→ Autoclaved — To remove other microbes.

15 atm, 121°C, 15 min

⊛ Temperature, pH is needed to grow bacteria too.

8th January 2024

Bio Lab →

LB Media →

100mL water

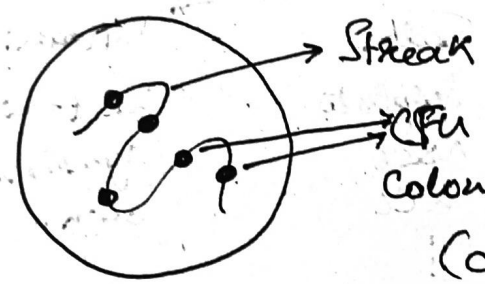
Tryptone — 1 gm

Yeastextract — 0.5gm

NaCl — 1gm

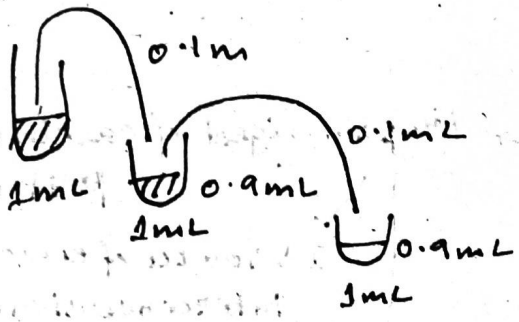
Growth curve →

We would grow E.Coli



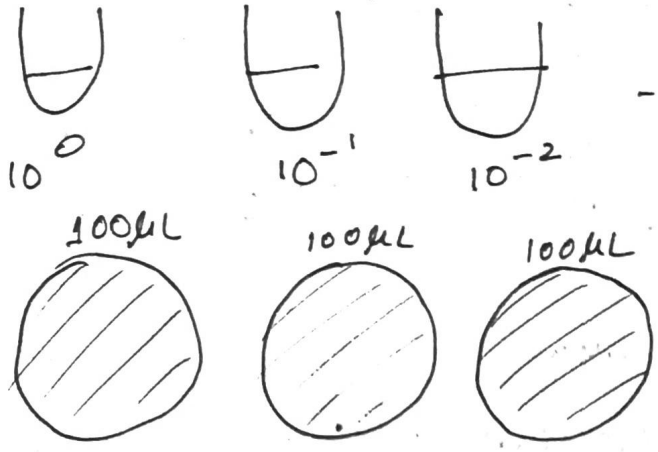
Colony forming unit - (colony grew from 1 bacteria)

If we are given a sample, how can we estimate the number of bacteria in sample?



Serial dilutions

10x each time



→ Spread on petri

→ Count CFUs

~~If you~~ If you have > 300, difficult to count.

If you have ~~<30~~ < 30, too little (statistically bad)

~~$50 \rightarrow 10^{-6}$ μl~~

~~$\gg \rightarrow$~~

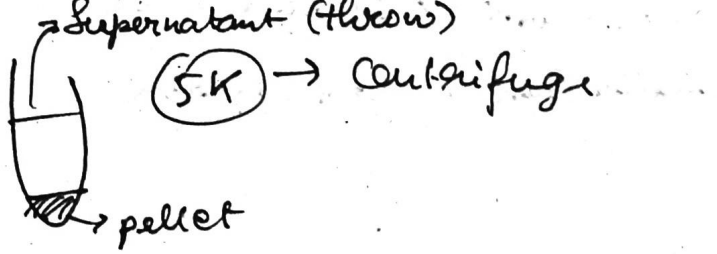
~~$(1L = 50 \times 10^{1})\ 10^{-8}$~~

~~$\Rightarrow 1L = 50 \times 10^{9}$~~

Now say for about $10^3/L$ num of bacteria?

The number is too small for the previous techniques.

→ We centrifuge, take pellet and dissolve it in smaller volume, then repeat.



→ We could also use molecular ~~se~~ sieve paper to filter solution, dissolve what is on paper in lower volume, then repeat prev method.

If we want quicker results, we take OD.

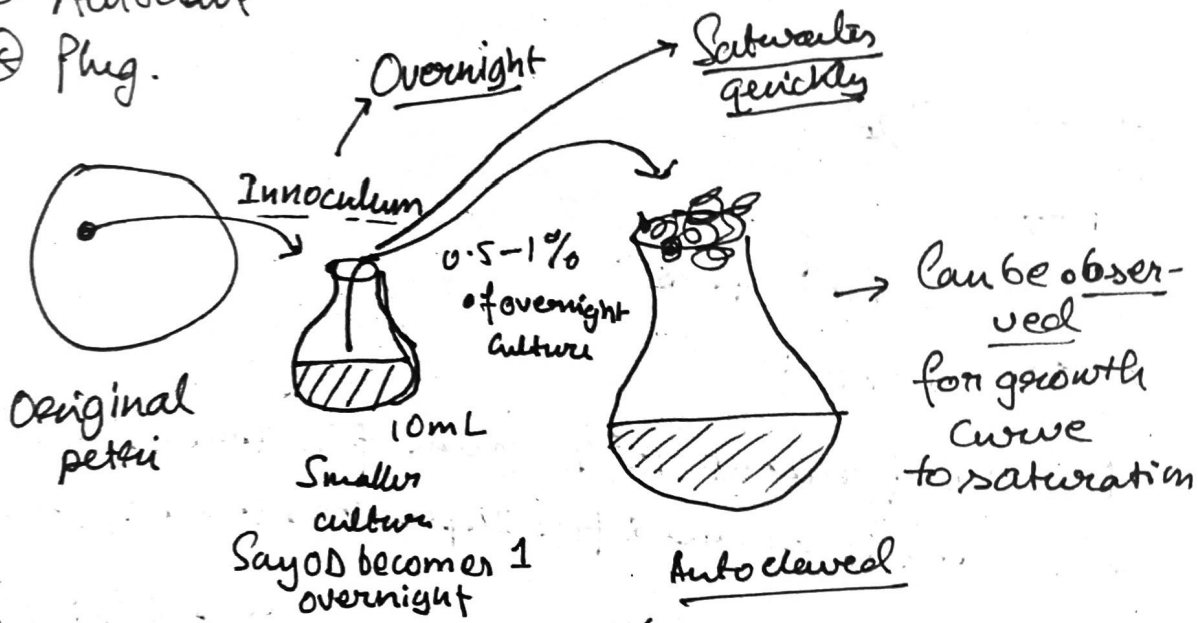
$\lambda = 600nm$

O.D 1 ≡ 10^9/mL ↳ culture

We O.D the culture at fixed intervals, and use the fixed (determined solutions) to calculate.

Today's ~~experi~~ experiment →

- Prepare LB agar
- Autoclave
- Plug.



Generation time – 20 – 25 min (E. Coli)

Bigger flask → 50mL media

Smaller flask → 20mL media