Appendix A

Individual results of field samples

Sample ID	RLB result	Real-time PCR result	Sample origin
RE16/110	Positive	24.75	Namibia
RE16/084	Positive	24.94	Namibia
RE16/076	Positive	25.53	Namibia
RE16/108	Positive	26.70	Namibia
RE16/117	Positive	27.35	Namibia
RE16/113	Positive	27.40	Namibia
RE16/079	Positive	27.76	Namibia
RE16/098	Positive	27.82	Namibia
RE16/091	Positive	27.85	Namibia
RE16/073	Positive	27.98	Namibia
RE16/081	Positive	28.01	Namibia
RE16/088	Positive	28.47	Namibia
RE16/112	Positive	28.52	Namibia
RE16/089	Positive	28.68	Namibia
RE16/116	Positive	28.77	Namibia
RE16/119	Positive	28.80	Namibia
M3	Positive	28.94	MAHC
RE16/077	Positive	28.95	Namibia
RE16/093	Positive	29.01	Namibia
RE16/104	Positive	29.16	Namibia
RE16/101	Positive	29.28	Namibia
RE16/123	Positive	29.51	Namibia
RE16/086	Positive	29.69	Namibia
RE16/071	Positive	29.71	Namibia
RE16/085	Positive	30.44	Namibia
RE16/107	Positive	31.00	Namibia
RE16/080	Positive	31.00	Namibia
RE16/097	Positive	31.73	Namibia
RE16/100	Positive	31.95	Namibia
RE16/070	Positive	32.81	Namibia
RE16/083	Positive	33.72	Namibia
RLB16_003	Positive	25.16	OVAH
M4	Positive	29.34	MAHC
RLB19_053	Positive	29.46	OVAH
M2	Positive	30.74	MAHC
RLB19_080	Positive	31.35	OVAH
OVAH 2	Positive	33.27	OVAH
OVAH 3	Positive	33.72	OVAH
RLB1123_14	Positive	34.92	OVAH
RE16/075	Positive	28.34	Namibia
RE16/087	Negative	32.98	Namibia
RE16/103	Negative	35.93	Namibia
RE16/115	Negative	Negative	Namibia
RE16/122	Negative	Negative	Namibia
RE16/082	Negative	Negative	Namibia

RE16/090	Negative	Negative	Namibia
RE16/092	Negative	Negative	Namibia
RE16/094	Negative	Negative	Namibia
RE16/096	Negative	Negative	Namibia
RE16/102	Negative	Negative	Namibia
M8	Negative	Negative	MAHC
RE16/069	Negative	Negative	Namibia
RE16/072	Negative	Negative	Namibia
RE16/074	Negative	Negative	Namibia
RE16/078	Negative	Negative	Namibia
RE16/111	Negative	Negative	Namibia
M1	Negative	Negative	MAHC
M5	Negative	Negative	MAHC
M6	Negative	Negative	MAHC
M7	Negative	Negative	MAHC
M9	Negative	Negative	MAHC
OVAH 1	Negative	Negative	OVAH
OVAH 4	Negative	Negative	OVAH
RE16/099	Negative	Negative	Namibia
RE16/105	Negative	Negative	Namibia
RE16/106	Negative	Negative	Namibia
RE16/109	Negative	Negative	Namibia
RE16/114	Negative	Negative	Namibia
RE16/118	Negative	Negative	Namibia
RE16/120	Negative	Negative	Namibia
RE16/121	Negative	Negative	Namibia
RLB19_001	Negative	Negative	OVAH
RLB19_009	Negative	Negative	OVAH
RLB19_010	Negative	Negative	OVAH
RLB19_011	Negative	Negative	OVAH
RLB19_012	Negative	Negative	OVAH
RLB19_052	Negative	Negative	OVAH
RLB19_060	Negative	Negative	OVAH
RLB19_020	Negative	Negative	OVAH
RLB19_014	Negative	Negative	OVAH
RLB19_015	Negative	Negative	OVAH
RLB19_016	Negative	Negative	OVAH
RLB19_017	Negative	Negative	OVAH
RLB19_018	Negative	Negative	OVAH
RLB19_004	Negative	Negative	OVAH
RLB18_214	Negative	Negative	OVAH
RLB18_105	Negative	Negative	OVAH
RLB18_092	Negative	Negative	OVAH
RLB17_002	Negative	Negative	OVAH
RLB17_117	Negative	Negative	OVAH
RLB18_081	Negative	Negative	OVAH
RLB18_086	Negative	Negative	OVAH
RLB18_074	Negative	Negative	OVAH
RLB18_072	Negative	Negative	OVAH
RLB18_071	Negative	Negative	OVAH
RLB18_070	Negative	Negative	OVAH

RLB18_068	Negative	Negative	OVAH
RLB18_067	Negative	Negative	OVAH
RLB18_064	Negative	Negative	OVAH
RLB18_066	Negative	Negative	OVAH
RLB18_063	Negative	Negative	OVAH
RLB18_062	Negative	Negative	OVAH
RLB18_060	Negative	Negative	OVAH
RLB18_059	Negative	Negative	OVAH
RLB18_053	Negative	Negative	OVAH
RLB18_058	Negative	Negative	OVAH
RLB18_049	Negative	Negative	OVAH
RLB18_048	Negative	Negative	OVAH
RLB16_165	Negative	Negative	OVAH
RLB19_061	Negative	Negative	OVAH
RLB19_066	Negative	Negative	OVAH
RLB19_068	Negative	Negative	OVAH
RLB19_069	Negative	Negative	OVAH
RLB19_070	Negative	Negative	OVAH
RLB19_071	Negative	Negative	OVAH
RLB19_072	Negative	Negative	OVAH
RLB19_074	Negative	Negative	OVAH
RLB19_075	Negative	Negative	OVAH
RLB19_076	Negative	Negative	OVAH
OVAH 5	Negative	Negative	OVAH
RE16/095	Negative	Negative	Namibia

