

Post-mortem findings in southern right whales *Eubalaena australis* at Península Valdés, Argentina, 2003–2012

Denise McAloose*, M. Virginia Rago, Matías Di Martino, Andrea Chirife, Sarah H. Olson, Lucas Beltramino, Luciana M. Pozzi, Luciana Musmeci, Luciano La Sala, Nadia Mohamed, Juan Emilio Sala, Lucas Bandieri, Julian Andrejuk, Ania Tomaszewicz, Tracie Seimon, Mariano Sironi, Luis E. Samartino, Victoria Rowntree, Marcela M. Uhart

*Corresponding author: dmcaloose@wcs.org

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Table S1. Primer sequences and reference methods for PCR assays

PCR Assay	Primer Name	Amplicon Size (bp)	Primer Sequence	Reference and Assay Sensitivity
Cetacean Morbillivirus P gene	CeMV P gene-F CeMV P gene-R	80	5'ATTAAAAAGGGCACAGGAGAG3' 5'RTYGGGTTGCACCACYTGTC3'	Developed In-house < 5 copies/reaction*
Influenza A Matrix gene	IA-Matrix-F IA-Matrix-R Probe	100	5'ARATGAGTCTTCTRACCGAGGTCG3' 5'TGAAAAGACATCYTCAAGYYTCTG3' 5'6FAMTCAGGCCCCCTCAAAGCCGAMGBNFQ3'	Modified from Spackman et al. (2003) 5 copies/reaction*
Papillomavirus L1 gene	PAP L1 gene-F PAP L1 gene-R	415	5'TRCCDGAYCCHAAAYMRRTTGG3' 5'CWRTTRTCHMHCATRTCHCCATC3'	Developed In-house 1500 copies/ reaction*
Poxvirus DNA Topo I gene	POX DNATopo-F POX DNATopo-R	344	5' AATGGAACAAGTTTTTTTAT3' 5'CCAAAATTATATAAAAACG 3'	Bracht et al. (2006) 15 copies/reaction*
Poxvirus DNA Pol gene	POX DNAPol-F POX DNAPol-R	543	5'ATACAGAGCTAGTACITTAATAAAAAG3' 5'CTATTTTTAAATCCCATTAAACC3'	Bracht et al., 2006 15 copies/reaction*
Poxvirus DNA Pol gene	TSPoxPolF1 TSPoxPolF2 TSPoxPolF3 TSPoxPolF4 TSPoxPolR1 TSPoxPolR2	192	5'TATAGAGCGAGTACAGTCATCAAG3' 5'GCGAGYACCTGCATCAAG3' 5'TAYAGAGCTAGTACGTTAATAAAA3' 5'TATAGGGCHAGTACKCTTATTTAA3' 5'CAIACATTIGGATAYARACTATTATAATC3' 5'CGTTIGGGTAYARGCTGTTGTAGTC3'	Developed In-house 5 copies/reaction*
Apicomplexa 18S rRNA gene	EfuronisFwd EfuronisRev	250	5'ACAATTGGAGGGCAAGTCTG3' 5'GGCGACAAGCCTGCTTCAAAC3'	Sledge et al. (2011) 5 copies/reaction*
<i>Brucella</i> spp. 16S rRNA and OMP2 genes	See reference	135	See reference	Venn-Watson et al. (2015)
Amplification Control GAPDH	GAPDH-F GAPDH-R	85	5'CATGTTTGTTCATGGGGGTGAACG3' 5'GCAGTTGGTGGTGCAGGATGC3'	Developed In-house < 5 copies/reaction*

*Sensitivity determined using a control plasmid

Topo = topoisomerase; Pol = polymerase; OMP = outer membrane protein; GAPDH = glyceraldehyde-3-phosphate dehydrogenase

Table S2. Immunohistochemical and PCR assay control and southern right whale lung and brain sample test results

