoviridae</i>	<i>Circovirus</i>	unclassified	Penguin circovirus	<i>Pygoscelis adeliae</i>	Faeces	Morandini et al. 2020
<i>Phenuviridae*</i>	Unassigned	unclassified	Ronne virus-Antarctica *	<i>Ixodes uriae</i>	<i>Ixodes uriae</i>	Pettersen et al. 2020; Wille et al. 2020
<i>Phenuviridae*</i>	Unassigned	unclassified	Piguzov virus-Antarctica*	<i>Ixodes uriae</i>	<i>Ixodes uriae</i>	Pettersen et al. 2020; Wille et al. 2020
<i>Nairoviridae</i>	Unassigned	unclassified	Taggart virus	<i>Ixodes uriae</i> (<i>Pygoscelis antarcticus</i>)	<i>Ixodes uriae</i>	Pettersen et al. 2020; Wille et al. 2020
<i>Flaviviridae</i>	<i>Flavivirus</i>	unclassified	Gadget gully virus	<i>Ixodes uriae</i> (<i>Pygoscelis papua</i>)	<i>Ixodes uriae</i>	Pettersen et al. 2020; Major et al. 2009
<i>Herpesviridae</i>	<i>Alphaherpesvirinae</i>	unclassified	Oates virus	<i>Pygoscelis antarcticus</i>	Cloacal swab	Wille et al. 2020
<i>Reoviridae</i>	<i>Rotavirus</i>	unclassified	Shackleton virus	<i>Pygoscelis papua</i>	Cloacal swab	Wille et al. 2020
	<i>Rotavirus</i>	unclassified	Mawson virus	<i>Pygoscelis adeliae</i>	Cloacal swab	Wille et al. 2020
	<i>Coltivirus</i>	unclassified	Femes virus	<i>Pygoscelis papua</i>	Cloacal swab and <i>Ixodes uriae</i>	Wille et al. 2020; Pettersen et al. 2020
<i>Astroviridae</i>	Unassigned	unclassified	Penguin astrovirus	<i>Pygoscelis antarcticus</i>	Cloacal swab	Wille et al. 2020; Grimaldi et al. 2015
<i>Coronaviridae</i>	<i>Deltacoronavirus</i>	unclassified	novel wild bird deltacoronavirus	<i>Pygoscelis antarcticus</i>	Cloacal swab	Wille et al. 2020
<i>Caliciviridae</i>	<i>Naravirus</i>	unclassified	Wilkes virus	<i>Pygoscelis adeliae</i>	Cloacal swab	Wille et al. 2020

References Tables S1.1. and S1.2.

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Table S2.1 Viral studies conducted or reported on Antarctic pinnipeds by serological, culture, PCR, or HTS techniques

Reports found here include those with positive or negative results. References shown with an asterisk (*) reflect those studies undertaken for the purpose of virus discovery. The agents found in these studies may or may not represent pathogens as the information regarding infectious diseases in Antarctic wildlife is incomplete and these are recent discoveries. The remaining reports were conducted for the purpose of either a disease investigation or health assessment.

Abbreviations used: N – number of samples tested, PCR – polymerase chain reaction, HTS – high throughput sequencing, VNA – viral neutralizing antibody, qPCR and RT-PCR – quantitative (PCR) and reverse transcriptase polymerase chain reaction, iEIA – indirect enzyme immunoassay, iELISA – indirect enzyme-linked immunosorbent assay.

