

**Supplementary Table S1.** Number of GenBank accesses and geographical location of the different samples included in the dataset.

Number	Virus type	Country	GenBank Accession number	Number	Virus type	Country	GenBank Accession number
1	FPV	N.A.	KU248464	41	CPV-2c	Ecuador	MF177275
2	Vaccine CPV-2	N.A.	FJ197846	42	CPV-2c	Ecuador	MF177279
3	Vaccine CPV-2	N.A.	FJ197847	43	CPV-2a	USA	MN451661
4	Vaccine CPV-2	N.A.	FJ011097	44	CPV-2a	USA	MN451667
5	Vaccine CPV-2	N.A.	FJ011098	45	CPV-2a	USA	AY742953
6	Vaccine CPV-2b	N.A.	FJ222822	46	CPV-2b	USA	JX47524
7	CPV-2b	Argentina	JF414817	47	CPV-2c	USA	JX475243
8	CPV-2b	Argentina	MF177246	48	CPV-2c	USA	FJ005235
9	CPV-2c	Argentina	JF414818	49	CPV-2c	USA	FJ005236
10	CPV-2c	Argentina	JF414819	50	CPV-2c	USA	JX475250
11	CPV-2c	Argentina	JF414820	51	CPV-2c	USA	JX475252
12	CPV-2c	Argentina	JF414821	52	CPV-2c	Germany	FJ005199
13	CPV-2c	Argentina	JF414824	53	CPV-2a	Italy	MG434739
14	CPV-2c	Argentina	JF414825	54	CPV-2a	Italy	MF177231
15	CPV-2c	Argentina	JF414826	55	CPV-2a	Italy	MF177233
16	CPV-2a	Uruguay	KC196114	56	CPV-2b	Italy	MF177232
17	CPV-2c	Uruguay	KC196112	57	CPV-2c	Italy	FJ005195
18	CPV-2c	Uruguay	KC196089	58	CPV-2c	Spain	FJ005214
19	CPV-2c	Uruguay	KC196092	59	CPV-2c	France	DQ025951
20	CPV-2c	Uruguay	KC196093	60	CPV-2c	Belgium	FJ005247
21	CPV-2c	Uruguay	KC196091	61	CPV-2b	Portugal	KR559895
22	CPV-2b	Brazil	MF177251	62	CPV-2b	Portugal	KR559892
23	CPV-2b	Brazil	EU659119	63	CPV-2a	China	GU569946
24	CPV-2b	Brazil	EU659120	64	CPV-2b	China	KR611492
25	CPV-2b	Brazil	MK344439	65	CPV-2b	China	JQ743891
26	CPV-2b	Brazil	MK344465	66	CPV-2c	China	MF467225
27	CPV-2b	Brazil	MK344441	67	CPV-2c	China	MF467242
28	CPV-2b	Brazil	MK344470	68	CPV-2c	China	KY386853
29	CPV-2c	Brazil	MF177257	69	CPV-2a	South Korea	EU009200
30	CPV-2c	Brazil	MK344459	70	CPV-2a	South Korea	FJ197838
31	CPV-2c	Brazil	MK344446	71	CPV-2b	Taiwan	JX048607
32	CPV-2c	Brazil	MK344448	72	CPV-2c	Taiwan	KU244254
33	CPV-2c	Brazil	MF177255	73	CPV-2c	Taiwan	KX421787
34	CPV-2a	Ecuador	KF149977	74	CPV-2a	Nigeria	MK895483
35	CPV-2a	Ecuador	KF149973	75	CPV-2a	Nigeria	MK895484
36	CPV-2b	Ecuador	MF177280	76	CPV-2a	Nigeria	MK895485
37	CPV-2b	Ecuador	KF149985	77	CPV-2c	Nigeria	MK895488
38	CPV-2b	Ecuador	MF177269	78	CPV-2c	Nigeria	MK895486
39	CPV-2c	Ecuador	KF149962	79	CPV-2c	Nigeria	MK895487

40	CPV-2c	Ecuador	KF149967	80	CPV-2c	Nigeria	MK895490
N.A: does not apply to reference vaccines and feline panleukopenia virus.							

**Supplementary Table S2.** Number of GenBank accesses and geographical location of the different samples included for the CPV-2b and CPV-2c sub-datasets.

