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

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| **REFERENCE** | Morgan and Westbury 1981, 1988 | Austin and Webster 1993 | Wallensten et al. 2006 | Hurt et al. 2014 | Baumeister et al. 2004 | Baumeister et al. 2004 | Austin and Webster 1993 | Miller et al. 2008 | Baumeister et al. 2004 | Baumeister et al. 2004 | Gardner et al. 1997 | Watts et al. 2009 | Grimaldi et al. 2018 | Gardner et al. 1997 | Watts et al. 2009 | Miller at al. 2008 | Watts et al. 2009 | Miller at al. 2008 | Morgan and Westbury 1981, 1988 | Morgan 1981 cited within Morgan and Westbury 1988 | Austin and Webster 1993 | Thomazelli et al. 2010 | Grimaldi et al. 2018 | Olivares et al. 2019 | Alexander et al. 1989 | Thomazelli et al. 2010 | Olivares et al. 2019 | Austin and Webster 1993 | Miller et al. 2008 | Olivares et al. 2019 |
| **SAMPLE TYPE** | Serum | Serum | Serum | Cloacal and tracheal swabs | Serum | Serum | Serum | Serum and cloacal swabs | Serum | Serum | Serum | Serum | Serum | Serum | Serum | Serum and cloacal swab | Serum | Serum and cloacal swabs | Serum and cloacal swabs | Serum | Serum and cloacal swabs | Serum and tracheal/cloacal swabs | Serum | Serum | Serum | Serum and tracheal/cloacal swabs | Serum | Serum | Serum and cloacal swabs | Serum |
| **HOST** | *Pygoscelis adeliae* | *Pygoscelis adeliae* | *Pygoscelis adeliae* | *Pygoscelis adeliae, Chionis albus* | *Pygoscelis adeliae* | *P. antarctica, P. papua* | *Stercorarius maccormicki* | *Stercorarius maccormicki* | *Stercorarius maccormicki* | *Macronectes giganteus* | *Pygoscelis adeliae* | *Pygoscelis adeliae* | *Pygoscelis adeliae* | A*ptenodytes forsteri* | A*ptenodytes forsteri* | *Stercorarius maccormicki* | *Stercorarius maccormicki* | *Stercorarius maccormicki* | *Pygoscelis adeliae* | *Pygoscelis adeliae* | *Pygoscelis adeliae* | *Pygoscelis adeliae* | *Pygoscelis adeliae* | *Pygoscelis adeliae* | *P. antarctica, P. papua* | *P. antarctica, P. papua* | *P. antarctica, P. papua* | *Stercorarius maccormicki* | *Stercorarius maccormicki* | *Pygoscelis papua, P. antarctica, P. adeliae* |
| **VIRUS** | *Influenza A Virus* |  |  |  |  |  |  |  |  |  | *Infectious bursal disease virus* |  |  |  |  |  |  |  | *Avian paramyxovirus* |  |  |  |  |  |  |  |  |  |  |  |
| **GENUS** | *Influenzavirus* |  |  |  |  |  |  |  |  |  | *Avibirnavirus* |  |  |  |  |  |  | *Flavivirus* | *Avulavirus* |  |  |  |  |  |  |  |  |  |  |  |
| **FAMILY** | *Orthomyxoviridae* |  |  |  |  |  |  |  |  |  | *Birnaviridae* |  |  |  |  |  |  | *Flaviviridae* | *Paramyxoviridae* |  |  |  |  |  |  |  |  |  |  |  |
| **ORDER** | Unnassigned |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Mononegavirales |  |  |  |  |  |  |  |  |  |  |  |

