

③ Frank Hertz →

Atoms emit radiation at discrete frequencies.

④ Velocity of light → Next week

Bio Lab →

15th January 2024

Growth Curve

50 mL LB media

Overnight inoculum culture (1% — 0.5 mL)

↳ (8h) (upto 12h, not more)

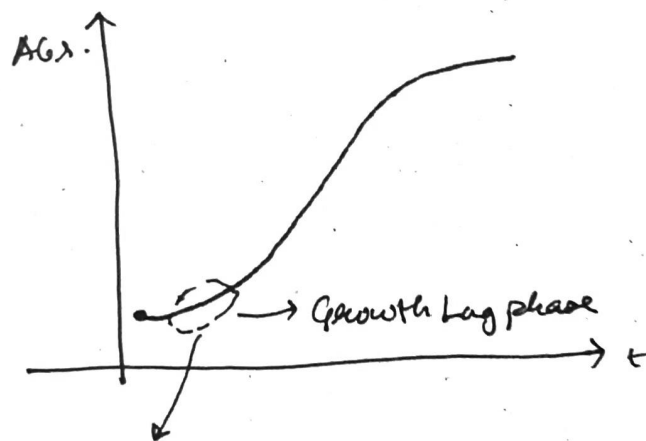
1 mL OD as reference before adding inoculum.

↓

Just after adding

↓

30 min, etc.



Length depends on length of

'overnight'

— longer overnight means longer

colder temp heat shock bacteria

so it takes longer.

→ toxicity high

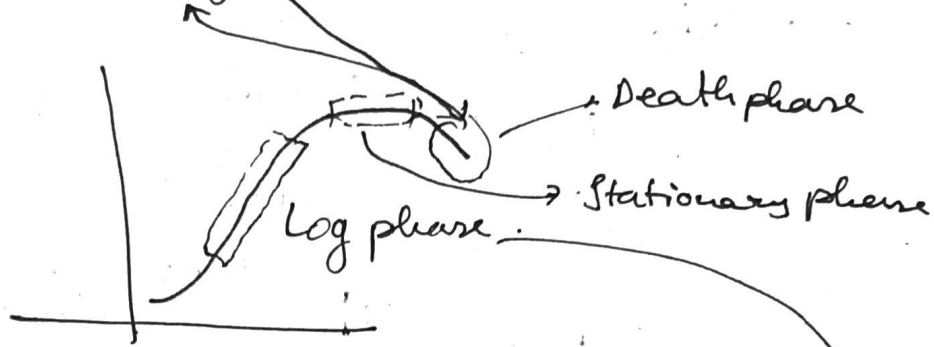
Why lag phase?

Why lag phase occurs —

→ In old culture, nutrients are almost gone, in new media they need to adjust to new media and acquire nutrients.

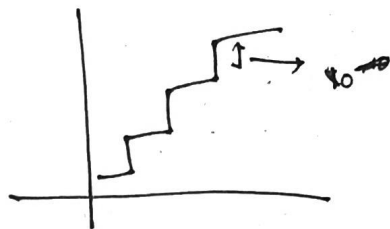
→ for gram staining, lag phase is suggested for taking bacteria. gram stain works due to peptidoglycan layer in cell wall.

In late stationary phase, the bacteria ~~lose~~ lose cell wall integrity due to toxicity.



In Lag phase it repairs itself with new nutrients.

We don't see the graph as — Binary division going on.



Because bacteria does not grow in synchronized manner

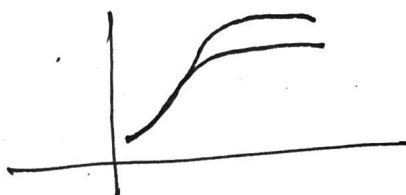
$$n = n_0 2^{t/g}$$

Binary fission

generation time (This is what we want)

Saturation scale height depends on spectrophotometer.

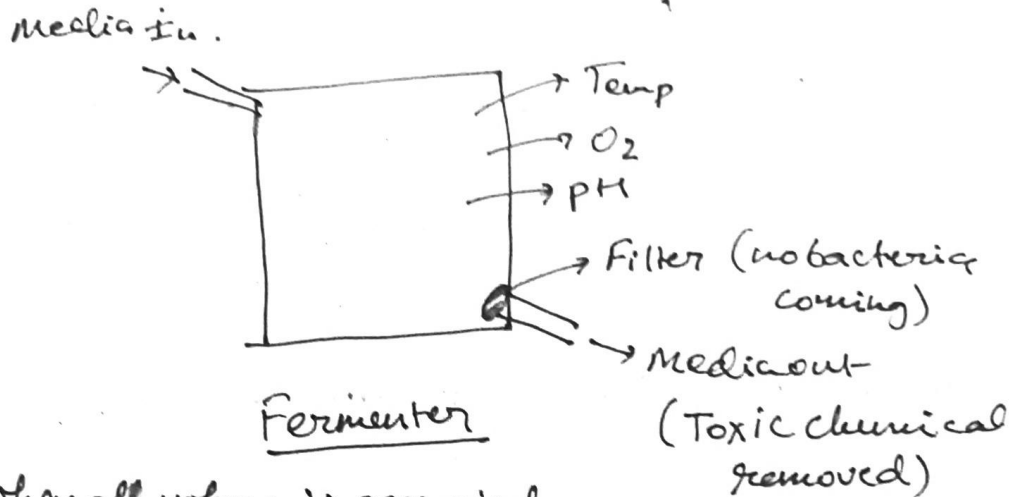
Some may be higher, some may be less.



⊗ In saturation, the rate of death = rate of growth.

How do we ~~reduce the~~ grow more bacteria in same volume & after stationary phase? If we are interested in some byproduct of bacteria we might need this.

We are doing batch culture — we need continuous ~~sets~~ culture for this. (Ex. Streptokinase for heart attack)



(*) But when all volume is occupied, we take it all out as toxicity is not an issue ~~by~~ but volume is.