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Highly Pathogenic Avian Influenza Virus Subtype 5 in Cetaceans, Brazil

Appendix

Appendix Table 1. Overview of Sample Collection. This table presents the details of the samples collected.

Code number	Species	Gender	CT (cm)	Geraci	Code sample	Site collection	Latitude	Longitude	Collection date	Samples
1	<i>Pontoporia blainvillei</i>	M	ND	4	Pb #6	Rio Grande	32° 44' 57" S	52° 27' 9" W	2023–12–05	Blowhole
2	<i>Pontoporia blainvillei</i>	F	114	3	MM297	Tramandaí (RS)	30° 0' 23,5" S	50° 11' 53" W	2024–04–25	Cerebral Right Cerebellum Left Cerebellum Blowhole Tracheal Anal Oral Feces Ocular Genital
3	<i>Pontoporia blainvillei</i>	M	96	3	MM288	Cidreira (RS)	30° 10' 0,9" S	50° 11' 53" W	2024–04–25	Cerebral Tracheal Oral Anal Blowhole Ocular
4	<i>Pontoporia blainvillei</i>	F	120, 5	3	MM301	Arroio do Sal (RS)	29° 30' 12,8" S	49° 50' 59" W	2024–06–20	Genital Blowhole Anal Ocular Oral Cerebral Tracheal
5	<i>Pontoporia blainvillei</i>	F	140	2	PB#1	Rio Grande (RS)	31° 49' 21" S	51° 39' 16" W	2024–07–16	Anal Oral
6	<i>Pontoporia blainvillei</i>	M	112	2	MM307	Cidreira (RS)	30° 11' 33" S	50° 12' 30" W	2024–07–23	Anal Blowhole Oral Ocular Cerebral Tracheal
7	<i>Pontoporia blainvillei</i>	M	104, 2	3	MM309	Tramandaí (RS)	30° 0' 20" S	50° 7' 54" W	2024–08–01	Anal Blowhole Oral Ocular Genital Cerebral Tracheal
8	<i>Pontoporia blainvillei</i>	F	143	4	MM315	Cidreira (RS)	30° 9' 34" S	50° 11' 44" W	2024–10–16	Blowhole Anal Oral Genital Small intestine
9	<i>Pontoporia blainvillei</i>	M	ND	4	MM316	Balneário Pinhal (RS)	30° 14' 12" S	50° 13' 31" W	2024–10–16	Tracheal Blowhole Small intestine
10	<i>Pontoporia blainvillei</i>	U	137	4	MM317	Balneário Pinhal (RS)	30° 17' 50" S	50° 14' 58" W 5	2024–10–16	Blowhole Cerebral Small intestine
11		M	135	3	P. b 1					Large intestine Blowhole

