

List of priors used for the simulated dataset.

Parameter	Prior distribution
FBD diversification rate	Uniform[0; ∞ [
FBD turnover	Uniform[0; 1[
FBD sampling proportion	Uniform[0; 1[
Origin of the FBD process	Uniform[0; ∞ [
HKY+ Γ κ parameter	LogNormal(1.0,1.25)
HKY+ Γ shape of the Γ distribution	Exponential(1.0)
Relaxed clock mean rate	Uniform[0; ∞ [
Relaxed clock standard deviation	Gamma($\alpha = 0.5396, \beta = 0.3819$)