

**Table S20:** Quasibinomial logistic regression results for amino acid and nucleotide datasets, including only alignment length and tree length, both ignoring and considering BS  $\geq$  70% support. Parameters are not transformed i.e. they represent the estimated ceteris paribus effect of the predictor on log odds. Dispersion gives the estimated quasibinomial dispersion parameter.

Dependent Variable: Total Concordant/Total Discordant				
<i>glm: quasibinomial</i>				
<i>link = logit</i>				
	AA	AA BS $\geq$ 70	Nuc	Nuc BS $\geq$ 70
Length	0.0002** (0.0001)	0.0002** (0.0001)	0.0001*** (0.0001)	0.0001*** (0.00004)
Tree_Length	0.266*** (0.076)	0.223*** (0.072)	0.567*** (0.166)	0.412** (0.176)
Constant	-1.756*** (0.168)	-2.575*** (0.173)	-1.187*** (0.229)	-1.867*** (0.249)
Dispersion	7.827	5.175	6.862	6.621
Observations	79	79	79	79

*Note:* \* p<0.1; \*\* p<0.05; \*\*\* p<0.01