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

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

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

**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.

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| --- | --- | --- | --- | --- | --- | --- | --- |
| ***FAMILY*** | **GENUS** | **VIRUS** | **HOST** | **SAMPLE TYPE** | **N (% POS)** | **REGION** | **REFERENCE** |
| ?? | ?? | probable viral etiology | crabeater seal (*Lobodon carcinophagus*) | none taken | testing not performed | Crown Prince Gustav Channel | Laws & Taylor, 1957 |
| *Paramyxoviridae* | *Morbillivirus* | Canine distemper virus (CDV-like) | Weddell seal (*Leptonychotes weddellii*) | serum/VNA | 19 (0%) | Antarctic (not specified) | Osterhaus *et al.* 1988 |
|  |  | Canine distemper virus (CDV-like) | crabeater seal (*Lobodon carcinophagus*) | serum/VNA | 96 (33%) | Antarctic Peninsula | Bengtson, *et al.*, 1991 |
|  |  | Canine distemper virus (CDV-like) | Weddell seal (*Leptonychotes weddellii*) | serum/VNA | 5 (0%) | Antarctic Peninsula | Bengtson, *et al.*, 1991 |
|  |  | Canine distemper virus (CDV-like) | leopard seal (*Hydrurga leptonyx*) | serum/VNA | 3 (0%) | Antarctic Peninsula | Bengtson, *et al.*, 1991 |
|  |  | Canine distemper virus (CDV) | crabeater seal (*Lobodon carcinophagus*) | serum/VNA | 13 (23%) | Eastern Antarctica | Lynch, *et al*., 1999 |
|  |  | Phocine distemper virus-1 (PDV-1) | crabeater seal (*Lobodon carcinophagus*) | serum/VNA | 13 (0%) | Eastern Antarctica | Lynch, *et al*., 1999 |
|  |  | dolphin morbillivirus | crabeater seal (*Lobodon carcinophagus*) | serum/VNA | 13 (0%) | Eastern Antarctica | Lynch, *et al*., 1999 |
|  |  | porpoise morbillivirus | crabeater seal (*Lobodon carcinophagus*) | serum/VNA | 13 (0%) | Eastern Antarctica | Lynch, *et al*., 1999 |
|  |  | Phocine distemper virus (PDV) | Weddell seal (*Leptonychotes weddellii*) | serum/VNA | 25 (0%) | Weddell Sea | Harder, *et al*., 1991 |
|  |  | Phocine distemper virus (PDV) | crabeater seal (*Lobodon carcinophagus*) | serum/VNA | 3 (0%) | Weddell Sea | Harder, *et al*., 1991 |
|  |  | Canine distemper virus (CDV) | Weddell seal (*Leptonychotes weddellii*) | serum/VNA | 25 (0%) | Weddell Sea | Harder, *et al*., 1991 |
|  |  | Canine distemper virus (CDV) | crabeater seal (*Lobodon carcinophagus*) | serum/VNA | 3 (0%) | Weddell Sea | Harder, *et al*., 1991 |
|  |  | Phocine distemper virus (PDV) | Weddell seal (*Leptonychotes weddellii*) | serum/VNA | 18 (0%) | Weddell Sea | Hentschke, pers. comm. in Stenvers, *et al*., 1992 |
|  |  | Phocine distemper virus (PDV) | crabeater seal (*Lobodon carcinophagus*) | serum/VNA | 2 (0%) | Weddell Sea | Hentschke, pers. comm. in Stenvers, *et al*., 1992 |
|  |  | Canine distemper virus (CDV) | Weddell seal (*Leptonychotes weddellii*) | serum/VNA | 56 (0%) | Vestfold Hills | McFarlane, 2009 |
|  |  | Phocine distemper virus (PDV) | Weddell seal (*Leptonychotes weddellii*) | serum/VNA | 56 (9%) | Vestfold Hills | McFarlane, 2009 |
|  |  | Phocine distemper virus (PDV) | Weddell seal (*Leptonychotes weddellii*) | lung tissue/RT-PCR | 1 (0%) | Vestfold Hills | McFarlane, 2009 |
|  |  | Phocine distemper virus (PDV) | Weddell seal (*Leptonychotes weddellii*) | serum/VNA | 7 (57%) | McMurdo Sound | Slade, 2008 pers comm in McFarlane, 2009 |
|  |  | Canine distemper virus (CDV) | Weddell seal (*Leptonychotes weddellii*) | serum | 56 (0%) | McMurdo Sound | Yochem, *et a*l., 2009 |
