Appendix 7. Bootstrap-support values for nodes that differed among ML trees made with alternative best-fit models as well as the K2P model. Bootstrap scores were also compared between ML and MP trees. Bootstrap values were derived from 50% majority-rule consensus trees constructed with 1000 replicates. Bootstrap information listed as not applicable indicates that the consensus trees had identical topologies.

Data Set	1	12	46
TreeBASE ID	S1266/M2209	S869/M1410	S1243/M2167
Model 1	GTR+Γ	K3Puf+I+Γ	GTR+Γ
Model 2	TVM	K3P+Γ	TrN+Γ
Model 3	HKY+Γ	-	TrNef+Γ
1 vs. 2	65	N/A	51, 51
2 vs. 1	60	N/A	N/A
1 vs. 3	N/A	-	56
3 vs. 1	N/A	-	52, 61
2 vs. 3	60	-	55
3 vs. 2	55	-	N/A
1 vs. K2P	65	52	56
K2P vs. 1	N/A	N/A	62
2 vs. K2P	60	51	51, 55
K2P vs. 2	N/A	N/A	N/A
3 vs. K2P	55	-	52
K2P vs. 3	N/A	-	N/A
1 vs. MP	65	52	66
MP vs. 1	70	N/A	50, 62, 64
2 vs. MP	N/A	51	51, 66
MP vs. 2	N/A	N/A	50, 64
3 vs. MP	55	-	52, 59
MP vs. 3	70	-	50, 51, 64

Data Set	49	51	52
TreeBASE ID	S3x10x98c09c42c47/ M184c3x2x98c11c12c31	S1262/M2204	S2x14x97c16c11c45/ M165c2x14xM165c2x14x
Model 1	TVM+Γ	GTR+I	GTR+I+Γ
Model 2	HKY+Γ	HKY+Γ	GTR+Γ
Model 3	-	HKY+I	TrNef+Γ
1 vs. 2	51, 61, 68	N/A	N/A
2 vs. 1	N/A	N/A	N/A
1 vs. 3	-	N/A	58
3 vs. 1	-	N/A	N/A
2 vs. 3	-	N/A	59
3 vs. 2	-	N/A	N/A
1 vs. K2P	51, 68, 74, 81	N/A	53, 58
K2P vs. 1	N/A	N/A	52
2 vs. K2P	60, 70, 78	N/A	52, 59
K2P vs. 2	60, 73, 87	N/A	52
3 vs. K2P	-	N/A	57
K2P vs. 3	-	N/A	52
1 vs. MP	51, 68, 70, 72, 74, 81	54, 55	53, 59
MP vs. 1	N/A	N/A	N/A
2 vs. MP	52, 62, 70, 78	51, 52	52, 73
MP vs. 2	66, 94	N/A	N/A
3 vs. MP	-	52, 53	56, 57
MP vs. 3	-	N/A	58

Data Set	59	65	73
TreeBASE ID	S322/M401	S964/M1596	S440/M647

Model 1	TVM+Γ	K3Puf+I+Γ	TrN+I+Γ
Model 2	TrN+Γ	K3Puf+Γ	K2P+I+Γ
Model 3	TVMef+Γ	HKY+Γ	-
1 vs. 2	N/A	N/A	52
2 vs. 1	N/A	N/A	N/A
1 vs. 3	N/A	N/A	-
3 vs. 1	N/A	N/A	-
2 vs. 3	N/A	N/A	-
3 vs. 2	N/A	N/A	-
1 vs. K2P	51, 62, 78	N/A	53, 55
K2P vs. 1	N/A	83	N/A
2 vs. K2P	62, 62, 80	N/A	52, 53
K2P vs. 2	N/A	83	51
3 vs. K2P	52, 59, 80	N/A	-
K2P vs. 3	N/A	83	-
1 vs. MP	51, 62, 78	N/A	53
MP vs. 1	67, 92	88	N/A
2 vs. MP	62, 62, 80	N/A	53
MP vs. 2	67, 92	88	54
3 vs. MP	52, 59, 80	N/A	-
MP vs. 3	67, 92	88	-

Data Set	79	98	100
TreeBASE ID	S1053/M1794	S568/M861	S11x6x95c10c11c33/ M58c11x6x95c10c13c27
Model 1	GTR+I+Γ	GTR+Γ	SYM+Γ
Model 2	SYM+I+Γ	TIM+I+Γ	TrNef+Γ
Model 3	TrNef+I+Γ	HKY+Γ	K2P+Γ
1 vs. 2	N/A	53	50, 55