FAMILY	GENUS	VIRUS	HOST	SAMPLE TYPE	N (% POS)	REGION	REFERENCE
??	??	probable viral etiology	crabeater seal (<i>Lobodon carcinophagus</i>)	none taken	testing not performed	Crown Prince Gustav Channel	Laws & Taylor, 1957
<i>Paramyxoviridae</i>	<i>Morbillivirus</i>	Canine distemper virus (CDV-like)	Weddell seal (<i>Leptonychotes weddellii</i>)	serum/VNA	19 (0%)	Antarctic (not specified)	Osterhaus <i>et al.</i> 1988
		Canine distemper virus (CDV-like)	crabeater seal (<i>Lobodon carcinophagus</i>)	serum/VNA	96 (33%)	Antarctic Peninsula	Bengtson, <i>et al.</i> , 1991
		Canine distemper virus (CDV-like)	Weddell seal (<i>Leptonychotes weddellii</i>)	serum/VNA	5 (0%)	Antarctic Peninsula	Bengtson, <i>et al.</i> , 1991
		Canine distemper virus (CDV-like)	leopard seal (<i>Hydrurga leptonyx</i>)	serum/VNA	3 (0%)	Antarctic Peninsula	Bengtson, <i>et al.</i> , 1991
		Canine distemper virus (CDV)	crabeater seal (<i>Lobodon carcinophagus</i>)	serum/VNA	13 (23%)	Eastern Antarctica	Lynch, <i>et al.</i> , 1999
		Phocine distemper virus-1 (PDV-1)	crabeater seal (<i>Lobodon carcinophagus</i>)	serum/VNA	13 (0%)	Eastern Antarctica	Lynch, <i>et al.</i> , 1999

		dolphin morbillivirus	crabeater seal (<i>Lobodon carcinophagus</i>)	serum/VNA	13 (0%)	Eastern Antarctica	Lynch, <i>et al.</i> , 1999
		porpoise morbillivirus	crabeater seal (<i>Lobodon carcinophagus</i>)	serum/VNA	13 (0%)	Eastern Antarctica	Lynch, <i>et al.</i> , 1999
		Phocine distemper virus (PDV)	Weddell seal (<i>Leptonychotes weddellii</i>)	serum/VNA	25 (0%)	Weddell Sea	Harder, <i>et al.</i> , 1991
		Phocine distemper virus (PDV)	crabeater seal (<i>Lobodon carcinophagus</i>)	serum/VNA	3 (0%)	Weddell Sea	Harder, <i>et al.</i> , 1991
		Canine distemper virus (CDV)	Weddell seal (<i>Leptonychotes weddellii</i>)	serum/VNA	25 (0%)	Weddell Sea	Harder, <i>et al.</i> , 1991
		Canine distemper virus (CDV)	crabeater seal (<i>Lobodon carcinophagus</i>)	serum/VNA	3 (0%)	Weddell Sea	Harder, <i>et al.</i> , 1991
		Phocine distemper virus (PDV)	Weddell seal (<i>Leptonychotes weddellii</i>)	serum/VNA	18 (0%)	Weddell Sea	Hentschke, pers. comm. in Stenvers, <i>et al.</i> , 1992
		Phocine distemper virus (PDV)	crabeater seal (<i>Lobodon carcinophagus</i>)	serum/VNA	2 (0%)	Weddell Sea	Hentschke, pers. comm. in Stenvers, <i>et al.</i> , 1992
		Canine distemper virus (CDV)	Weddell seal (<i>Leptonychotes weddellii</i>)	serum/VNA	56 (0%)	Vestfold Hills	McFarlane, 2009
		Phocine distemper virus (PDV)	Weddell seal (<i>Leptonychotes weddellii</i>)	serum/VNA	56 (9%)	Vestfold Hills	McFarlane, 2009
		Phocine distemper virus (PDV)	Weddell seal (<i>Leptonychotes weddellii</i>)	lung tissue/RT-PCR	1 (0%)	Vestfold Hills	McFarlane, 2009

