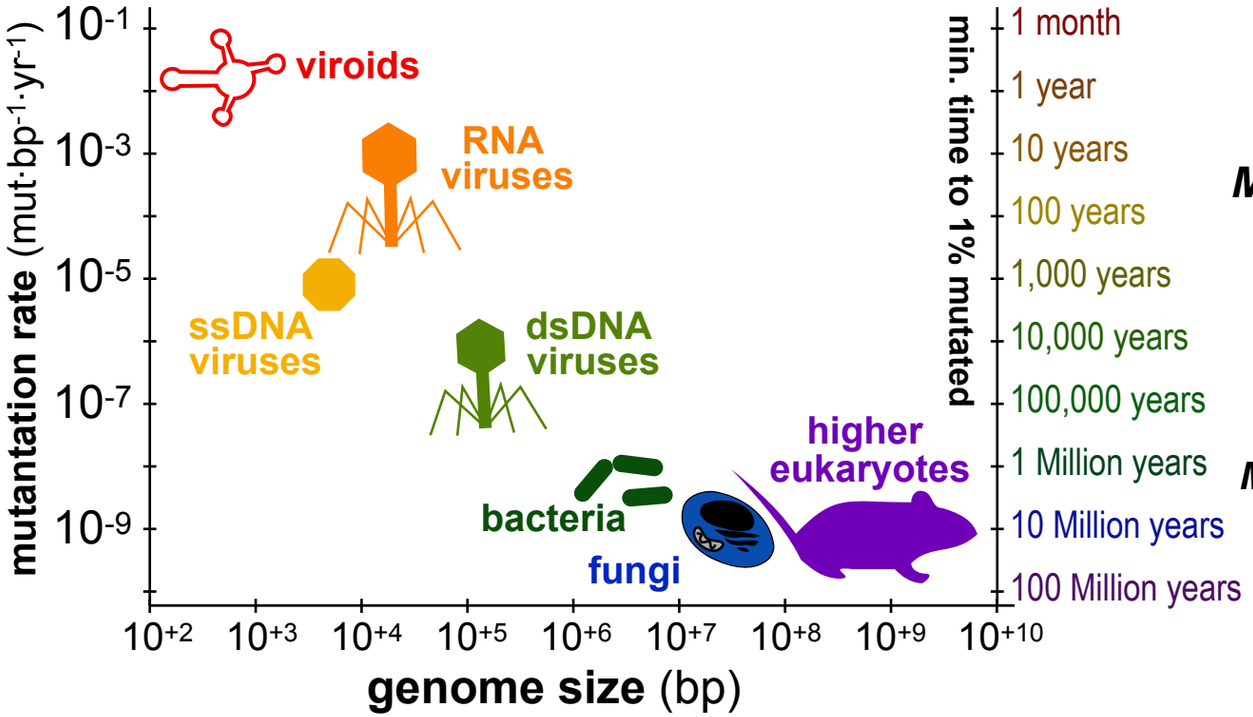
Mutation Rate(*Individuals*) = **Maximum/Neutral Substituion Rate**(*Populations*)



DNA polymerase

$$\textit{Mutation Rate} = \textit{Error Rate}\,\frac{\textit{Damage Rate}}{\textit{Repair Rate}}$$

# of population mutations

$$\textit{Max. Subst. Rate} = \frac{\textit{Population} \times \textit{Mutation Rate}}{\textit{Population}}$$

Mutant "Fixation" Probability

Jukes-Cantor Model: *% Mutated is not % DNA-sequence change*

$$\textit{\% Sequence Change} = 75\% \times (1 - e^{-\textit{Mut-Rate}\cdot \textit{time}})$$