2 vs. 1	N/A	N/A	N/A
1 vs. 3	53	N/A	55
3 vs. 1	N/A	N/A	N/A
2 vs. 3	51	N/A	N/A
3 vs. 2	N/A	54	50
1 vs. K2P	N/A	53, 64	N/A
K2P vs. 1	N/A	61, 64, 89	52, 58
2 vs. K2P	N/A	56	N/A
K2P vs. 2	N/A	61, 64, 89	52, 58, 60, 61
3 vs. K2P	N/A	59, 66	N/A
K2P vs. 3	52	61, 64, 89	52, 58, 61
1 vs. MP	N/A	53, 58, 64	N/A
MP vs. 1	51	54, 64, 75, 88	65
2 vs. MP	N/A	54, 56	N/A
MP vs. 2	51	54, 64, 75, 88	65, 70, 77
3 vs. MP	N/A	54, 59, 60, 66	N/A
MP vs. 3	51, 61	54, 64, 75, 88, 94	65, 70

Data Set	108	111	112
TreeBASE ID	S584/M880	S375/M515	S1197/M2066
Model 1	TIM+I+Γ	TVM+Γ	HKY+Γ
Model 2	K2P+Γ	TrN+I+Γ	HKY+I
Model 3	K2P+I	HKY+Γ	HKY
1 vs. 2	56	N/A	N/A
2 vs. 1	51, 70	N/A	N/A
1 vs. 3	56	N/A	N/A
3 vs. 1	52, 69	N/A	N/A
2 vs. 3	N/A	N/A	N/A

3 vs. 2	N/A	N/A	N/A
1 vs. K2P	56	N/A	N/A
K2P vs. 1	72	57, 59, 62, 75	N/A
2 vs. K2P	51	N/A	N/A
K2P vs. 2	N/A	57, 59, 62, 75	N/A
3 vs. K2P	52	N/A	N/A
K2P vs. 3	N/A	57, 59, 62, 75	N/A
1 vs. MP	56	70, 74	N/A
MP vs. 1	74	51, 51, 53, 57, 80	62
2 vs. MP	51	69, 70	N/A
MP vs. 2	N/A	51, 51, 53, 57, 80	62
3 vs. MP	52	71, 75	N/A
MP vs. 3	N/A	51, 51, 53, 57, 80	62

Data Set	**122**	**123**	**124**
TreeBASE ID	S1097/M1877	S619/M955	S902/M1482
Model 1	GTR+I+Γ	GTR+I+Γ	HKY+I+Γ
Model 2	K2P+I+Γ	SYM+I+Γ	K2P+I+Γ
Model 3	K2P+I	-	-
1 vs. 2	N/A	N/A	N/A
2 vs. 1	N/A	N/A	N/A
1 vs. 3	N/A	-	-
3 vs. 1	N/A	-	-
2 vs. 3	N/A	-	-
3 vs. 2	N/A	-	-
1 vs. K2P	N/A	69	N/A
K2P vs. 1	N/A	N/A	N/A
2 vs. K2P	N/A	69	N/A

K2P vs. 2	N/A	N/A	N/A
3 vs. K2P	N/A	-	-
K2P vs. 3	N/A	-	-
1 vs. MP	N/A	69	52
MP vs. 1	N/A	N/A	51
2 vs. MP	N/A	69	50
MP vs. 2	N/A	N/A	51
3 vs. MP	N/A	-	-
MP vs. 3	N/A	-	-

Data Set	134	136	137
TreeBASE ID	S284/M322	S554/M825	S1037/M1765
Model 1	TIM+I+Γ	TVM+I+Γ	TIM+Γ
Model 2	TIMef+I+Γ	K3Puf+Γ	F81+Γ
Model 3	-	-	F81+I
1 vs. 2	N/A	N/A	62
2 vs. 1	N/A	54	53
1 vs. 3	-	-	56, 62
3 vs. 1	-	-	52
2 vs. 3	-	-	51
3 vs. 2	-	-	N/A
1 vs. K2P	53	N/A	N/A
K2P vs. 1	N/A	54, 60, 89	N/A
2 vs. K2P	52	N/A	53
K2P vs. 2	N/A	54, 60	61
3 vs. K2P	-	-	52
K2P vs. 3	-	-	53, 61
1 vs. MP	53, 87, 94	N/A	56, 62, 64

