

**Supplementary information 3. Fitting the number of site diversity categories covering at least 5% alignment sites for comparison between heterotachy model and site partitioning model.**

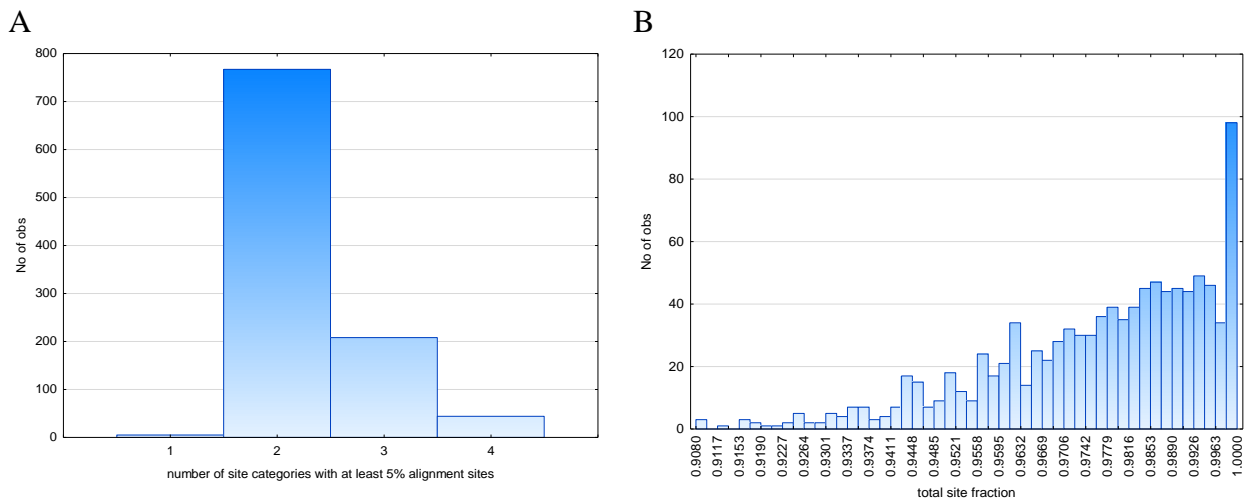


Fig. S3.1 The number of effective data categories in site partitioning model (A) and their cumulative fraction (B) in the case of **4** site diversity categories.

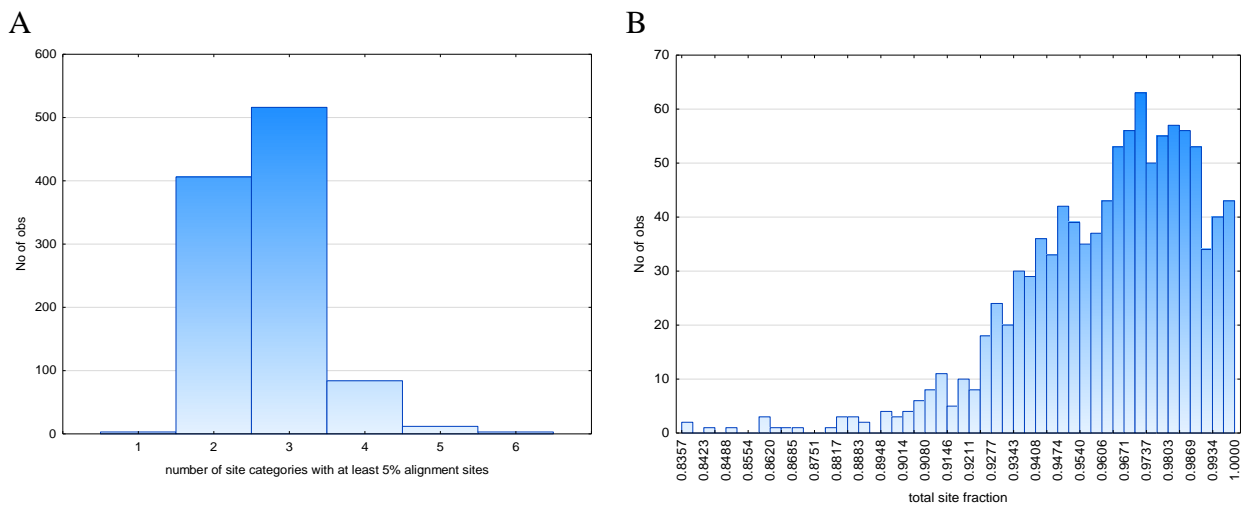


Fig. S3.2 The number of effective data categories in site partitioning model (A) and their cumulative fraction (B) in the case of **6** site diversity categories.