Code number	Species	Gender	CT (cm)	Geraci	Code sample	Site collection	Latitude	Longitude	Collection date	Samples
	<i>Pontoporia blainvillei</i>					Rio Grande (RS)	31° 48' 54" S	51° 38' 17" W	2024-11-05	Anal Oral
12	<i>Pontoporia blainvillei</i>	M	142	4	P. b 1	Rio Grande (RS)	32° 13' 59" S	52° 12' 22" W	2024-11-08	Blowhole
13	<i>Pontoporia blainvillei</i>	M	106	3	P. b 3	Rio Grande (RS)	32° 16' 57" S	52° 15' 12" W	2024-11-08	Blowhole Anal Tracheal Cerebral Blowhole Oral
14	<i>Pontoporia blainvillei</i>	F	150	1	P. b 2	Rio Grande (RS)	ND	ND	2024-11-21	Blowhole Oral
15	<i>Pontoporia blainvillei</i>	U	138	2	P. b 1	Rio Grande (RS)	31° 58' 20" S	51° 54' 9" W	2025-01-14	Blowhole Oral
16	<i>Pontoporia blainvillei</i>	M	92	3	P. b 2	Rio Grande (RS)	32° 7' 44" S	52° 3' 48" W	2025-01-14	Blowhole Anal Oral
17	<i>Pontoporia blainvillei</i>	F	109	3	P. b 3	Rio Grande (RS)	32° 2' 48" S	51° 59' 0" W	2025-01-14	Blowhole Anal Oral Tracheal Blowhole Oral
18	<i>Pontoporia blainvillei</i>	U	107	2	P. b 2	Rio Grande (RS)	32° 37' 6" S	52° 25' 13" W	2025-01-15	Blowhole Oral
19	<i>Pontoporia blainvillei</i>	M	128	2	P. b 1	Rio Grande (RS)	32° 23' 26" S	52° 18' 11" W	2025-01-22	Blowhole Oral
20	<i>Pontoporia blainvillei</i>	M	123	2	P. b 2	Rio Grande (RS)	32° 47' 11" S	52° 27' 49" W	2025-03-20	Blowhole Anal Oral Tracheal Cerebral Tracheal Intestine
21	<i>Pontoporia blainvillei</i>	M	108, 5	3	MM330	Tramandaí (RS)	30° 5' 30" S	50° 10' 10" W	2025-07-09	Nasal Anal Oral Tracheal
22	<i>Pontoporia blainvillei</i>	F	140	2	Pb 12/07/24	Rio Grande (RS)	32° 49' 12" S	52° 28' 35" W	2025-07-12	Oral Tracheal
23	<i>Pontoporia blainvillei</i>	F	105	2	MM331	Cidreira (RS)	30° 8' 30" S	50° 11' 19" W	2025-07-24	Oral Blowhole Tracheal Lung Ocular Cerebral Anal Oral Nasal Tracheal Ocular Lung Cerebral Blowhole
24	<i>Pontoporia blainvillei</i>	F	142	2	MM333	Balneário Pinhal (RS)	30° 16' 19" S	50° 14' 23" W	2025-07-24	Anal Oral Nasal Tracheal Ocular Lung Cerebral Blowhole
25	<i>Tursiops gephyreus</i>	M	132	4	Tg#1	Rio Grande (RS)	32° 2' 33" S	51° 58' 48" W	2023-11-21	Blowhole
26	<i>Tursiops gephyreus</i>	M	169	3	Tg#1	Rio Grande (RS)	32° 7' 24" S	52° 3' 30" W	2024-09-18	Anal
27	<i>Tursiops gephyreus</i>	M	278	4	T. g 1	Rio Grande (RS)	ND	ND	2024-12-10	Blowhole Anal Oral
28	<i>Tursiops gephyreus</i>	M	326	3	T. g 1	Rio Grande (RS)	32° 7' 41" S	52° 3' 47" W	2025-02-18	Blowhole Anal Oral
29	<i>Delphinus delphis</i>	M	130	2	D.d 1	Rio Grande (RS)	32° 33' 40" S	52° 24' 1" W	2024-06-27	Blowhole Anal
30	<i>Delphinus delphis</i>	F	208	ND			ND	ND	2024-07-28	Blowhole Anal

Code number	Species	Gender	CT (cm)	Geraci	Code sample	Site collection	Latitude	Longitude	Collection date	Samples
31	<i>Delphinus delphis</i>	F	203	2	D. delphis 1 D.d 1	Rio Grande (RS) Rio Grande (RS)	ND	ND	2024-11-22	Ocular Traqueal Blowhole Anal Oral
32	<i>Pseudorca crassidens</i>	M	350	2	Pc#1	Rio Grande (RS)	32° 35' 22" S	52° 24' 39" W	2024-08-14	Ocular Blowhole Anal Ocular Oral
33	<i>Sotalia guinensis</i>	M	ND	3	S.g 10/11/24	São Gonçalo do Amarante (CE)	3° 31' 28" S	38° 52' 17" W	2024-11-10	Edema
34	<i>Steno bredanensis</i>	M	269	2	S.b 3	Rio Grande (RS)	32° 37' 8" S	52° 25' 13" W	2024-11-21	Blowhole Oral Anal
35	<i>Steno bredanensis</i>	M	ND	3	S.b 12/01/25	Beberibe (CE)	4° 17' 17" S	37° 57' 54" W	2025-01-12	Blowhole Genital
36	<i>Lagenodelphis hosei</i>	M	ND	3	L.h 12/01/25	Trairi (CE)	3° 13' 22" S	39° 15' 7" W	2025-01-12	Blowhole
37	<i>Kogia sima</i>	F	223	2	K.s 2	Rio Grande (RS)	32° 25' 10" S	52° 20' 18" W	2025-01-22	Blowhole Anal Oral Ocular
38	<i>Kogia sima</i>	M	ND	2	K.s 04/04/25	Aracati (CE)	4° 37' 39" S	37° 35' 15" W	2025-04-04	Blowhole Anal
39	<i>Stenella clymene</i>	F	192	2	MM324	Xangri-lá (RS)	29° 49' 1" S	50° 2' 31" W	2025-02-14	Ocular Tracheal Mammary slit Vaginal Blowhole Oral Anal Cerebral
40	<i>Phocoena spinipinnis</i>	U	164	4	MM325	Tramandaí (RS)	-29,9973 56	-50,12804 6	2025-03-31	Tracheal Lungs Cerebral Intestine
41	<i>Peponocephala electra</i>	F	ND	4	P.e 08/04/25	Barroquinha (CE)	2° 54' 25" S	41° 17' 38" W	2025-04-08	Blowhole Tracheal
42	<i>Stenella frontalis</i>	M	ND	2	354375	Armação dos Búzios (RS)	22° 46' 17" S	41° 54' 57" W	2025-07-12	Lung Anal Ocular Tracheal Cerebral
43	<i>Stenella frontalis</i>	F	ND	2	354479	Armação dos Búzios (RS)	22° 46' 17" S	41° 54' 57" W	2025-07-12	Lung Anal Ocular Tracheal Cerebral
44	<i>Stenella frontalis</i>	F	ND	2	354444	Armação dos Búzios (RS)	22° 46' 17" S	41° 54' 57" W	2025-07-12	Lung Anal Ocular Tracheal Cerebral
45	<i>Megaptera novaeangliae</i>	F	880	2	MM335	Arroio do Sal (RS)	29° 31' 54" S	49° 52' 13" W	2025-08-09	Lung Cerebral Ocular Oral Blowhole Anal