MP vs. 1	58	53, 66, 95	N/A
2 vs. MP	52, 86, 95	N/A	51, 53, 64
MP vs. 2	58	53, 66	N/A
3 vs. MP	-	-	52, 64
MP vs. 3	-	-	N/A

Data Set	147	149	161
TreeBASE ID	S422/M616	S357/M489	S799/M1265
Model 1	TVM+I+Γ	TVM+I+Γ	TVM+I+Γ
Model 2	TVM+Γ	TrN+I+Γ	TVMef+Γ
Model 3	K3Puf+I+Γ	TVMef+I+Γ	HKY+Γ
1 vs. 2	50	N/A	51
2 vs. 1	N/A	N/A	51
1 vs. 3	N/A	N/A	N/A
3 vs. 1	52	N/A	N/A
2 vs. 3	N/A	N/A	51
3 vs. 2	52, 53	N/A	53
1 vs. K2P	50, 71	N/A	N/A
K2P vs. 1	51, 52, 54, 54	53	N/A
2 vs. K2P	61	N/A	51
K2P vs. 2	51, 52, 54, 54	53	54
3 vs. K2P	52, 53, 69	N/A	N/A
K2P vs. 3	51, 52, 54, 54	53	N/A
1 vs. MP	50, 71	57	N/A
MP vs. 1	51, 55, 60	57, 65	N/A
2 vs. MP	61	61	51, 64
MP vs. 2	51, 55, 60	57, 65	64
3 vs. MP	52, 53, 69	59	62

| MP vs. 3 | 51, 55, 60 | 57, 65 | N/A |

Data Set	**165**	**166**	**169**
TreeBASE ID	S1229/M2139	S305/M347	S1059/M1806
Model 1	HKY+Γ	GTR+I+Γ	GTR+I+Γ
Model 2	HKY+I	TrNef+I+Γ	TrN+I+Γ
Model 3	HKY	-	TrNef+I+Γ
1 vs. 2	N/A	53, 56	N/A
2 vs. 1	N/A	54, 55	N/A
1 vs. 3	54	-	N/A
3 vs. 1	N/A	-	N/A
2 vs. 3	54	-	N/A
3 vs. 2	N/A	-	N/A
1 vs. K2P	N/A	56	N/A
K2P vs. 1	N/A	54, 59, 78	51, 51
2 vs. K2P	N/A	N/A	N/A
K2P vs. 2	N/A	52, 54	51, 51
3 vs. K2P	N/A	-	N/A
K2P vs. 3	54	-	51, 51
1 vs. MP	54	52, 53, 56, 69, 71	55, 56
MP vs. 1	51	51, 54, 67, 89	51, 51, 53
2 vs. MP	54	64, 67, 78	54, 56
MP vs. 2	51	51, 54	51, 51, 53
3 vs. MP	N/A	-	54, 56
MP vs. 3	51	-	51, 51, 53

Data Set	**176**	**198**	**199**

TreeBASE ID	S887/M1438	S621/M959	S1092/M1867
Model 1	TVM+I+Γ	TIMef+Γ	TVM+I
Model 2	HKY+I+Γ	TrNef+Γ	K3Puf+Γ
Model 3	-	K2P+I	K3Puf+I
Model 4	-	JC+Γ	-
1 vs. 2	N/A	N/A	N/A
2 vs. 1	N/A	N/A	N/A
1 vs. 3	-	N/A	N/A
3 vs. 1	-	N/A	N/A
1 vs. 4	-	N/A	-
4 vs. 1	-	N/A	-
2 vs. 3	-	N/A	N/A
3 vs. 2	-	N/A	N/A
2 vs. 4	-	N/A	-
4 vs. 2	-	N/A	-
3 vs. 4	-	N/A	-
4 vs. 3	-	N/A	-
1 vs. K2P	51	N/A	N/A
K2P vs. 1	52	N/A	N/A
2 vs. K2P	58	N/A	N/A
K2P vs. 2	52	N/A	N/A
3 vs. K2P	-	N/A	N/A
K2P vs. 3	-	N/A	N/A
4 vs. K2P	-	N/A	-
K2P vs. 4	-	N/A	-
1 vs. MP	51	N/A	N/A
MP vs. 1	N/A	N/A	N/A
2 vs. MP	58	N/A	N/A
MP vs. 2	N/A	N/A	N/A