|  |  | Phocine distemper virus (PDV) | Weddell seal (*Leptonychotes weddellii*) | serum | 81 (0%) | McMurdo Sound | Yochem, *et a*l., 2009 |
|  |  | dolphin morbillivirus | Weddell seal (*Leptonychotes weddellii*) | serum | 81 (0%) | McMurdo Sound | Yochem, *et a*l., 2009 |
|  |  | porpoise morbillivirus | Weddell seal (*Leptonychotes weddellii*) | serum | 81 (0%) | McMurdo Sound | Yochem, *et a*l., 2009 |
|  |  | Phocine distemper virus (PDV) | Weddell seal (*Leptonychotes weddellii*) | serum/VNA | 20 (0%) | Queen Maud Land | Tryland, *et al*., 2012 |
|  |  | Phocine distemper virus (PDV) | Ross seal (*Ommatophoca rossi*) | serum/VNA | 20 (0%) | Queen Maud Land | Tryland, *et al*., 2012 |
|  |  | Phocine distemper virus (PDV) | crabeater seal (*Lobodon carcinophagus*) | serum/VNA | 9 (0%) | Queen Maud Land | Tryland, *et al*., 2012 |
|  |  | Canine distemper virus (CDV) | Weddell seal (*Leptonychotes weddellii*) | serum/VNA | 20 (0%) | Queen Maud Land | Tryland, *et al*., 2012 |
|  |  | Canine distemper virus (CDV) | Ross seal (*Ommatophoca rossi*) | serum/VNA | 20 (0%) | Queen Maud Land | Tryland, *et al*., 2012 |
|  |  | Canine distemper virus (CDV) | crabeater seal (*Lobodon carcinophagus*) | serum/VNA | 9 (0%) | Queen Maud Land | Tryland, *et al*., 2012 |
|  |  | dolphin morbillivirus (DMV-16a) | Weddell seal (*Leptonychotes weddellii*) | serum/VNA | 20 (0%) | Queen Maud Land | Tryland, *et al*., 2012 |
|  |  | dolphin morbillivirus (DMV-16a) | Ross seal (*Ommatophoca rossi*) | serum/VNA | 20 (0%) | Queen Maud Land | Tryland, *et al*., 2012 |
|  |  | dolphin morbillivirus (DMV-16a) | crabeater seal (*Lobodon carcinophagus*) | serum/VNA | 9 (0%) | Queen Maud Land | Tryland, *et al*., 2012 |
|  |  |  |  |  |  |  |  |
| *Orthomyxoviridae* | *Alphainfluenzavirus* | Influenza A | Weddell seal (*Leptonychotes weddellii*) | serum/iEIA | 237 (0%) | Cape Armitage, Ross Island | Austin & Webster, 1993 |
|  |  | Influenza A | Weddell seal (*Leptonychotes weddellii*) | nasal swabs/culture | 237 (0%) | Cape Armitage, Ross Island | Austin & Webster, 1993 |
|  |  | Influenza A | crabeater seal (*Lobodon carcinophagus*) | serum/ELISA | 13 (0%) | Eastern Antarctica | Lynch, *et al*., 1999 |
|  |  | Influenza A | Weddell seal (*Leptonychotes weddellii*) | serum/ELISA | 56 (0%) | Vestfold Hills | McFarlane, 2009 |
|  |  |  |  |  |  |  |  |
| *Herpesviridae* | *Varicellovirus* | Phocine herpesvirus 1 (PhHV-1) | Weddell seal (*Leptonychotes weddellii*) | serum/VNA | 25 (100%) | Weddell Sea | Harder, *et al*., 1991 |
|  |  |  | crabeater seal (*Lobodon carcinophagus*) | serum/VNA | 3 (100%) | Weddell Sea | Harder, *et al*., 1991 |
|  |  | Feline herpesvirus (FHV-1) | Weddell seal (*Leptonychotes weddellii*) | serum/VNA | 25 (12%) | Weddell Sea | Harder, *et al*., 1991 |
|  |  |  | crabeater seal (*Lobodon carcinophagus*) | serum/VNA | 3 (0%) | Weddell Sea | Harder, *et al*., 1991 |
|  |  | Canine herpesvirus (CHV) | Weddell seal (*Leptonychotes weddellii*) | serum/VNA | 25 (64%) | Weddell Sea | Harder, *et al*., 1991 |
|  |  |  | crabeater seal (*Lobodon carcinophagus*) | serum/VNA | 3 (0%) | Weddell Sea | Harder, *et al*., 1991 |
|  |  | Seal herpesvirus (SeHV) | Weddell seal (*Leptonychotes weddellii*) | serum/VNA | 18 (2 different strains: 28 & 72%) | Weddell Sea | Stenvers, *et al*., 1992 |
|  |  |  | crabeater seal (*Lobodon carcinophagus*) | serum/VNA | 2 (0%) | Weddell Sea | Stenvers, *et al*., 1992 |
