

Table S5: Comparison of Computation Times for Bayesian Inference of Epidemic Parameters from Genetic Sequence Data using SIR Models

Data Type	Inference Model	Mean time per million samples (MCMC)
Sim. Study ($R_0 \approx 2.50$)	Stoch.Coal.SIR	20m 41s
	Deter.Coal.SIR	3m 27s
	BDSIR	56m 27s
Sim. Study ($R_0 \approx 1.50$)	Stoch.Coal.SIR	1h 43m 30s
	Deter.Coal.SIR	3m 47s
	BDSIR	41m 35s
Sim. Study ($R_0 \approx 1.10$)	Stoch.Coal.SIR	1h 50m 41s
	Deter.Coal.SIR	6m 45s
	BDSIR	41m 21s
H1N1	Stoch.Coal.SIR	1h 20m 55s
	Deter.Coal.SIR	9m 44s
	BDSIR	47m 33s
HIV-1	Stoch.Coal.SIR	14h 37m 45s
	Deter.Coal.SIR	7m 56s
	BDSIR	1h 38m 54s