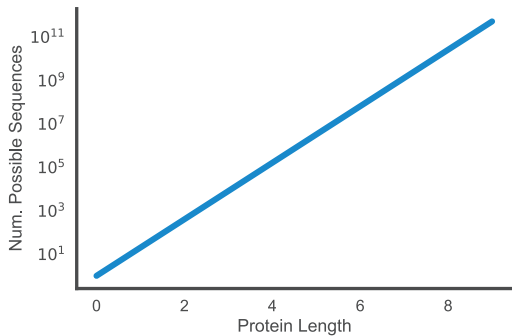


## Combinatorial explosion in protein sequence space



No notion of  
forward momentum

MEANAT . . . NNST **D**AA

substitution

MEANAT . . . NNST **Q**AA

reversion

MEANAT . . . NNST **D**AA

time