3 vs. MP	-	N/A	N/A
MP vs. 3	-	N/A	N/A
4 vs. MP	-	N/A	-
MP vs. 4	-	N/A	-

Data Set	217	221	222
TreeBASE ID	S1072/M1828	S983/M1636	S773/M1224
Model 1	GTR+I+Γ	GTR+I+Γ	GTR+I+Γ
Model 2	TIM+I+Γ	TrN+Γ	TVM+I+Γ
Model 3	-	K2P+I	TrN+I+Γ
1 vs. 2	51	N/A	N/A
2 vs. 1	N/A	N/A	N/A
1 vs. 3	-	N/A	N/A
3 vs. 1	-	N/A	N/A
2 vs. 3	-	N/A	N/A
3 vs. 2	-	N/A	N/A
1 vs. K2P	51, 52, 59, 59, 63, 68	N/A	52
K2P vs. 1	50, 65	N/A	51, 52
2 vs. K2P	54, 55, 56, 63, 66	N/A	53
K2P vs. 2	50, 65	N/A	51, 52
3 vs. K2P	-	N/A	58
K2P vs. 3	-	N/A	51, 52
1 vs. MP	51, 52, 59, 63, 72	N/A	52
MP vs. 1	50, 55	N/A	52
2 vs. MP	54, 55, 63, 68	N/A	53
MP vs. 2	50, 55	N/A	52
3 vs. MP	-	N/A	58
MP vs. 3	-	N/A	52

Data Set	224	227	237
TreeBASE ID	S1126/M1930	S396/M564	S1231/M2143
Model 1	TrN+I+Γ	GTR+I+Γ	TVM+I+Γ
Model 2	TrN+I	TrN+I+Γ	HKY+I+Γ
Model 3	TrNef+I	-	-
1 vs. 2	N/A	N/A	54
2 vs. 1	N/A	55	N/A
1 vs. 3	N/A	-	-
3 vs. 1	N/A	-	-
2 vs. 3	N/A	-	-
3 vs. 2	N/A	-	-
1 vs. K2P	N/A	N/A	N/A
K2P vs. 1	55	53, 55, 67	51, 54
2 vs. K2P	N/A	N/A	N/A
K2P vs. 2	55	53, 55	51, 54, 56
3 vs. K2P	N/A	-	-
K2P vs. 3	55	-	-
1 vs. MP	N/A	N/A	N/A
MP vs. 1	66	53, 56, 59, 61, 78	57, 59
2 vs. MP	N/A	N/A	N/A
MP vs. 2	66	53, 56, 59, 61	57, 59, 65
3 vs. MP	N/A	-	-
MP vs. 3	66	-	-

Data Set	241	242	245
TreeBASE ID	S1127/M1933	S1163/M2000	S1216/M2102

Model 1	TVM+I	GTR+I	GTR+I+Γ
Model 2	K2+I	K2P+Γ	TrN+I+Γ
Model 3	K2P	-	TrNef+I+Γ
1 vs. 2	N/A	62	N/A
2 vs. 1	N/A	53, 56	N/A
1 vs. 3	N/A	-	N/A
3 vs. 1	N/A	-	N/A
2 vs. 3	N/A	-	N/A
3 vs. 2	N/A	-	N/A
1 vs. K2P	N/A	N/A	59, 66, 67, 70
K2P vs. 1	N/A	60	58, 58, 62
2 vs. K2P	N/A	53, 56	52, 59, 63, 66
K2P vs. 2	N/A	59, 60	58, 58, 62
3 vs. K2P	N/A	-	54, 59, 64, 65
K2P vs. 3	N/A	-	58, 58, 62
1 vs. MP	N/A	N/A	59, 66, 67, 70
MP vs. 1	51	90	59, 74
2 vs. MP	N/A	53, 56	52, 59, 63, 66
MP vs. 2	51	82, 90	59, 74
3 vs. MP	N/A	-	54, 59, 64, 65
MP vs. 3	51	-	59, 74

Data Set	**250**

TreeBASE ID	S939/M1556
Model 1	SYM+Γ
Model 2	TrNef+Γ
1 vs. 2	51, 56
2 vs. 1	N/A

1 vs. K2P	51, 56, 59
K2P vs. 1	58
2 vs. K2P	N/A
K2P vs. 2	N/A
1 vs. MP	51
MP vs. 1	54
2 vs. MP	N/A
MP vs. 2	54