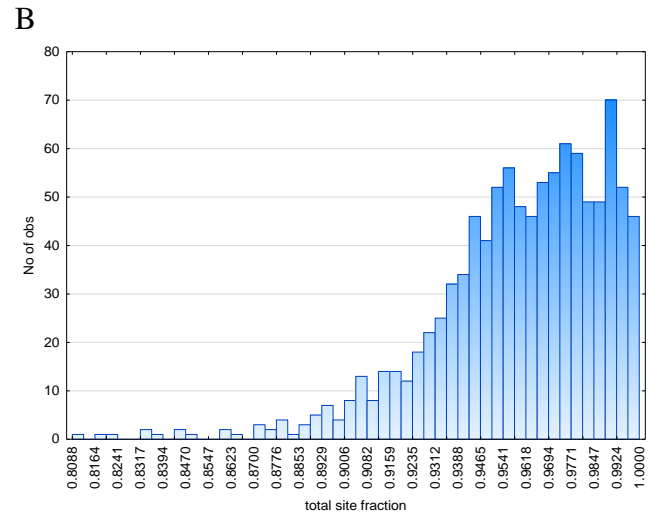
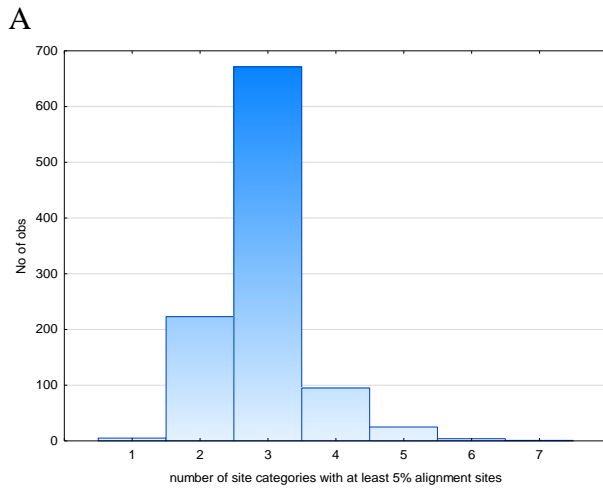


Fig. S3.3 The number of effective data categories in site partitioning model (A) and their cumulative fraction (B) in the case of **7** site diversity categories.

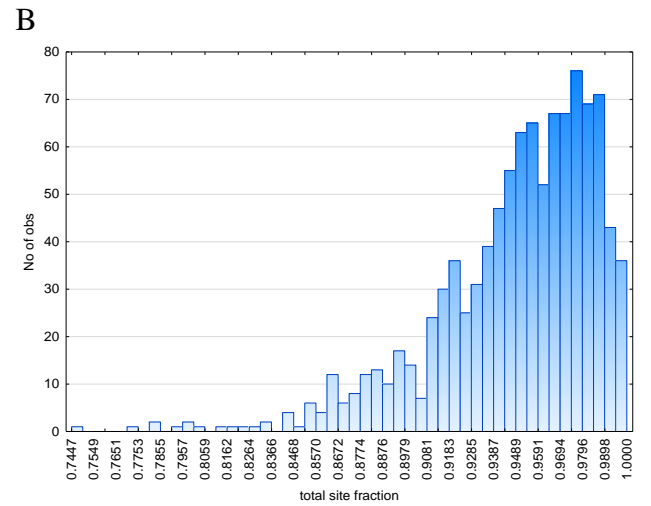
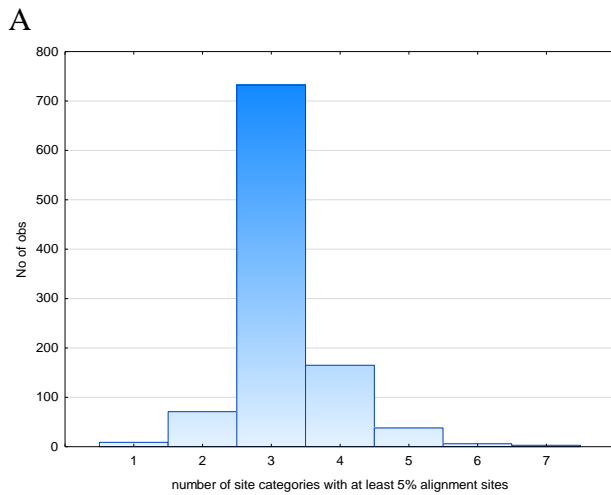


Fig. S3.4 The number of effective data categories in site partitioning model (A) and their cumulative fraction (B) in the case of **9** site diversity categories.

