

Supplementary Table

Table S1. The pairwise sequence identity matrix of partial E1 genes of canine papillomaviruses (CPVs). The identity of partial E1 gene of CPVs were analyzed by directly comparing the sequences without considering the phylogenetic relationship and present in percentage (%). The comprehensive CPVs with their accession numbers on GenBank of each type were provided.

[illegible]

CPV19 (KX599536.1)	20	57.7	59.0	70.8	59.0	62.9	59.2	57.7	78.4	59.7	59.7	60.0	60.8	59.0	62.0	60.5	61.0	58.4	72.8	58.4														
CPV20 (KX599536.1)	21	53.4	53.5	58.2	77.1	77.1	78.4	54.5	58.9	66.6	77.1	67.4	76.8	75.5	55.1	68.0	68.5	71.9	59.3	79.0	58.4													
Case no. 4	22	55.6	99.2	60.3	54.1	61.2	58.3	75.3	55.9	60.4	54.6	61.2	54.3	57.0	53.5	63.1	61.0	59.2	58.1	57.1	58.7	53.7												
Case no. 5	23	54.3	59.7	98.4	61.6	60.5	58.7	61.3	71.6	59.5	59.2	60.5	61.3	60.5	62.2	60.4	63.7	57.5	77.1	59.8	69.8	57.8	59.9											
Case no. 6	24	54.6	74.7	60.8	55.3	60.8	57.1	98.9	59.2	57.1	58.2	58.7	57.9	58.9	53.4	61.7	60.9	59.6	58.8	56.4	56.9	53.5	74.8	60.6										
Case no. 7	25	54.9	74.9	61.0	56.1	61.3	57.6	99.2	59.7	57.6	58.9	59.5	58.4	59.7	54.2	62.2	61.7	60.4	59.1	57.0	57.4	54.1	75.1	60.9	99.2									
Case no. 8	26	56.3	54.8	59.7	75.5	73.2	76.1	58.9	58.4	65.8	99.7	65.3	74.5	82.4	56.6	67.2	67.2	76.6	60.4	75.3	59.7	76.9	54.7	59.3	57.7	58.8								
Case no. 9	27	56.1	54.6	59.5	75.3	72.9	75.8	58.7	58.1	65.5	99.5	65.0	74.2	82.1	56.4	66.9	66.9	76.4	60.1	75.1	59.5	76.6	54.5	59.1	57.7	58.5	99.7							
Case no. 10	28	59.4	59.0	63.1	67.1	67.4	65.5	60.0	62.6	72.9	65.8	72.6	67.6	66.8	56.5	72.2	97.9	66.4	58.8	67.5	59.7	66.9	59.7	62.7	60.6	60.4	65.6	65.6						
Case no. 11	29	58.2	59.5	58.2	70.8	72.1	75.8	60.5	59.2	66.6	76.8	66.3	75.3	76.1	58.2	65.6	68.8	99.5	57.5	70.1	58.7	71.9	59.2	57.8	59.5	60.4	76.6	76.4	66.7					
Case no. 12	30	57.9	58.7	57.7	70.0	71.3	75.0	59.7	58.6	66.1	76.1	65.8	74.5	75.3	57.7	65.4	68.0	98.7	57.0	69.3	58.2	71.1	58.6	57.3	59.8	60.4	75.9	75.9	66.7	99.2				
Case no. 13	31	58.4	58.7	57.4	70.3	71.3	75.3	59.7	58.6	66.6	76.1	66.1	74.7	75.3	57.7	65.4	68.2	98.7	56.7	69.6	58.2	71.4	58.9	57.0	59.8	60.1	75.9	75.6	66.7	99.2	98.7			
Case no.14	32	58.2	59.5	58.2	70.8	72.1	75.8	60.5	59.2	66.6	76.8	66.3	75.3	76.1	58.2	65.6	68.8	99.5	57.5	70.1	58.7	71.9	59.2	57.8	59.5	60.4	76.6	76.4	66.7	100	99.2	99.2		

Table S2. The pairwise sequence identity matrix of partial L1 genes of canine papillomaviruses (CPVs). The identity of partial L1 gene of CPVs were analyzed by directly comparing the sequences without considering the phylogenetic relationship and present in percentage (%). The reprehensive CPVs with their accession numbers on GenBank of each type were provided.

[illegible]

