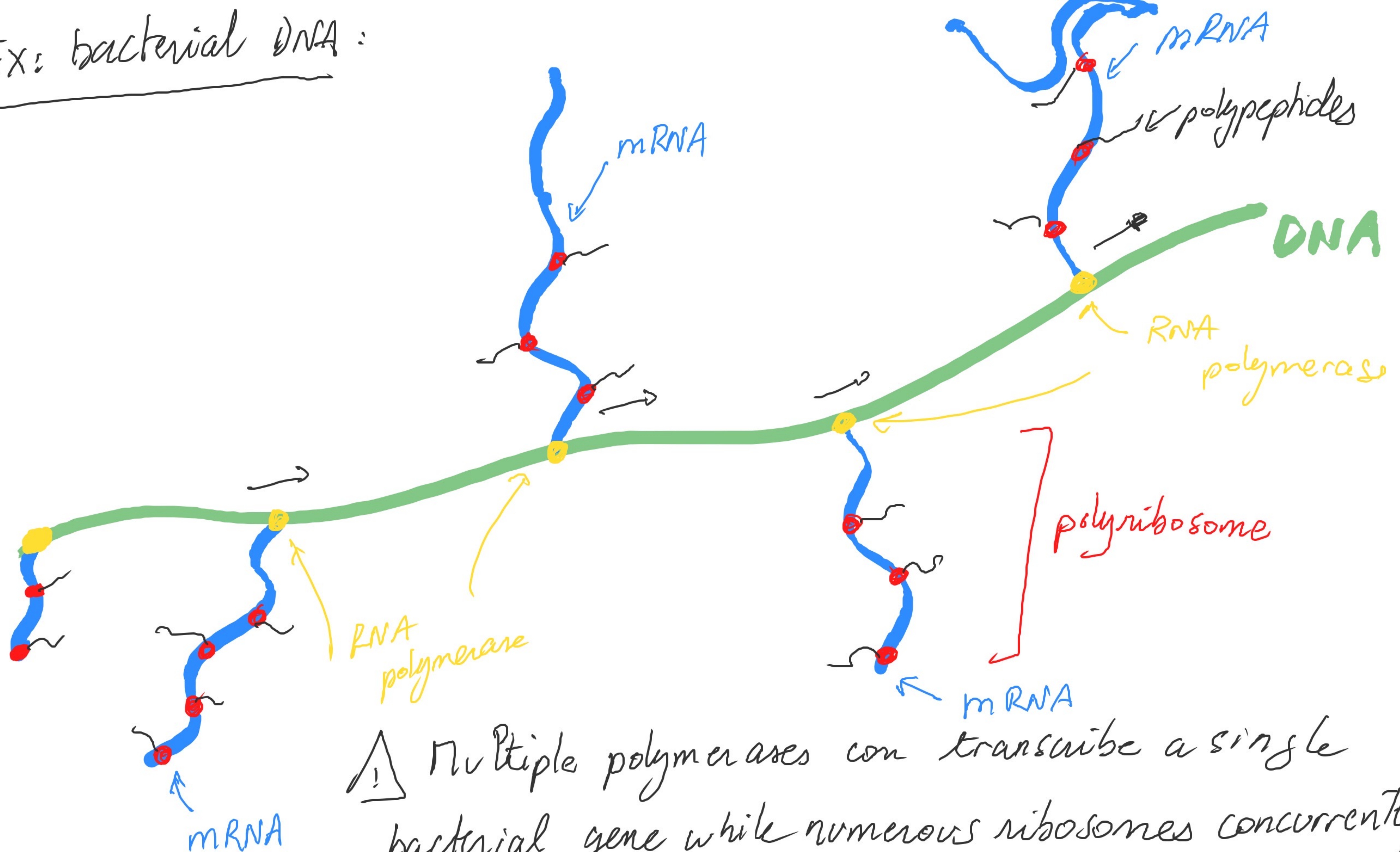
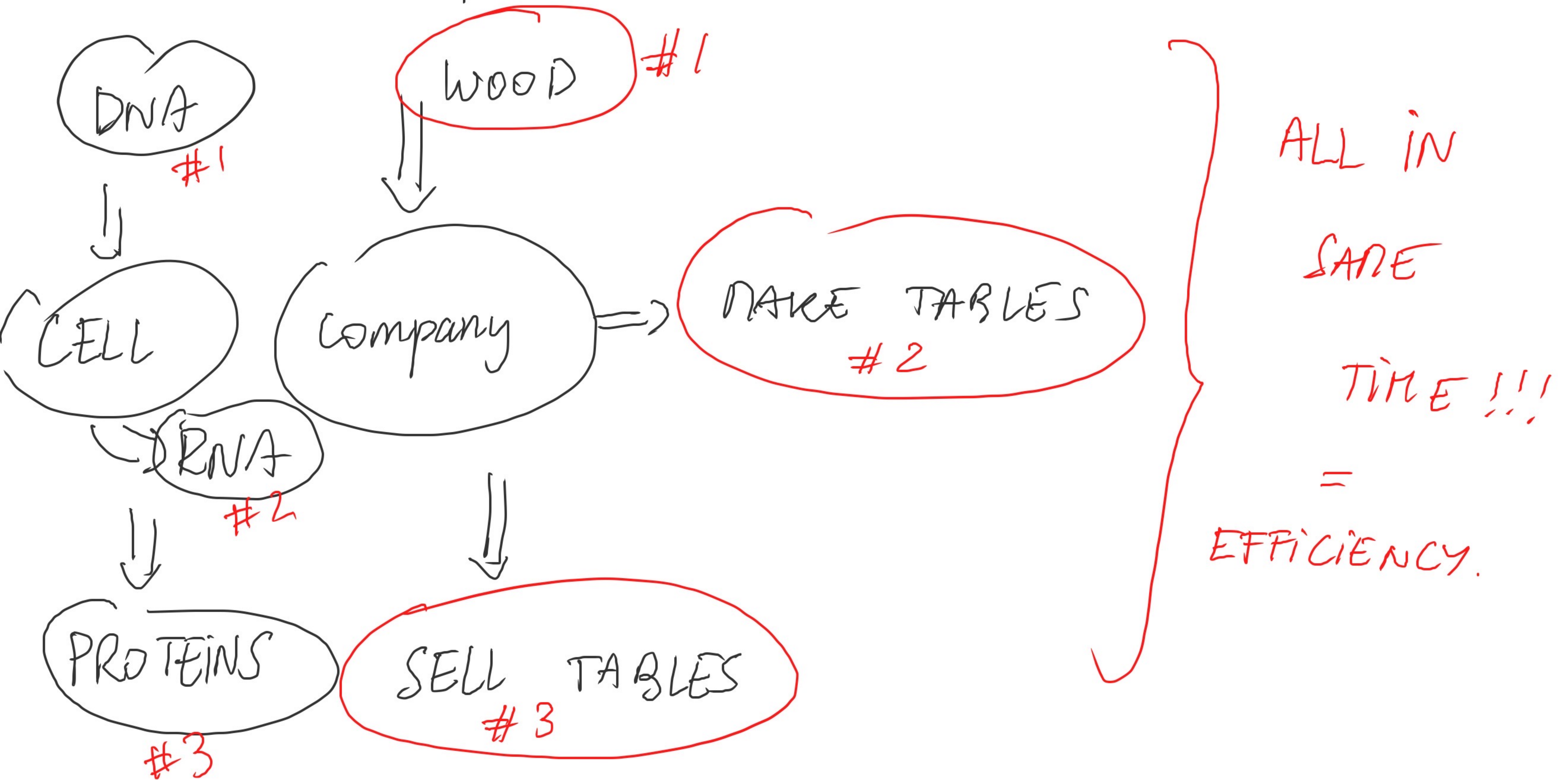


