



**Figure S.5:** Optimal ML for the Nad5 dataset under the GTR+I+G model (-ln likelihood = +25890.93262; optimal parameters: A/C = 1.80485, A/G = 4.72086, A/T = 0.20628, C/G = 0.84334, C/T = 7.76839 G/T = 1(fixed); f(A) = 0.28617, f(C) = 0.17771, f(G) = 0.19301, f(T) = 0.3431; gamma shape = 0.954; proportion invariant = 0.160).