Subdataset CPV-2b				Subdataset CPV-2c			
Number/ ID	Virus type	Country	GenBank Accession number	Number /ID	Virus type	Country	GenBank Accession number
1	CPV-2b	Argentina	JF414817	1	CPV-2c	Argentina	JF414818
2	CPV-2b	Argentina	MF177246	4	CPV-2c	Argentina	JF414819
3	CPV-2b	Brazil	MF177251	5	CPV-2c	Argentina	JF414820
4	CPV-2b	USA	EU659119	6	CPV-2c	Argentina	JF414821
5	CPV-2b	USA	EU659120	7	CPV-2c	Argentina	JF414824
6	CPV-2b	Brazil	MK344439	8	CPV-2c	Argentina	JF414825
7	CPV-2b	Brazil	MK344465	9	CPV-2c	Argentina	JF414826
8	CPV-2b	Brazil	MK344441	10	CPV-2c	Uruguay	KC196112
9	CPV-2b	Brazil	MK344470	11	CPV-2c	Uruguay	KC196089
10	CPV-2b	Ecuador	MF177280	12	CPV-2c	Uruguay	KC196092
11	CPV-2b	Ecuador	KF149985	13	CPV-2c	Uruguay	KC196093
12	CPV-2b	Ecuador	MF177269	14	CPV-2c	Uruguay	KC196091
13	CPV-2b	USA	JX47524	15	CPV-2c	Brazil	MF177257
14	CPV-2b	Italy	MF177232	16	CPV-2c	Brazil	MK344459
15	CPV-2b	Portugal	KR559895	17	CPV-2c	Brazil	MK344446
16	CPV-2b	Portugal	KR559892	18	CPV-2c	Brazil	MK344448
17	CPV-2b	China	KR611492	19	CPV-2c	Brazil	MF177255
18	CPV-2b	China	JQ743891	20	CPV-2c	Ecuador	KF149962
19	CPV-2b	Taiwan	JX048607	21	CPV-2c	Ecuador	KF149967
16P-CL	CPV-2b	Chile	MT585712	22	CPV-2c	Ecuador	MF177275
33P-CL	CPV-2b	Chile	MT585713	23	CPV-2c	Ecuador	MF177279
				24	CPV-2c	USA	JX475243
				25	CPV-2c	USA	FJ005235
				26	CPV-2c	USA	FJ005236
				27	CPV-2c	USA	JX475250
				28	CPV-2c	USA	JX475252
				29	CPV-2c	Germany	FJ005199
				30	CPV-2c	Italy	FJ005195
				31	CPV-2c	Spain	FJ005214
				32	CPV-2c	France	DQ025951
				33	CPV-2c	Belgium	FJ005247
				34	CPV-2c	China	MF467225
				35	CPV-2c	China	MF467242
				36	CPV-2c	China	KY386853
				37	CPV-2c	Taiwan	KU244254

38	CPV-2c	Taiwan	KX421787
39	CPV-2c	Nigeria	MK895488
40	CPV-2c	Nigeria	MK895486
41	CPV-2c	Nigeria	MK895487
42	CPV-2c	Nigeria	MK895490
43	2P-CL	Chile	MT585703
44	5P-CL	Chile	MT585702
45	9P-CL	Chile	MT585700
46	11P-CL	Chile	MT585698
47	13P-CL	Chile	MT585709
48	18P-CL	Chile	MT585708
49	22P-CL	Chile	MT585710
50	26P-CL	Chile	MT585705
51	27P-CL	Chile	MT585706
52	29P-CL	Chile	MT585711
53	35P-CL	Chile	MT585701
54	49P-CL	Chile	MT585697
55	56P-CL	Chile	MT585707
56	60P-CL	Chile	MT585704
57	83P-CL	Chile	MT585696
58	87P-CL	Chile	MT585699

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**Supplementary Table S3.** General history of canines in study.

