

1/17 Max Delbrück

[Seminar at Columbia]
1/17 probably 1946

20m = 100x. Phage growth is the most rapid self-reproducing process known in life!!
k =

$$n_t = n_0 e^{kt}$$

T₃ and T₇ gran, smallest.

T₁, 5 like sperm; quite distinct. T₅ > T₁.

T₂, 4, 6 stubbier tail; straight.
related serologically.

Plating - plaque methods, etc. There is no method for determining count in vivo before lysis.

Free and viruses

and # of infected bacteria.

Plaque count is the sum of these. Free virus can be decanted by centrifugation; Bacteria by centrifugation.

Virus is released at the time of lysis - concl. shown.

The turbidity of a culture falls at the same time as the ~~log~~ free virus count ~~also~~ rises.

1. Multiple infection has no effect on latent period.

Host variation: 13-40 virus.

Temperature variation: oc host growth

Stability of Serovirus??

no effect of growth rate as changed by inhibitors.
inhibitors - esp. 7, so far
latent period uniform; burst size varies.

BS distribution does not agree & bacterial ^{length} ~~size~~ variations
(volume?).

Mycoplasma -

1. Intraspecific - mutual exclusion.
2. Intraspecific

Indicator strains - resistant to most seroviruses.
do. antisera. for studying populations.

Sp. antisera method does not inactivate intracellular virus.

By using mix of indicator strains, simultaneous infections can be detected.

Prevalence of infectious strains over another.
" persists in U-V interactions. Although it does not grow, still precludes other virus.

T1-T7 exclusions. Dependence.
to, call 2 pairs.

Exe.

1. Depressor effect. - Super

2. See Hershby.

T2-T4-T6, 2 modifications

Sex in
the phages.

Eg. T2: plaques morph. different.

T2A + T4B mutual exclusion.

Depressor effect.

1.
2.
3.

→ (T4 inf. → T4A + T4B)

1. Virus 1 makes cell unpermeable to others.

or 2. Excluded virus prevents effect on outside of cell.

This depression can be blocked by antiserum.

(Antisera of
antiserum not
proven on
genetic
basis!).

Bacteriophage: Antiserum. (Anticatalytic).
No inhibition of resistance by virus.

~~B~~ B/1. target small.

Sec. Demerol +
Pain

B \rightarrow B/1 [1,5]

B - B/1 \rightarrow B/1,5

B \rightarrow B/3 \rightarrow B/3,1

B - B/3 - B 3,1.

Sum.

Large -

B/1,5 not sens II'

B/1 is sens II

B/1 G.F. requirements (tryptophane + ...).

differs in N. ment.

req. ~~B/3~~ N.
amino

Therefore the two B/1 are different + independent.

B/1 \rightarrow B/1,5.

at same rate as $\phi \rightarrow$ B/1,5 mins. to su.

Lc-X + ~~Wild type~~ Y

1. Start on ~~complete~~ minimal.

2. ~~Isolate heterocaryons~~
Transfer to Lc.+X+Y.

3. Isolate heterocaryons by phat tips to minimal

4. If they grow, test for heterocaryosis.