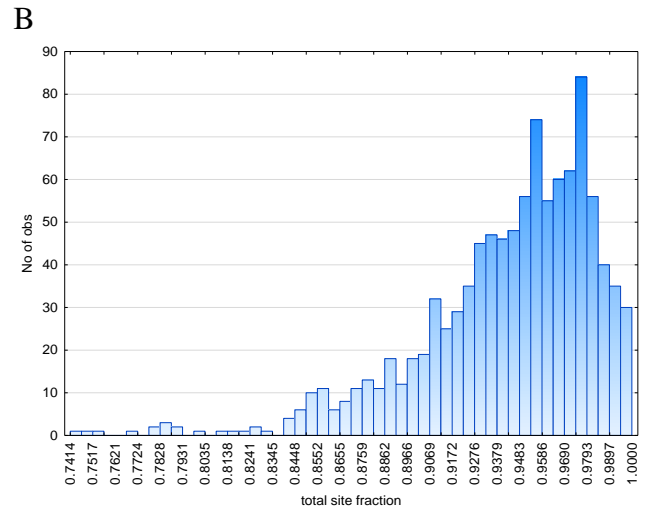
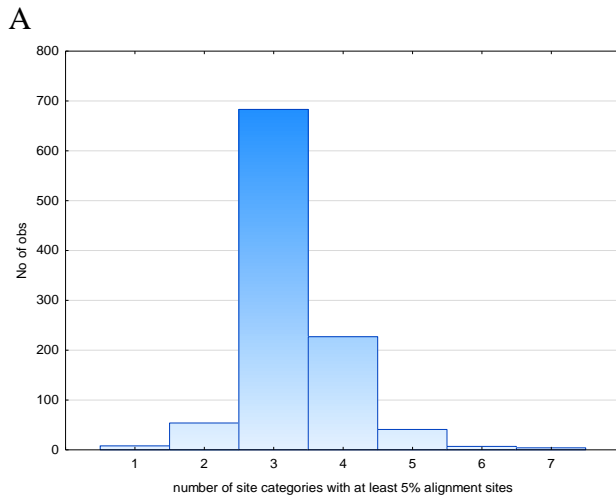


Fig. S3.5 The number of effective data categories in site partitioning model (A) and their cumulative fraction (B) in the case of **10** site diversity categories.

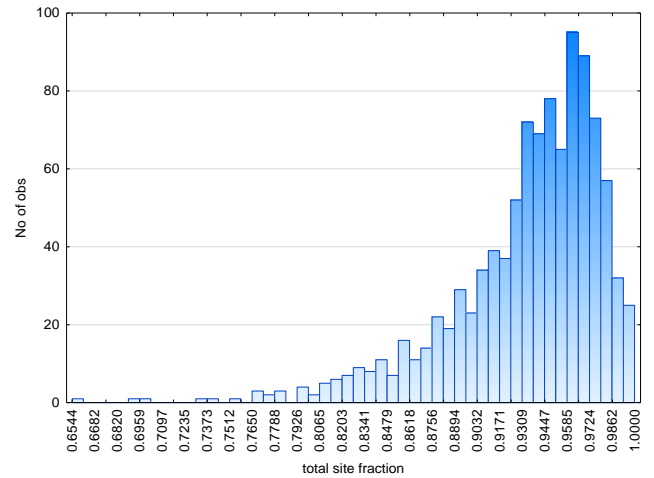
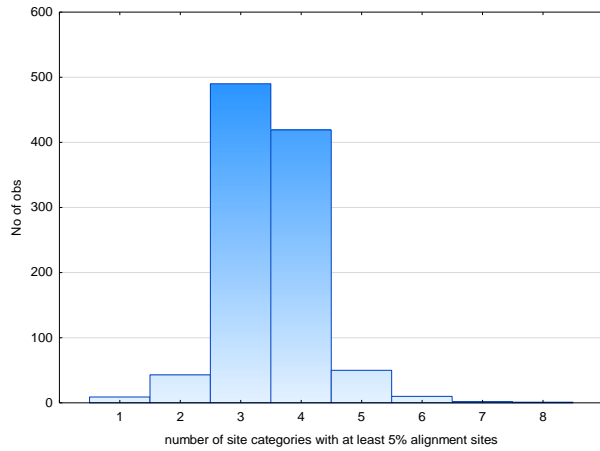


Fig. S3.6 The number of effective data categories in site partitioning model (A) and their cumulative fraction (B) in the case of **12** site diversity categories.