		Phocine distemper virus (PDV)	Weddell seal (<i>Leptonychotes weddellii</i>)	serum/VNA	7 (57%)	McMurdo Sound	Slade, 2008 pers comm in McFarlane, 2009
		Canine distemper virus (CDV)	Weddell seal (<i>Leptonychotes weddellii</i>)	serum	56 (0%)	McMurdo Sound	Yochem, <i>et al.</i> , 2009
		Phocine distemper virus (PDV)	Weddell seal (<i>Leptonychotes weddellii</i>)	serum	81 (0%)	McMurdo Sound	Yochem, <i>et al.</i> , 2009
		dolphin morbillivirus	Weddell seal (<i>Leptonychotes weddellii</i>)	serum	81 (0%)	McMurdo Sound	Yochem, <i>et al.</i> , 2009
		porpoise morbillivirus	Weddell seal (<i>Leptonychotes weddellii</i>)	serum	81 (0%)	McMurdo Sound	Yochem, <i>et al.</i> , 2009
		Phocine distemper virus (PDV)	Weddell seal (<i>Leptonychotes weddellii</i>)	serum/VNA	20 (0%)	Queen Maud Land	Tryland, <i>et al.</i> , 2012
		Phocine distemper virus (PDV)	Ross seal (<i>Ommatophoca rossi</i>)	serum/VNA	20 (0%)	Queen Maud Land	Tryland, <i>et al.</i> , 2012
		Phocine distemper virus (PDV)	crabeater seal (<i>Lobodon carcinophagus</i>)	serum/VNA	9 (0%)	Queen Maud Land	Tryland, <i>et al.</i> , 2012
		Canine distemper virus (CDV)	Weddell seal (<i>Leptonychotes weddellii</i>)	serum/VNA	20 (0%)	Queen Maud Land	Tryland, <i>et al.</i> , 2012
		Canine distemper virus (CDV)	Ross seal (<i>Ommatophoca rossi</i>)	serum/VNA	20 (0%)	Queen Maud Land	Tryland, <i>et al.</i> , 2012
		Canine distemper virus (CDV)	crabeater seal (<i>Lobodon carcinophagus</i>)	serum/VNA	9 (0%)	Queen Maud Land	Tryland, <i>et al.</i> , 2012

		dolphin morbillivirus (DMV-16a)	Weddell seal (<i>Leptonychotes weddellii</i>)	serum/VNA	20 (0%)	Queen Maud Land	Tryland, <i>et al.</i> , 2012
		dolphin morbillivirus (DMV-16a)	Ross seal (<i>Ommatophoca rossi</i>)	serum/VNA	20 (0%)	Queen Maud Land	Tryland, <i>et al.</i> , 2012
		dolphin morbillivirus (DMV-16a)	crabeater seal (<i>Lobodon carcinophagus</i>)	serum/VNA	9 (0%)	Queen Maud Land	Tryland, <i>et al.</i> , 2012
<i>Orthomyxoviridae</i>	<i>Alphainfluenzavirus</i>	Influenza A	Weddell seal (<i>Leptonychotes weddellii</i>)	serum/iEIA	237 (0%)	Cape Armitage, Ross Island	Austin & Webster, 1993
		Influenza A	Weddell seal (<i>Leptonychotes weddellii</i>)	nasal swabs/culture	237 (0%)	Cape Armitage, Ross Island	Austin & Webster, 1993
		Influenza A	crabeater seal (<i>Lobodon carcinophagus</i>)	serum/ELISA	13 (0%)	Eastern Antarctica	Lynch, <i>et al.</i> , 1999
		Influenza A	Weddell seal (<i>Leptonychotes weddellii</i>)	serum/ELISA	56 (0%)	Vestfold Hills	McFarlane, 2009
<i>Herpesviridae</i>	<i>Varicellovirus</i>	Phocine herpesvirus 1 (PhHV-1)	Weddell seal (<i>Leptonychotes weddellii</i>)	serum/VNA	25 (100%)	Weddell Sea	Harder, <i>et al.</i> , 1991
			crabeater seal (<i>Lobodon carcinophagus</i>)	serum/VNA	3 (100%)	Weddell Sea	Harder, <i>et al.</i> , 1991
		Feline herpesvirus (FHV-1)	Weddell seal (<i>Leptonychotes weddellii</i>)	serum/VNA	25 (12%)	Weddell Sea	Harder, <i>et al.</i> , 1991
			crabeater seal (<i>Lobodon carcinophagus</i>)	serum/VNA	3 (0%)	Weddell Sea	Harder, <i>et al.</i> , 1991