Abbreviations: U, undetermined; ND, not determined.

Appendix Table 2. Overview of positive samples. Threshold cycle (Ct) values obtained by RT-qPCR for FLUAV(M gene) and H5 (clades 1, 2, and 3), along with corresponding viral RNA (copies/ μ L).

Code number	Species	Samples	Ct influenza A (M gene)	Viral RNA (copies/ μ L) M gene	Ct H5 (clade 1,2,3)	Viral RNA (copies/ μ L) M gene
6	<i>Pontoporia blainvillei</i>	Anal	34,14	875,75	ND	ND
		Oral	32,32	3254,5	ND	ND
		Ocular	31,84	4313,5	ND	ND
		Cerebral	30,93	8380,75	34,28	1870,00
		Traqueal	30,95	9906	ND	ND
7	<i>Pontoporia blainvillei</i>	Blowhole	30,92	8983,5	ND	ND
		Cerebral	31,69	2389,5	ND	ND
		Tracheal	32,23	3538,5	ND	ND
8	<i>Pontoporia blainvillei</i>	Oral	35,21	449	ND	ND
		Small intestine	33,56	1380	ND	ND
9	<i>Pontoporia blainvillei</i>	Blowhole	36	221,25	ND	ND
		Small intestine	36,2	220,001	ND	ND
10	<i>Pontoporia blainvillei</i>	Cerebral	34,5	717,5	ND	ND
		Large intestine	37	105,32	ND	ND
		Blowhole	34,92	445,5	ND	ND
11	<i>Pontoporia blainvillei</i>	Oral	34,16	704	ND	ND
12	<i>Pontoporia blainvillei</i>	Blowhole	33,16	1389,25	ND	ND
		Anal	35,45	294,75	ND	ND
14	<i>Pontoporia blainvillei</i>	Blowhole	34,8	459	ND	ND
16	<i>Pontoporia blainvillei</i>	Blowhole	33,94	600,75	ND	ND
17	<i>Pontoporia blainvillei</i>	Blowhole	33,12	1427,75	ND	ND
18	<i>Pontoporia blainvillei</i>	Tracheal	33,8	850,5	ND	ND
27	<i>Tursiops geophyreus</i>	Anal	33,06	2091	ND	ND
		Oral	32,51	1486	ND	ND
28	<i>Tursiops geophyreus</i>	Blowhole	37,17	92,003	ND	ND
		Anal	35,28	330,75	ND	ND
		Oral	37,04	105,35	ND	ND
34	<i>Steno bredanensis</i>	Oral	33,89	1095	ND	ND
35	<i>Steno bredanensis</i>	Blowhole	35,25	426,5	ND	ND
36	<i>Lagenodelphis hosei</i>	Blowhole	35,1	472,5		ND
37	<i>Kogia sima</i>	Blowhole	33,93	1618,5	ND	ND
		Ocular	35,83	2647,25	ND	ND
39	<i>Stenella clymene</i>	Mammary slit	28,95	33650000	37,1	500
		Blowhole	30,45	472500	ND	ND