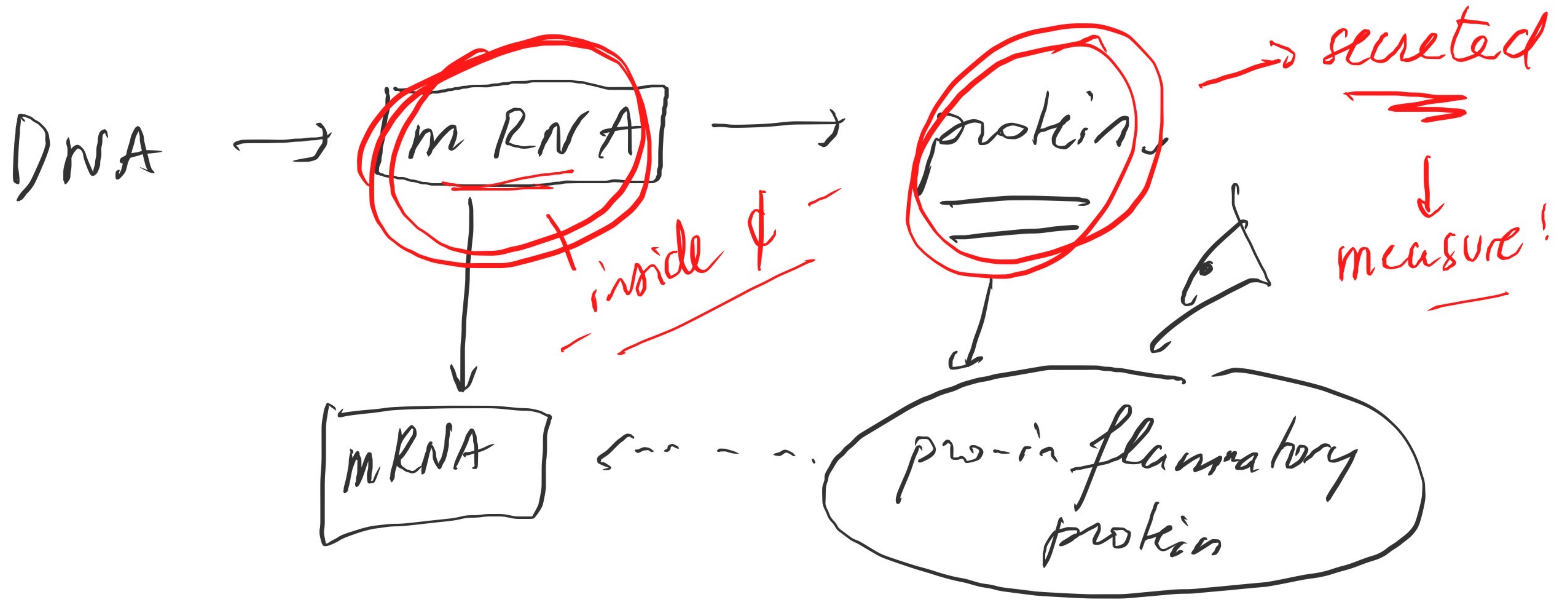
Ex: bacterial DNA:



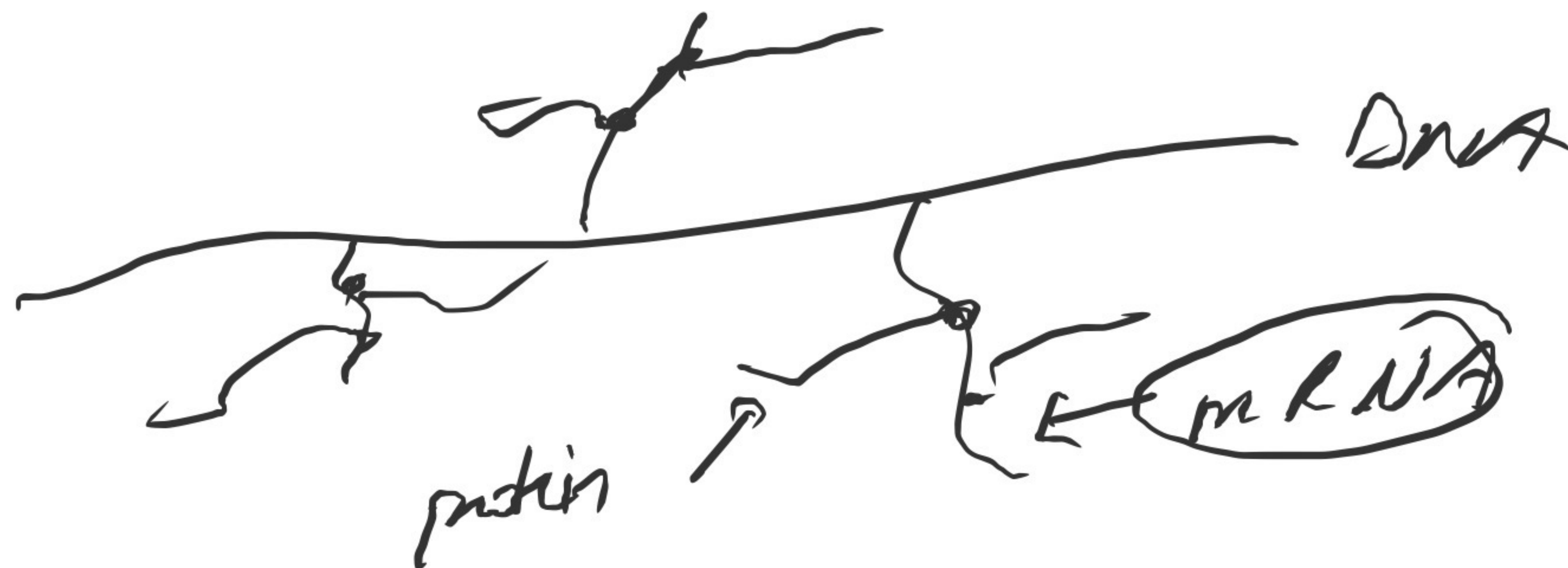
! Multiple polymerases can transcribe a single bacterial gene while numerous ribosomes concurrently translate mRNA \rightarrow polypeptides. In this way, a specific protein can RAPIDLY reach high concentration.

