Table S1. Log-marginal likelihoods estimated from all models fitted to data.

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| --- | --- | --- |
| **Diffusion models** | **Relaxed clock** | **Strict clock** |
| Homogeneous Brownian | -2364.20 | -2368.69 |
| Cauchy | -2367.58 | -2375.33 |
| Gamma | -2362.93 | -2369.06 |
| Lognormal | -2365.46 | -2374.05 |

The model with a relaxed clock and gamma-distributed random walk model shows the best fit with the highest log-marginal likelihood.