Animal ID	Condition Code	Estimated Age	Tissue	IHC					PCR			RT-PCR			Histologic Diagnosis(es)
				AE1/AE3	Factor VIII	Canine distemper virus	<i>Toxoplasma gondii</i>	<i>Brucella</i> spp.	Cet GAPDH (DNA)	Apicomplexa	<i>Brucella</i> spp.	Cet GAPDH (RNA)	Cet Morbilliviruses	Influenza A	
080403PVEa03	2	2	L	+	NP	-	-	-	+	-	-	+	-	-	NHL
081303PVEa07	3	2	L	+	NP	-	-	-	+	-	-	+	-	-	Trauma, aspiration*, histiocytosis
090903PVEa16	3	3	L	+	NP	-	-	-	+	-	-	-	IN	IN	Aspiration*, histiocytosis
092503PVEa20	3	1-2	L	+	NP	-	-	-	+	-	+	+	-	-	Aspiration*, interstitial pneumonia
092104PVEa11	2	2	L	+	NP	-	-	-	+	-	-	+	-	-	Aspiration, histiocytosis
112205PVEa42	2	3	L	+	NP	-	-	-	+	-	-	+	-	-	Infected gull wounds, aspiration*, histiocytosis, interstitial pneumonia, hepatitis
062909PVEa01	2	3	L	+	NP	-	-	-	+	-	-	+	-	-	Aspiration*
071609PVEa06	2	3	L	-	NP	IN	IN	IN	+	-	-	+	-	-	Aspiration*, histiocytosis
092909PVEa59	4	2	L	-	NP	IN	IN	IN	+	-	-	+	-	-	Bronchopneumonia
082211PVEa12	3	2	L	-	NP	IN	IN	IN	+	-	-	+	-	-	Bronchopneumonia
080904PVEa04	3	1-2	B	NP	+	-	-	NP	+	-	NP	-	IN	NP	NHL
072006PVEa01	2	2	B	NP	+	-	-	NP	-	IN	NP	+	-	NP	NHL
062909PVEa01	2	3	B	NP	+	-	-	NP	+	-	NP	+	-	NP	NHL
071609PVEa06	2	3	B	NP	+	-	-	-	-	IN	IN	+	-	NP	Meningitis
072309PVEa07	2	2	B	NP	+	-	-	NP	+	-	NP	+	-	NP	NHL
071210PVEa02	4	2	B	NP	+	-	-	NP	+	-	NP	+	-	NP	NHL
080910PVEa06	3	2	B	NP	+	-	-	NP	-	IN	NP	+	-	NP	NHL
081910PVEa09	2	3	B	NP	+	-	-	NP	+	-	NP	+	-	NP	NHL
082110PVEa10	3	2	B	NP	+	-	-	NP	+	-	NP	+	-	NP	NHL
082210PVEa11	2	1-2	B	NP	+	-	-	NP	+	-	NP	+	-	NP	NHL
091011PVEa24	3	1-2	B	NP	+	-	-	NP	+	-	NP	-	IN	NP	NHL

Estimated age: 1 = newborn; 1 - 2 = newborn to neonate (differentiation not possible due to carcass position); 2 = neonate; 3 = 1 - 2 month old calf

Cet = cetacean; GAPDH = glyceraldehyde-3-phosphate dehydrogenase gene; L = lung; B = brain; NP = not performed; IN = inconclusive (negative internal positive amplification control and negative PCR test result); NHL = no histologic lesions;

* = aspirated squames

Table S3. PCR assay control and southern right whale skin sample test results

Animal ID	Condition Code	Estimated Age	PCR					RT-PCR		Histologic Diagnosis(es)
			Cet GAPDH (DNA)	Poxvirus (DNA Topo I)	Poxvirus (DNA Pol, short)	Poxvirus (DNA Pol, long)	Papillomavirus	Cet GAPDH (RNA)	Cet Morbilliviruses	
071605PVEa01	2	3	+	-	-	-	-	+	-	Gull wound
101005PVEa16	4	3	+	-	-	-	-	+	-	NHL
101505PVEa19	4	3	+	-	-	-	-	+	-	Gull wound
112205PVEa42	2	3	+	-	-	-	-	+	-	Infected gull wounds, interstitial pneumonia, hepatitis
072006PVEa01	2	2	+	-	-	-	-	-	ND	NHL
110207PVEa50	3	3	+	-	-	-	-	+	-	Gull wound
081908PVEa20	4	3	+	-	-	-	-	+	-	Gull wound
082908PVEa35	4	3	+	-	-	-	-	-	ND	Gull wound
083108PVEa37	3	4	+	-	-	-	-	-	ND	NHL
092108PVEa59	4	3	+	-	-	-	-	-	ND	Gull wound
081209PVEa17	4	3	+	-	-	-	-	+	-	Gull wound
081809PVEa21	2	3	+	-	-	-	-	+	-	Gull wound
082009PVEa28	4	3	+	-	-	-	-	+	-	Gull wound
091009PVEa40	4	3	+	-	-	-	-	+	-	Gull wound
090210PVEa17	2	4	+	-	-	-	-	+	-	Gull wound
080711PVEa03	3	3	+	-	-	-	-	+	-	Gull wound

Estimated Age: 2 = neonate; 3 = young calf; 4 = old calf

Cet = cetacean; GAPDH = glyceraldehyde-3-phosphate dehydrogenase; Pol = DNA polymerase; DNA Topo I = DNA topoisomerase I; ND = non-diagnostic; NHL = no histologic lesions