Ex : Company who makes wood table (kitchen)

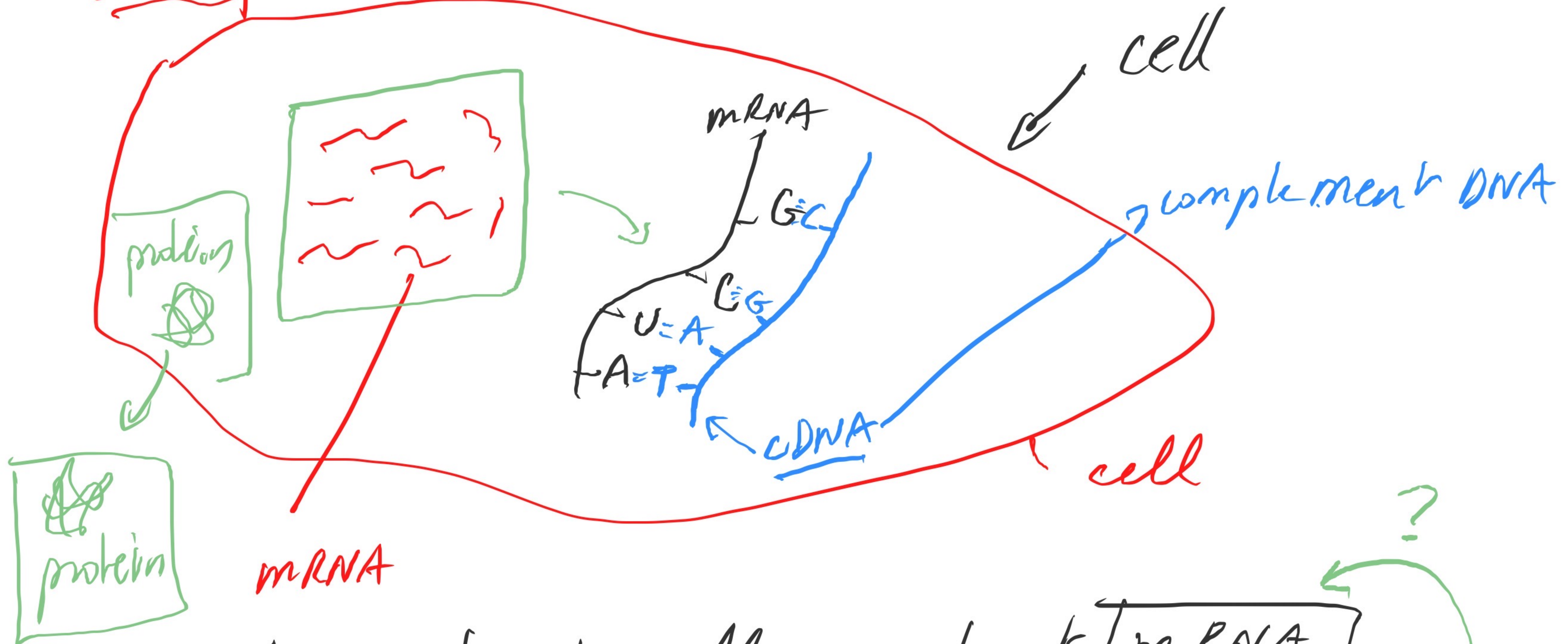




mRNA level is PROPORTIONAL TO THE PROTEINS.



cell inflamed or not?