		Canine herpesvirus (CHV)	Weddell seal (<i>Leptonychotes weddellii</i>)	serum/VNA	25 (64%)	Weddell Sea	Harder, <i>et al.</i> , 1991
			crabeater seal (<i>Lobodon carcinophagus</i>)	serum/VNA	3 (0%)	Weddell Sea	Harder, <i>et al.</i> , 1991
		Seal herpesvirus (SeHV)	Weddell seal (<i>Leptonychotes weddellii</i>)	serum/VNA	18 (2 different strains: 28 & 72%)	Weddell Sea	Stenvers, <i>et al.</i> , 1992
			crabeater seal (<i>Lobodon carcinophagus</i>)	serum/VNA	2 (0%)	Weddell Sea	Stenvers, <i>et al.</i> , 1992
		Feline herpesvirus (FHV-1)	Weddell seal (<i>Leptonychotes weddellii</i>)	serum/VNA	18 (39%)	Weddell Sea	Stenvers, <i>et al.</i> , 1992
			crabeater seal (<i>Lobodon carcinophagus</i>)	serum/VNA	2 (0%)	Weddell Sea	Stenvers, <i>et al.</i> , 1992
		Phocine herpesvirus 1 (PhHV-1)	crabeater seal (<i>Lobodon carcinophagus</i>)	serum/VNA	13 (8%)	Eastern Antarctica	Lynch, <i>et al.</i> , 1999
		Phocine herpesvirus 1 (PhHV-1)	Weddell seal (<i>Leptonychotes weddellii</i>)	serum/VNA	56 (14%)	Vestfold Hills	McFarlane, 2009
		Phocine herpesvirus 2 (PhHV-2)	Weddell seal (<i>Leptonychotes weddellii</i>)	serum/ELISA	56 (0%)	Vestfold Hills	McFarlane, 2009
		Phocine herpesvirus 1 (PHV-1)	Weddell seal (<i>Leptonychotes weddellii</i>)	lung tissue/RT-PCR	1 (0%)	Vestfold Hills	McFarlane, 2009
		Phocine herpesvirus 1 (PhHV-1)	Weddell seal (<i>Leptonychotes weddellii</i>)	serum/VNA	7 (0%)	McMurdo Sound	Slade, 2008 pers comm in McFarlane, 2009

		Phocine herpesvirus 1 (PhHV-1)	Antarctic fur seal (<i>Arctocephalus gazella</i>)	serum/iELISA	74 (57%)	Bouvetøya	Tryland, <i>et al.</i> , 2012
		Phocine herpesvirus 1 (PhHV-1)	Weddell seal (<i>Leptonychotes weddellii</i>)	serum/ELISA	20 (100%)	Queen Maud Land	Tryland, <i>et al.</i> , 2012
		Phocine herpesvirus 1 (PhHV-1)	Ross seal (<i>Ommatophoca rossi</i>)	serum/ELISA	20 (15%)	Queen Maud Land	Tryland, <i>et al.</i> , 2012
		Phocine herpesvirus 1 (PhHV-1)	crabeater seal (<i>Lobodon carcinophagus</i>)	serum/ELISA	9 (44%)	Queen Maud Land	Tryland, <i>et al.</i> , 2012
		Phocine herpesvirus 1 (PhHV-1)	Antarctic fur seal (<i>Arctocephalus gazella</i>)	serum/iELISA	55 (14%)	Deception & Avian Is's	Roth, 2012
		Phocine herpesvirus 1 (PhHV-1)	Weddell seal (<i>Leptonychotes weddellii</i>)	serum/iELISA	17 (65%)	Deception, Rongé, & Avian Is's	Roth, 2012
		Phocine herpesvirus 1 (PhHV-1)	Southern elephant seal (<i>Mirounga leonina</i>)	serum/iELISA	5 (80%)	Deception & Avian Is's	Roth, 2012
		Phocine herpesvirus 1 (PhHV-1)	Antarctic fus seal (<i>Arctocephalus gazella</i>)	nasal swab/qPCR	55 (0%)	Deception & Avian Is's	Roth, 2012
		Phocine herpesvirus 1 (PhHV-1)	Weddell seal (<i>Leptonychotes weddellii</i>)	nasal swab/qPCR	17 (0%)	Deception, Rongé, & Avian Is's	Roth, 2012
		Phocine herpesvirus 1 (PhHV-1)	Southern elephant seal (<i>Mirounga leonina</i>)	nasal swab/qPCR	5 (0%)	Deception & Avian Is's	Roth, 2012
<i>Poxviridae</i>	<i>Parapoxvirus</i>	seal parapoxvirus	Weddell seal (<i>Leptonychotes weddellii</i>)	skin lesion/PCR	1 (100%)	Queen Maud Land	Tryland, <i>et al.</i> , 2005

