

Table S2. Statistical comparison of the compositional heterogeneity observed across the taxa.

Taxa	28S rRNA		16S rRNA	
	p-value	z-score	p-value	z-score
<i>Cyzicus</i>	0.6995	-0.5296	0.5165	-0.1420
<i>Ozestheria</i>	0.7340	-0.6916	0.4497	0.1537
<i>Eocycticus</i>	0.5881	-0.5246	0.5224	-0.2174
<i>Leptestheria</i>	0.1860	0.8570	0.5976	-0.2980
<i>Eoleptestheria</i>	0.7750	-0.7090	0.2500	0.6930
<i>Maghrebestheria</i>	0.1160	1.0080	0.7495	-0.7145
<i>Limnadia</i>	0.7995	-0.7738	0.2000	0.5370
<i>Limnadopsis</i>	0.5085	-0.2336	0.5308	-0.3515
<i>Imnadia</i>	0.8435	-0.9958	0.3250	0.3950
<i>Paralimnadia</i>	0.4063	0.1551	0.2745	0.4705
<i>Metalimnadia</i>	0.4125	0.0825		
<i>Eulimnadia</i>	0.7659	-0.7329	0.04*	2.998*
<i>Calalimnadia</i>	0.5500	-0.3470		
<i>Australimnadia</i>	0.2320	0.8620	0.574	-0.296
<i>Gondwanalimnadia</i>	0.8750	-0.9160		

P-values indicate the statistical significance of test and z-scores quantify the amount of compositional heterogeneity (with * indicating significant values). A Z-score value of more than 2 ($p < 0.05$) indicated that the taxa were significantly compositionally heterogeneous. The test statistic for the individual taxa indicated that the nucleotide composition of 8 specimens is significantly biased: *Leptestheria* sp. of India ($Z=2.817$, $p=0$), *Leptestheria brevisrostris* ($Z=4.763$, $p=0$), *Ozestheria pilosa* (MN584994: $Z=2.151$, $p=0.05$; MN584993: $Z=2.228$, $p=0.025$), *Eulimnadia braueriana* ($Z=3.013$, $p=0.025$), *Eulimnadia* sp. C ($Z=3.312$, $p=0.025$), *Eulimnadia* sp. H ($Z=2.156$, $p=0.025$), *Eulimnadia* sp. K ($Z=3.211$, $p=0.025$). These seven taxa with the most strongly deviating nucleotide composition were excluded.