mRNA

break cell → extract mRNA

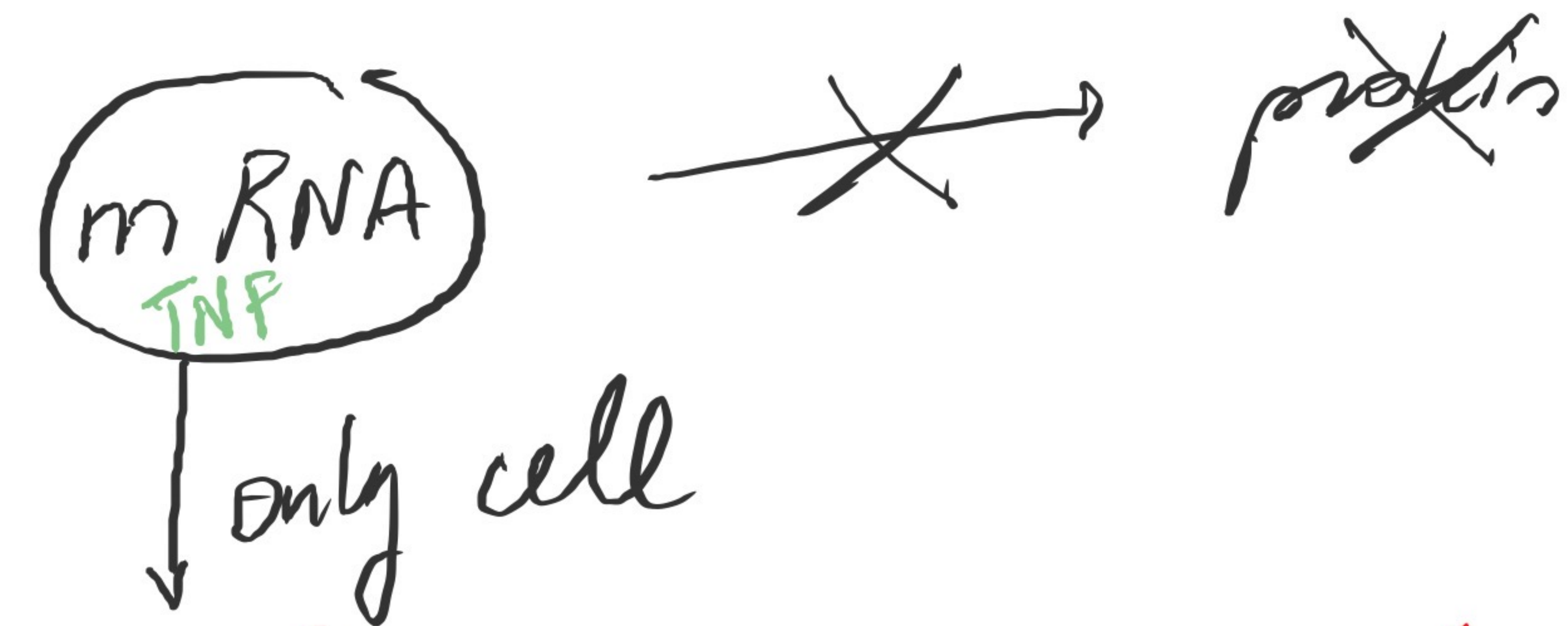
small amount mRNA → cDNA

cDNA → multiply it →

Quantify it

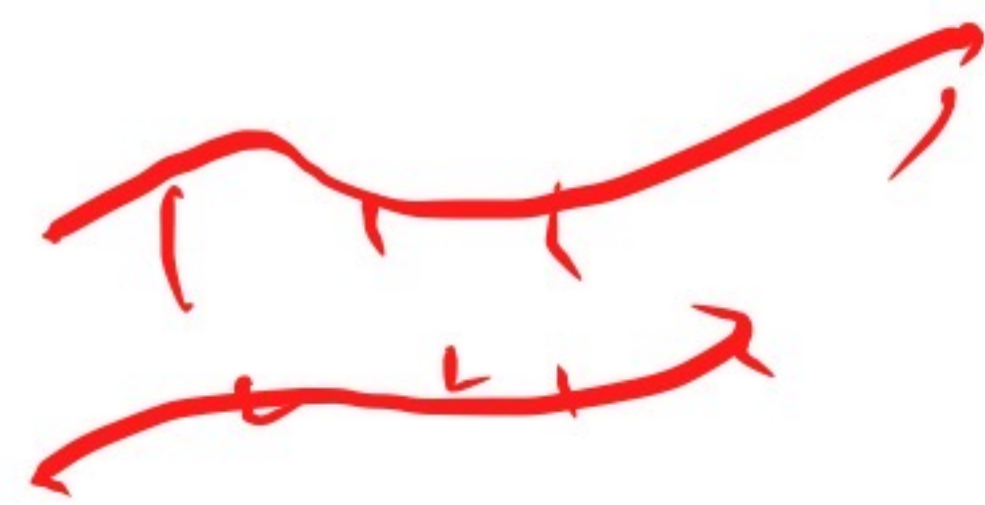


TNF = Tumor Necrosis factor
(bad protein!)