<i>Anelloviridae</i>	unassigned	torque teno Leptonychotes weddellii virus -1	Weddell seal (<i>Leptonychotes weddellii</i>)	Kidney; feces; combined nasal- vaginal/HTS	1 (100%); 45 (98%); 25 (76%)	McMurdo Sound	Fashbender, <i>et al.</i> , 2017*
	unassigned	torque teno Leptonychotes weddellii virus -2	Weddell seal (<i>Leptonychotes weddellii</i>)	kidney, feces, combined nasal- vaginal/HTS	1 (0%); 45 (40%); 25 (0%)	McMurdo Sound	Fashbender, <i>et al.</i> , 2017*
	unassigned	torque teno Arctocephalus gazella virus-1 (TTAgV-1)	Antarctic fur seal (<i>Arctocephalus gazella</i>)	buccal swabs/HTS		Livingston Island	Crane, <i>et al.</i> , 2018*
	unassigned	torque teno Arctocephalus gazella virus-2 (TTAgV-2)	Antarctic fur seal (<i>Arctocephalus gazella</i>)	buccal swabs/HTS		Livingston Island	Crane, <i>et al.</i> , *
<i>Dicistroviridae?</i>	unassigned	picorna-like virus	Antarctic fur seal (<i>Arctocephalus gazella</i>)	feces/HTS	1 (100%)	King George Island	Krumbholz, <i>et al.</i> 2017*
<i>Polyomaviridae</i>	<i>Betapolyomavirus</i>	polyomavirus	Weddell seal (<i>Leptonychotes weddellii</i>)	kidney/HTS	1 (100%)	McMurdo Sound	Varsani, <i>et al.</i> 2017*
<i>Papillomaviridae</i>	at least 6	<i>Leptonychotes weddellii</i> papillomavirus, types 1–7 (LwPV1-7)	Weddell seal (<i>Leptonychotes weddellii</i>)	vaginal swabs/HTS	81 (9% of 7 samples collected over 3 seasons)	Ross Sea region	Smeele, <i>et al.</i> , 2018*

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Table S2.2 Viral studies conducted or reported on Antarctic cetaceans by culture, serological methods, or observation.

Reports found here include those with positive or negative results.

FAMILY	GENUS	VIRUS	HOST	SAMPLE TYPE	N (% POS)	LOCATION	REFERENCE
Adenoviridae	?	adenovirus-like particles	sei whale (<i>Balaenoptera borealis</i>)	rectal swab	1 (100%)	Antarctica	Smith & Skilling 1979
Orthomyxoviridae	<i>Alphainfluenzavirus</i>	influenza A	Antarctic minke (<i>Balaenoptera bonaerensis</i>)	serum	104 (0%)	Antarctic Areas V and VI	Ohishi <i>et al.</i> 2006
?	?	Unknown, possible poxvirus	Humpback whale (<i>Megaptera novaeangliae</i>)	skin (observed)	1 (100%)	Admiralty Bay, Antarctica	Flach <i>et al.</i> , 2008

References Table S2.2

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