

Table S4. Parameter estimates and likelihood values for branch models among *PEBP* lineages. Significant chi-square comparisons were indicated with \* (pLRT<0.05), \*\* (pLRT<0.01), \*\*\* (pLRT<0.001).

Model Type	Branch Model	Fore-ground branch	LnL	Estimate of parameters	Model comparison	pLRT
0	Fixed	-	-4634.412778	$\omega=1.15119$		
1	Free-Ratio		-4578.273183	-	Model 1 vs Model 0	0.370
2	1	FT	-4634.024489	$\omega_1=1.12589$ $\omega_2=1.65765$	Model 2 vs Model 1	0.364
2	2	TFL1	-4630.306725	$\omega_1=1.10494$ $\omega_2=999.000$	Model 2 vs Model 1	0.562
2	3	CEN	-4634.056295	$\omega_1=1.17099$ $\omega_2=0.78996$	Model 2 vs Model 1	0.362
2	4	BFT	-4634.306541	$\omega_1=1.16330$ $\omega_2=0.91937$	Model 2 vs Model 1	0.350
2	5	(FT, BFT, TFL1, CEN)	-4634.316158	$\omega_1=1.16488$ $\omega_2=0.99487$	Model 2 vs Model 1	P<0.001 ***