THE QUADRANGLE CLUB
CHICAGO

K. D. Kiepenheuer + . . .
Natura. 1948 or 49

Planta 1951

Brauer

Observatorio
astrofisico
Catania
Sicily

Freiherr v. B.

312 chemostat of Fox B

$\tau = 6.7$ hrs N limited.
added anthranilic acid to tank to see if indol is poured out
anthranilic remains unchanged
does tryptophane inside tract
~~turn of conversion from anthranilic to indol? So it seems. But does anthranilic get in?~~

1.) add indol to B nitrogen lted does tryptophane or precursor pour out?

2.) add anthranilic (to a low nitrogen B/1t chemostat (at high τ) does precursor form (this chemostat is at high τ values tryptophane less)

3.) add indol (like in No 2)

321 and 321 B and C
low Phosphorus B/1t

321 at first at $\tau = 4.7$ hrs it poured out. —
When adding 1.1 mg/l to tank at 3.75 hr
it does not pour out Beck at

350 & 346

284. 100γ/l tryp.
2.3 mg/l arginine
with B/1t and arginineless strain D 84/6
to see if one strain steals growthfactor
from another.

platings with T_1 and T_6 (viable counts)
result: at fast flow rates (there $\tau = 2$ hrs
seemed to be a lower titer of B/1t ~~B/1t and T1~~
~~platings)~~ indicating that there
may be some stealing of tryptophane
(titer falls to 1/2 at $\tau = 2$ hrs)

291 Precursor in glucose medium
at $\tau = 4$ hrs 500γ/l trypt.
Beckmann at 350: 0.109, 280 .437
per unit 0.116/hr

292 double mutant; precursor exp.
500γ/l trypt 2.3 mg/l arginine
Beckm at 350: .330 [reverted?]
no conclusions

293 same purpose as 292 no conclusion

296 and 297 low ammonia + 500γ/l trypto-
phane, B/1t, precursor as function
of τ

Think it through!

296a confirmed (1 mg/ml tank) we added anthranillic to it (at τ = 3.4 hrs

~~[illegible]~~ it remained

unchanged, [It does not repress]

[this should be repeated at longer τ values and also indol should be tried to see if it helps] 20 mg/l anthranilic to tank had no effect either. — (to tank)

297a 1 mg/ml of indol was added to see if it represses, it does not

to 296 and 297 we ought to have added at the end excess trypto phane

305 experiment similar to 284 but this time B/a predominates:

307. does tryptophane prevent precursor when chemostat is nitrogen lltd

30 mg/l NH₄Cl + 2 mg/l tryptophane + 10 mg/l of alanine to repress precursor.

2 B/1t ?

τ = 4.3 hrs, Beck at 350: .245

shows signs of autolyses in Beckmann, does not pour out! —

308 same as 307 but no phenylalanine

τ = 4.8 hrs

317 similar result

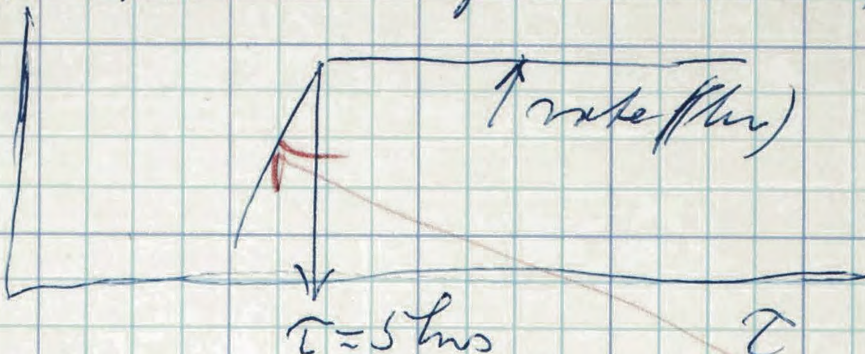
Bernie Davis strain 159-11

500γ/l tryptophane, τ = 3.25 hrs

it pours out something like our precursor

321 continued
added P

Bact. density Beckmann at 350 = 4 x 134
varied τ got curve for precursor



This ought to be repeated with two different absolute conc. of P. ~~fall~~ Question is fall in curve the same or ~~different~~ If fall is the same then the "growthrate is responsible" If fall is much steeper at higher P that means the pyrophosphate conc. is controlling the fall. —

321 B and C (about 525 γ/l Tryph)
precursor production ~~[illegible]~~ determined as function of τ (See Curves)
We dont understand why B which rises at ~~[illegible]~~ higher P does not reach these curves ~~[illegible]~~ unless we assume B has more P and less Tryptophane

321 C + indol does it pump out

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338 Serine factors
a.) add hypoxanthine
b.) change from τ = 2 hrs to τ 8 hrs
observe increase in back density

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2 exp planned

25° C planned to set up with
1.) τ = 9 hrs 500γ/l to see precursor
and at 37 2.) 500γ/l to see precursor
at τ = 3.7 if suddenly shifted
do bacteria fall

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change from small τ to large τ
observe

(210)

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set up 1 mg/l hypoxanthine. —
lag studies $e^{-\frac{t}{2hr} + \frac{t}{6hr}}$

$$= t \frac{6-2}{12}$$
$$\rho$$

washes out with τ = 3

Try P and Nitrogen the chemostat, add NH₄Cl suddenly
every 1/2 hour get growth rate ; measure

(b) add indol

321 B and C — To test this we added Tryptophane to B. Bacterial titer came up to same value as in C. Therefore both should have equal amount of P. — B does not pour out now at 8 hours τ does it pour out at 15.5 hours because tryptophane is destroyed by tryptophanase?

~~Increase in precursor and also increase in bacterial density~~

323, 324 sudden change of flow rate from short τ to long τ observe 1 mg/l trypt. ~~...~~ also τ about 2 hrs

B/it

324 τ = ~~2.03~~ hours at 350: .212 at 280: 0.637
supern .173 and 140 | $x_1 = 142$

τ changed by factor 4 and to τ = 8 hrs
after 1 hour sample pushed out
at 350 : .244
supernatant gives
at 280 = .252 at 250 : 0.171 | $x_1 = 226$

In one hour $82 + \frac{226 + 142}{8 \times 2}$ it pours out in toto

23
82
105 ~~...~~ normalized

pours out $105 \times \frac{145}{212} = .072$/hour normalized
(without x corr)

or $79 + \frac{173 + 252}{8 \times 2}$

0.72 /hour is really not enough for total outpouring should be rather 1.2 or 1.4.
What does this mean