Sample identification	Breed	Age (months)	Vaccination status	Status of CPV	Amplification VP2 (bp)	Antigenic variant CPV-2
1P-CL	Mixed breed	3,5	Unknown	+	719	Undetermined
<b>2P-CL</b>	<b>German Shepherd</b>	<b>3</b>	<b>Incomplete</b>	+	<b>1755</b>	<b>CPV-2c</b>
3P-CL	Mixed breed	2	Unknown	+	719	Undetermined
4P-CL	Mixed breed	2	Unknown	+	719	Undetermined
<b>5P-CL</b>	<b>Mixed breed</b>	<b>2,5</b>	<b>Incomplete</b>	+	<b>1755</b>	<b>CPV-2c</b>
6P-CL	Mixed breed	12	No vaccination	-	-	Negative
7P-CL	Mixed breed	10	Incomplete	-	-	Negative
8P-CL	Mixed breed	6	No vaccination	-	-	Negative
<b>9P-CL</b>	<b>Mixed breed</b>	<b>3</b>	<b>No vaccination</b>	+	<b>1755</b>	<b>CPV-2c</b>
10P-CL	Mixed breed	5	Complete	+	719	Undetermined
<b>11P-CL</b>	<b>Dachshund</b>	<b>2</b>	<b>No vaccination</b>	+	<b>1755</b>	<b>CPV-2c</b>
12P-CL	Mixed breed	48	Unknown	-	-	Negative
13P-CL	Mixed breed	12	No vaccination	+	<b>1755</b>	<b>CPV-2c</b>
14P-CL	Mixed breed	72	Unknown	-	-	Negative
15P-CL	Golden Retriever	2	Unknown	-	-	Negative
<b>16P-CL</b>	<b>Yorkshire Terrier</b>	<b>3</b>	<b>Unknown</b>	+	<b>1755</b>	<b>CPV-2b</b>
17P-CL	Mixed breed	5	No vaccination	-	-	Negative
<b>18P-CL</b>	<b>Mixed breed</b>	<b>3</b>	<b>No vaccination</b>	+	<b>1755</b>	<b>CPV-2c</b>
19P-CL	Mixed breed	3	No vaccination	+	719	Undetermined
20P-CL	Poodle	2	No vaccination	+	719	Undetermined
21P-CL	Mixed breed	2	Unknown	-	-	Negative
<b>22P-CL</b>	<b>Poodle</b>	<b>3</b>	<b>Incomplete</b>	+	<b>1755</b>	<b>CPV-2c</b>
23P-CL	Malinois Shepherd	4	Incomplete	+	719	Undetermined
24P-CL	Mixed breed	108	Incomplete	-	-	Negative

25P-CL	Mixed breed	7	No vaccination	+	719	Undetermined
<b>26P-CL</b>	<b>Dachshund</b>	<b>1,5</b>	<b>Incomplete</b>	+	<b>1755</b>	<b>CPV-2c</b>
<b>27P-CL</b>	<b>Basset Hound</b>	<b>7</b>	<b>Unknown</b>	+	<b>1755</b>	<b>CPV-2c</b>
28P-CL	Mixed breed	2	No vaccination	+	719	Undetermined
<b>29P-CL</b>	<b>Mixed breed</b>	<b>4</b>	<b>Complete</b>	+	<b>1755</b>	<b>CPV-2c</b>
30P-CL	Mixed breed	3	No vaccination	-	-	Negative
31P-CL	Mixed breed	5	Unknown	-	-	Negative
32P-CL	Mixed breed	4	No vaccination	+	719	Undetermined
<b>33P-CL</b>	<b>Mixed breed</b>	<b>6</b>	<b>Incomplete</b>	+	<b>1755</b>	<b>CPV-2b</b>
34P-CL	Mixed breed	6	Unknown	-	-	Negative
<b>35P-CL</b>	<b>Mixed breed</b>	<b>3</b>	<b>Unknown</b>	+	<b>1755</b>	<b>CPV-2c</b>
36P-CL	Mixed breed	2	Unknown	+	719	Undetermined
37P-CL	Mixed breed	2	Unknown	-	-	Negative
38P-CL	Mixed breed	2	Unknown	+	719	Undetermined
39P-CL	Mixed breed	2	Unknown	-	-	Negative
40P-CL	Mixed breed	2	Incomplete	+	719	Undetermined
41P-CL	Mixed breed	2	No vaccination	-	-	Negative
42P-CL	Mixed breed	2	No vaccination	-	-	Negative
43P-CL	Mixed breed	3	No vaccination	-	-	Negative
44P-CL	Mixed breed	18	No vaccination	-	-	Negative
45P-CL	Mixed breed	3	No vaccination	+	719	Undetermined
46P-CL	Mixed breed	12	Incomplete	-	-	Negative
47P-CL	German Shepherd	3	No vaccination	+	719	Undetermined
48P-CL	Mixed breed	96	No vaccination	-	-	Negative
<b>49P-CL</b>	<b>Labrador Retriever</b>	<b>4</b>	<b>Unknown</b>	+	<b>1755</b>	<b>CPV-2c</b>
50P-CL	Mixed breed	9	No vaccination	+	719	Undetermined
51P-CL	Mixed breed	5	No vaccination	+	719	Undetermined
52P-CL	Yorkshire Terrier	5	Complete	-	-	Negative
53P-CL	Mixed breed	2	No vaccination	+	719	Undetermined