|  |  | Feline herpesvirus (FHV-1) | Weddell seal (*Leptonychotes weddellii*) | serum/VNA | 18 (39%) | Weddell Sea | Stenvers, *et al*., 1992 |
|  |  |  | crabeater seal (*Lobodon carcinophagus*) | serum/VNA | 2 (0%) | Weddell Sea | Stenvers, *et al*., 1992 |
|  |  | Phocine herpesvirus 1 (PhHV-1) | crabeater seal (*Lobodon carcinophagus*) | serum/VNA | 13 (8%) | Eastern Antarctica | Lynch, *et al*., 1999 |
|  |  | Phocine herpesvirus 1 (PhHV-1) | Weddell seal (*Leptonychotes weddellii*) | serum/VNA | 56 (14%) | Vestfold Hills | McFarlane, 2009 |
|  |  | Phocine herpesvirus 2 (PhHV-2) | Weddell seal (*Leptonychotes weddellii*) | serum/ELISA | 56 (0%) | Vestfold Hills | McFarlane, 2009 |
|  |  | Phocine herpesvirus 1 (PHV-1) | Weddell seal (*Leptonychotes weddellii*) | lung tissue/RT-PCR | 1 (0%) | Vestfold Hills | McFarlane, 2009 |
|  |  | Phocine herpesvirus 1 (PhHV-1) | Weddell seal (*Leptonychotes weddellii*) | serum/VNA | 7 (0%) | McMurdo Sound | Slade, 2008 pers comm in McFarlane, 2009 |
|  |  | Phocine herpesvirus 1 (PhHV-1) | Antarctic fur seal *(Arctocephalus gazella*) | serum/iELISA | 74 (57%) | Bouvetøya | Tryland, *et al*., 2012 |
|  |  | Phocine herpesvirus 1 (PhHV-1) | Weddell seal (*Leptonychotes weddellii*) | serum/ELISA | 20 (100%) | Queen Maud Land | Tryland, *et al*., 2012 |
|  |  | Phocine herpesvirus 1 (PhHV-1) | Ross seal (*Ommatophoca rossi*) | serum/ELISA | 20 (15%) | Queen Maud Land | Tryland, *et al*., 2012 |
|  |  | Phocine herpesvirus 1 (PhHV-1) | crabeater seal (*Lobodon carcinophagus*) | serum/ELISA | 9 (44%) | Queen Maud Land | Tryland, *et al*., 2012 |
|  |  | Phocine herpesvirus 1 (PhHV-1) | Antarctic fur seal *(Arctocephalus gazella*) | serum/iELISA | 55 (14%) | Deception & Avian Is's | Roth, 2012 |
|  |  | Phocine herpesvirus 1 (PhHV-1) | Weddell seal (*Leptonychotes weddellii*) | serum/iELISA | 17 (65%) | Deception, Rongé, & Avian Is's | Roth, 2012 |
|  |  | Phocine herpesvirus 1 (PhHV-1) | Southern elephant seal (Mirounga leonina) | serum/iELISA | 5 (80%) | Deception & Avian Is's | Roth, 2012 |
|  |  | Phocine herpesvirus 1 (PhHV-1) | Antarctic fus seal *(Arctocephalus gazella*) | nasal swab/qPCR | 55 (0%) | Deception & Avian Is's | Roth, 2012 |
|  |  | Phocine herpesvirus 1 (PhHV-1) | Weddell seal (*Leptonychotes weddellii*) | nasal swab/qPCR | 17 (0%) | Deception, Rongé, & Avian Is's | Roth, 2012 |
|  |  | Phocine herpesvirus 1 (PhHV-1) | Southern elephant seal (Mirounga leonina) | nasal swab/qPCR | 5 (0%) | Deception & Avian Is's | Roth, 2012 |
|  |  |  |  |  |  |  |  |
| *Poxviridae* | *Parapoxvirus* | seal parapoxvirus | Weddell seal (*Leptonychotes weddellii*) | skin lesion/PCR | 1 (100%) | Queen Maud Land | Tryland, *et al*., 2005 |

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

**References Table S2.1**

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|  | **Tab 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 (*Balaenoptera borealis*) | rectal swab | 1 (100%) | Antarctica | Smith & Skilling 1979 | |
|  | |  |  |  |  |  |  |  | |
| Orthomyxoviridae | | *Alphainfluenzavirus* | influenza A | Antarctic minke (*Balaenoptera bonaerensis*) | serum | 104 (0%) | Antarctic Areas V and VI | Ohishi *et al*. 2006 | |
|  | |  |  |  |  |  |  |  | |
| ? | | ? | Unknown, possible poxvirus | Humpback whale (*Megaptera novaeangliae*) | skin (observed) | 1 (100%) | Admiralty Bay, Antarctica | Flach et al., 2008 | |

**References Table S2.2**

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