CPV1_ZA_Day_2011 (KX587460.1)	5	64.2	100.0	100.0	100.0																		
CPV1_ZA_Lillie_2011 (KX587461.1)	6	64.2	100.0	100.0	100.0	100.0																	
TR-CanPV-1_L1	7	63.7	93.9	93.9	93.9	93.9	93.9																
TR-CanPV-2_L1	8	64.7	97.6	97.6	97.6	97.6	97.6	94.3															
TR-CanPV-3_L1	9	62.8	94.8	94.8	94.8	94.8	94.8	95.3	95.3														
TR-CanPV-4_L1	10	64.7	96.7	96.7	96.7	96.7	96.7	93.9	96.2	93.4													
TR-CanPV-5_L1	11	64.7	97.2	97.2	97.2	97.2	97.2	93.9	96.7	93.9	99.5												
TR-CanPV-7_L1	12	64.7	98.1	98.1	98.1	98.1	98.1	94.8	98.6	96.7	96.7	97.2											
TR-CanPV-8_L1	13	64.2	97.2	97.2	97.2	97.2	97.2	93.4	97.2	95.3	95.3	95.8	97.6										
TR-CanPV-9_L1	14	59.1	87.7	87.7	87.7	87.7	87.7	93.9	88.2	92.0	87.7	87.7	89.6	88.2									
TR-CanPV-13_L1	15	64.2	99.1	99.1	99.1	99.1	99.1	93.9	97.6	95.8	96.7	97.2	98.1	97.2	88.7								
CPV2 (AY722648.1)	16	49.8	50.0	50.0	50.0	50.0	50.0	50.5	48.6	50.0	50.0	50.0	50.0	48.6	49.1	50.0							
CPV3 (DQ295066.1)	17	49.8	50.0	50.0	50.0	50.0	50.0	50.5	48.6	50.0	50.0	50.0	50.0	48.6	49.1	50.0	100.0						
CPV4 (EF584537.1)	18	51.0	49.3	49.3	49.3	49.3	49.3	47.3	48.8	48.3	47.3	47.8	48.3	48.3	46.4	48.8	44.9	44.9					
CPV5 (FJ492743.1)	19	51.0	51.2	51.2	51.2	51.2	51.2	51.2	51.2	50.2	50.7	51.2	50.2	50.2	48.8	51.2	51.2	51.2	57.1				
CPV6 (FJ492744.1)	20	69.3	65.6	65.6	65.6	65.6	65.6	63.7	63.7	63.3	64.2	64.7	64.7	64.2	59.5	65.1	54.4	54.4	49.0	54.8			
CPV7 (FJ492742.1)	21	49.3	52.8	52.8	52.8	52.8	52.8	51.4	51.4	51.9	51.9	52.4	52.8	51.4	49.1	52.8	70.9	70.9	48.3	53.6	51.6		
CPV8 (HQ262536.1)	22	53.0	51.4	51.4	51.4	51.4	51.4	50.5	50.5	50.9	50.5	50.9	50.5	50.5	47.2	50.5	49.3	49.3	59.2	63.5	53.5	48.8	
CPV9 (JF800656.1)	23	52.8	54.5	54.5	54.5	54.5	54.5	55.0	55.0	54.5	55.0	55.5	54.5	53.6	52.6	54.5	48.8	48.8	52.4	64.1	54.7	49.8	62.5
CPV10 (JF800657.1)	24	51.6	48.1	48.1	48.1	48.1	48.1	47.2	48.1	47.6	47.2	47.6	48.1	47.2	45.8	47.2	48.3	48.3	60.2	60.6	48.4	50.2	70.7
CPV11 (JF800658.1)	25	52.6	53.9	53.9	53.9	53.9	53.9	53.4	52.9	53.9	52.4	52.9	53.9	53.9	52.4	53.9	54.9	54.9	57.1	64.9	50.7	55.9	56.6
CPV12 (JQ754321.1)	26	53.8	53.6	53.6	53.6	53.6	53.6	54.5	54.1	54.5	53.1	53.6	53.6	53.1	51.2	53.6	48.3	48.3	54.9	62.1	51.4	49.3	62.0
CPV13 (JX141478.1)	27	52.1	50.0	50.0	50.0	50.0	50.0	51.9	50.5	50.9	50.9	51.4	50.9	49.1	49.1	49.5	54.4	54.4	46.6	50.7	49.8	59.2	46.7

TR-CanPV-2_L1	8																
TR-CanPV-3_L1	9																
TR-CanPV-4_L1	10																
TR-CanPV-5_L1	11																
TR-CanPV-7_L1	12																
TR-CanPV-8_L1	13																
TR-CanPV-9_L1	14																
TR-CanPV-13_L1	15																
CPV2 (AY722648.1)	16																
CPV3 (DQ295066.1)	17																
CPV4 (EF584537.1)	18																
CPV5 (FJ492743.1)	19																
CPV6 (FJ492744.1)	20																
CPV7 (FJ492742.1)	21																
CPV8 (HQ262536.1)	22																
CPV9 (JF800656.1)	23																
CPV10 (JF800657.1)	24	63.0															
CPV11 (JF800658.1)	25	67.0	59.0														
CPV12 (JQ754321.1)	26	83.0	64.9	71.4													
CPV13 (JX141478.1)	27	51.2	49.5	51.5	50.2												
CPV14 (JQ701802.1)	28	56.7	63.4	60.5	58.2	46.2											
CPV15 (JX899359.1)	29	57.7	63.0	55.4	57.2	51.7	58.7										
CPV16 (KP099966.1)	30	60.7	57.6	59.0	64.6	45.4	60.1	59.7									
CPV17 (KT272399.1)	31	52.6	51.2	49.0	50.7	55.8	50.2	49.5	49.3								
CPV18 (KT326919.1)	32	72.2	58.9	64.6	67.5	49.8	56.5	58.9	63.3	48.8							

CPV19 (KX599536.1)	33	52.6	47.4	53.9	49.8	57.3	50.2	50.5	48.8	71.1	48.3						
CPV20 (KT901797.1)	34	65.5	60.7	64.6	68.0	48.1	58.7	58.7	62.6	54.9	67.0	46.1					
Case no.1	35	54.5	48.1	53.9	53.6	50.0	51.9	52.8	51.7	49.5	56.0	48.1	54.4				
Case no.2	36	54.5	48.1	53.9	53.6	50.0	51.9	52.8	51.7	49.5	56.0	48.1	54.4	100.0			
Case no.3	37	54.1	47.6	53.9	54.1	50.5	52.4	53.3	51.7	50.0	55.5	48.6	54.9	99.5	99.5		
Case no.4	38	54.5	48.1	53.4	53.1	50.0	51.9	52.8	51.7	49.5	56.0	48.1	54.4	99.5	99.5	97.0	