cDNA
TNF

Amplify

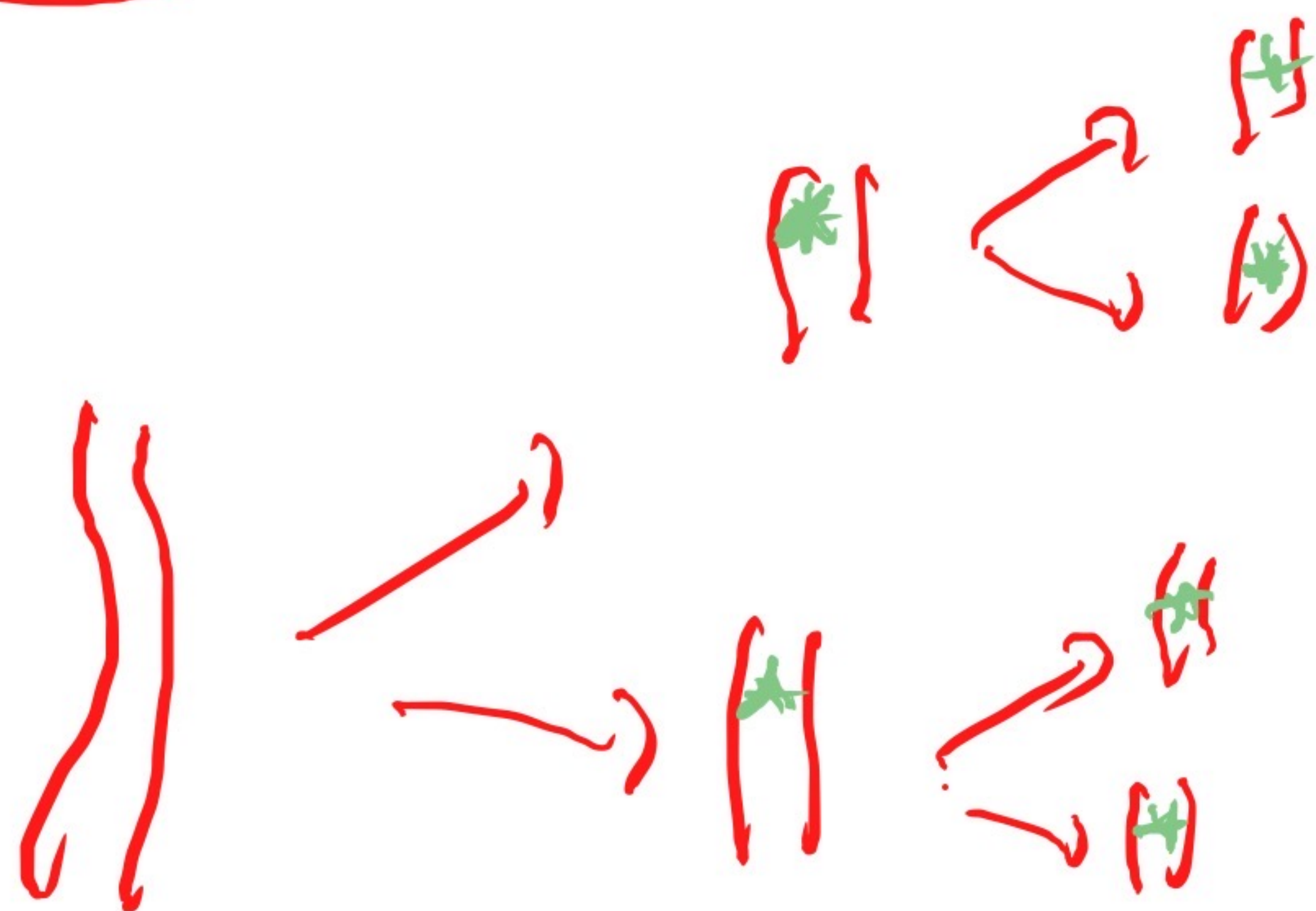


→ 94°C ---> ←
primer
~60°C

fluorescent dye

↓
Elongation

Exact [mRNA]
TNF



2^1

2^2

...

2^n

→ $n = \# \text{ of cycles}$