Appendix B

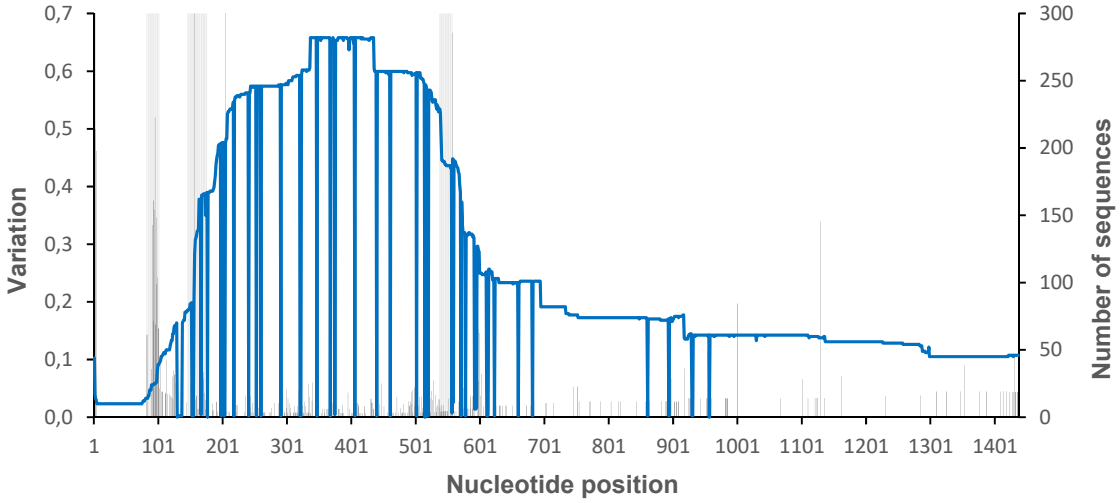
Bayesian latent class model

```
model{
  y1[1:Q, 1:Q] ~ dmulti(p1[1:Q, 1:Q], n1)
  y2[1:Q, 1:Q] ~ dmulti(p2[1:Q, 1:Q], n2)
  p1[1,1] <- pi1*eta11 + (1-pi1)*theta11
  p1[1,2] <- pi1*eta12 + (1-pi1)*theta12
  p1[2,1] <- pi1*eta21 + (1-pi1)*theta21
  p1[2,2] <- pi1*eta22 + (1-pi1)*theta22
  p2[1,1] <- pi2*eta11 + (1-pi2)*theta11
  p2[1,2] <- pi2*eta12 + (1-pi2)*theta12
  p2[2,1] <- pi2*eta21 + (1-pi2)*theta21
  p2[2,2] <- pi2*eta22 + (1-pi2)*theta22
  eta11 <- lambdaD*eta1
  eta12 <- eta1 - eta11
  eta21 <- gammaD*(1-eta1)
  eta22 <- 1 - eta11 - eta12 - eta21
  theta11 <- 1 - theta12 - theta21 - theta22
  theta12 <- gammaDc*(1-theta1)
  theta21 <- theta1 - theta22
  theta22 <- lambdaDc* theta1
  eta2 <- eta11 + eta21
  theta2 <- theta22 + theta12
  rhoD <- (eta11 - eta1*eta2) / sqrt(eta1*(1-eta1)*eta2*(1-eta2))
  rhoDc <- (theta22 - theta1*theta2) / sqrt(theta1*(1-theta1)*theta2*(1-theta2))
  pi1 ~ dbeta(1.46, 6.24) ##mode=0.08, 5th%ile=0.01
  pi2 ~ dbeta(5.03, 7.04) ##mode=0.40, 5%ile=0.2
  eta1 ~ dbeta(23.9, 5.04) ##mode=0.85, 5%ile=0.7
  theta1 ~ dbeta(22.98, 3.44) ##mode=0.9, 5%ile=0.75
  lambdaD ~ dbeta(1.94, 1.10) ## Mode=0.90, 5th%tile=0.20
  gammaD ~ dbeta(1.94, 1.10)
  lambdaDc ~ dbeta(1.94, 1.10) ## Mode=0.90, 5th%tile=0.20
  gammaDc ~ dbeta(1.94, 1.10)
}

list(n1=66, n2=55, Q=2,
y1=structure(.Data=c(
9,0,0,57),.Dim=c(2,2)),
y2=structure(.Data=c(
31,0,2,22),.Dim=c(2,2)))
list(pi1=0.08, pi2=0.4, eta1=0.85, theta1=0.90, lambdaD=0.50, lambdaDc=0.50,

gammaD=0.50, gammaDc=0.50)
```

Appendix C



Graph plot representing the nucleotide position and variation of 316 *E. canis* 16S sequences downloaded from GenBank®. Nucleotide variation is represented by the black column height, the higher the column the greater the variation. No column represents a 100% conserved position. The blue line represents the number of sequences at each nucleotide position. The grey columns represent previously published nested PCR assay (Wen et al., 1997).