

$$\mathbf{P}(t) = \begin{pmatrix} P(y(t) = A | y(0) = A) & \dots & P(y(t) = A | y(0) = T) \\ P(y(t) = G | y(0) = A) & \dots & P(y(t) = G | y(0) = T) \\ P(y(t) = C | y(0) = A) & \dots & P(y(t) = C | y(0) = T) \\ P(y(t) = T | y(0) = A) & \dots & P(y(t) = T | y(0) = T) \end{pmatrix}$$