54P-CL	Mixed breed	2	No vaccination	+	719	Undetermined
55P-CL	Rottweiler	7	Unknown	+	719	Undetermined
<b>56P-CL</b>	<b>Mixed breed</b>	<b>14</b>	<b>Incomplete</b>	<b>+</b>	<b>1755</b>	<b>CPV-2c</b>
57P-CL	Bullterrier	2	No vaccination	+	719	Undetermined
58P-CL	Pitbull	3	Incomplete	+	719	Undetermined
59P-CL	Mixed breed	2	Unknown	-	-	Negative
<b>60P-CL</b>	<b>Mixed breed</b>	<b>4</b>	<b>Incomplete</b>	<b>+</b>	<b>1755</b>	<b>CPV-2c</b>
61P-CL	Yorkshire Terrier	12	Unknown	-	-	Negative
62P-CL	Mixed breed	2	No vaccination	-	-	Negative
63P-CL	Mixed breed	10	Unknown	-	-	Negative
64P-CL	Mixed breed	2	Unknown	+	719	Undetermined
65P-CL	Golden Retriever	3	Incomplete	+	719	Undetermined
66P-CL	Golden Retriever	5	Incomplete	+	719	Undetermined
67P-CL	Chihuahua	2	No vaccination	+	719	Undetermined
68P-CL	German Shepherd	4	No vaccination	+	719	Undetermined
69P-CL	Bullterrier	6	No vaccination	+	719	Undetermined
70P-CL	Mixed breed	2	Unknown	+	719	Undetermined
71P-CL	Mixed breed	2	No vaccination	+	719	Undetermined
72P-CL	Mixed breed	8	No vaccination	-	-	Negative
73P-CL	Mixed breed	4	Unknown	+	719	Undetermined
74P-CL	Mixed breed	24	No vaccination	+	719	Undetermined
75P-CL	Dachshund	3	Complete	+	719	Undetermined
76P-CL	Rottweiler	4	Complete	-	-	Negative
77P-CL	Dachshund	2	Incomplete	+	719	Undetermined
78P-CL	Mixed breed	3	No vaccination	-	-	Negative
79P-CL	Mixed breed	3	Incomplete	+	719	Undetermined
80P-CL	Mixed breed	2	Unknown	+	719	Undetermined
81P-CL	Chilean Fox Terrier	7	Incomplete	+	719	Undetermined
82P-CL	Yorkshire Terrier	2	Unknown	-	-	Negative
<b>83P-CL</b>	<b>Mixed breed</b>	<b>6</b>	<b>Unknown</b>	<b>+</b>	<b>1755</b>	<b>CPV-2c</b>

84P-CL	Mixed breed	7	No vaccination	+	719	Undetermined
85P-CL	Mixed breed	2	No vaccination	+	719	Undetermined
86P-CL	Mixed breed	4	Incomplete	-	-	Negative
<b>87P-CL</b>	<b>Siberian Husky</b>	<b>3</b>	<b>Complete</b>	<b>+</b>	<b>1755</b>	<b>CPV-2c</b>
88P-CL	Mixed breed	5	Incomplete	+	719	Undetermined
89P-CL	Mixed breed	7	Incomplete	+	719	Undetermined
90P-CL	Mixed breed	6	No vaccination	+	719	Undetermined
91P-CL	Mixed breed	2	No vaccination	+	719	Undetermined
92P-CL	Chilean Fox Terrier	9	No vaccination	+	719	Undetermined
93P-CL	Mixed breed	5	No vaccination	+	719	Undetermined
94P-CL	Border Collie	2	Incomplete	+	719	Undetermined
95P-CL	Mixed breed	2	Incomplete	+	719	Undetermined
96P-CL	Akita	2	No vaccination	-	-	Negative
97P-CL	Yorkshire Terrier	4	Incomplete	+	719	Undetermined
98P-CL	Mixed breed	4	No vaccination	+	719	Undetermined
99P-CL	Mixed breed	11	Unknown	-	-	Negative
100P-CL	Mixed breed	5	Incomplete	+	719	Undetermined

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