Friday 10/10

- Wg16 with A_2 - that failed to grow on individual A_2's
  both added to resurrect great own streaked out EMBlue -

- 811 t (750t1821) λ
  ~~transduced~~
  8 papillae picked and streaked for stability check
  IS TRANSDUCTION PRODUCED BY TRANSINDUCED STRAIN λ STABLE? [illegible] 129

- 518 t (750t1821) λ as 811 above.

- 811 gal+ R-2 lysate prepared
  filtered
  sterility checked (0.9 ml) in broth - no growth

Sunday. 10/12

510 adsorption Expt.

plated on EMB lac-, all colonies lac- as expected

(1.) cell ~~input~~ stock assay = $\times 10^7$, — 67,74 = 7.1×10^8 cells/ml

(2.) phage stock assay = $\times 10^7$ — 531,453 = 4.9×10^9 phage part/ml

a 2+10ml broth del. of phage stock K-12 25λ

IMPUT RATIO PHAGE/BACTERIUM $\frac{49}{7.1} = 7/1$

(3.) phage stock galdnt/0.1ml = 177,176 = 1.77×10^3/ml - spontaneous

(4.) Spontaneous gal+/0.1ml cells plated = - 15

1.62×10^3 galdnt/ml λ susp.

gald/ml x del = original titer

$1.62 \times 10^3 \times 6 = 7.72 \times 10^3$/ml original stock

previous assay 125 = $6.91^+ \times 10^3$

higher titer here probably due to increased accuracy of higher del. of lysate

Galq -

Ratio gald $= \frac{9.72 \times 10^3}{4.9 \times 10^9} = 2/10^6 = 1/5 \times 10^5$ λ

adsorpt = 5 min. on bench, 10 min. in centrifuge

2ml cell susp + 2ml del. λ

1st

(5) Supernat. 1st adsorption λ titer = $\times 10^7$ — 72,126 = 9.9×10^8

added = $\frac{\text{stock titer}}{2} = \frac{4.9 \times 10^9}{2} = 2.5 \times 10^9 = 25 \times 10^8$

unadsorbed = 9.9×10^8 = 39%

λ taken up/cell $= \frac{25 \times 10^8 - 9.9 \times 10^8}{3.6 \times 10^8} = \boxed{4.1 \lambda/\text{cell}}$

(6) sediment 1st adsorption - no galductions

0.1ml plated = 124,138 = 131

galduced = 131 - bkgrd. = 131 - 15 = 116

expected from above stock assay = 81 ↑↓ compare ← indicates more than 100% adsorpt

(7) supernat 1st adsorpt.

0.1 ml plated = 33,33 = 33

gald. present = total pop. - sp = 33 - 15 = 17

(8) supernat 2nd adsorpt λ titer = $\times 10^7$ — 144,103 = 1.24×10^9

put in = 2.5×10^9
unadsorp = 1.2×10^9 = 50%

adsorbed/cell = $\frac{25-12}{3.6} = \frac{13}{3.6} = \boxed{3.6 \lambda/\text{cell}}$

total = 7.7λ/cell

1st adsorption - amount of killing by λ

cell assay = $\times 10^7$ = 139,132 = 1.36×10^9 cells/ml which appears impossible

continued

Sunday 10/12

(9) 2nd adsorption ~~Sed~~ sup. no of gold.

0.1 ml plated = 169 149 = 159

gold included = total - sp = 159 - 15 = 145

expected max if 100% adsorpt.
on basis initial assay = $\frac{16^2}{2} + \frac{16^2}{2} = 162$

expected on basis of adsorpt. of 1st & 2nd = 81 (.61) + 81 (0.56) = c. 90

(10) 2nd adsorption supernat. no of gold.

0.1 ml = 62, 64 = 63 - 15 = 48

gold. added /ml = 81 81

gold. supernat = 63 48 } total 92. ↑↓ comp.

gold sed = ~~145~~ - 116 = 29

(11) 3rd adsorpt. ↓ titer supernat. = $\times 10^7$ = 226, 198 = 2.1×10^9

input = 2.5×10^9 /ml

adsorbed = 2.1×10^9 /ml = 84%

adsorbed $\frac{0.4 \times 10^9}{3.6 \times 10^8}$ = 1.1 /cell

λ/cell

↑

This value may be off due to the time elapse between the beginning of this expt and this assay - Time is probably in excess of 1 hr and therefore possibly longer than latent period.

total = 7.7
1.1
8.8 λ /ml

(12) 3rd adsorpt. sed. no of gold.

0.1 ml = 179, 214 = 197

increase over 2nd 197 - 145 = 52.

(13) 3rd adsorpt. sup. no of gold.

0.1 ml = 53, 65

gold = total - sp = 59 - 15 = 44

total gold = 52
44
96

expted (81)

81
44
37

Thursday 10/16/52

- 518 Second absorption Exp. -

518 blkgnd was ~ orig. plaque assay 41

- Initial phage stock titer - a 1-2 dil. of parent 25'
  10^8 dil → 80,74 = 7.7×10^9 λ/ml (parent assay 1.6×10^{10})
- Initial cell assay - stock susp. from overnight cult. resusp. in saline
  10^7 dil → 115,108 = 1.1×10^9 cells/ml

Expt. performed by adding 2ml volumes of λ + cells together 5 min at rm temp. Centr. 10 min. Decant sup, resusp. cells in 2ml volume - Remove samples, i.e., 0.2, 0.1 ml - making vol. either 1.8 or 1.9 ml - For next absorpt add 1.8 or 1.9 ml of λ sup., etc.

- Initial phage stock gold titer
  0.1 ml → 457 pfu - 41 sp = 416

1st absorpt.

Supernat λ titer -
10^7 dil → 164,205 = 186×10^7
% not absorbed = $\frac{3.9 \times 10^9}{7.7 \times 10^9}$ = 48% absorbed = 52%

Cell survival (of 2nd resuspension)
10^7 dil 134,89 = 112×10^7 = 1.1×10^9 cells = no killing

Supernat gold.
0.1 ml = 197,166 = 182 − 41 = 141 % gold not absorbed: $\frac{141 \times 2}{416} = \frac{282}{416}$ = 67.5%

Sed. gold.
0.1 ml = 268,317 = 293 − 41 = 252

Vol. at end = 4.0 ml − 0.1 (sup) − 0.1 (sup of gold) − 0.1 (sed gold) = 3.7

2nd absorpt

Supernat λ titer.
10^7 dil → 232,329 = 2.8×10^9
% not abs. = $\frac{5.6 \times 10^9}{7.7 \times 10^9}$ = 73 = absorbed = 27%

Supernat gold.
0.1 ml = 309,281 = 295 − 41 = 254

Sed gold.
$\frac{0.1}{5}$ = 107,79 = 93 − 41 = 52

Vol. at end: 3.7 − 0.1 − 0.1 = 3.5 ml

3rd absorpt

Supernat λ titer
10^7 dil → 215,342 = 2.79×10^9
% not abs. $\frac{5.6 \times 10^9}{7.7 \times 10^9}$ = 73 = absorbed = 27%

Supernat gold.
0.1 ml = 368,345 = 347 − 41 = 306

Sed. gold
$\frac{0.1}{5}$ = 129,85 = 107 − 41 = 66 × 5 = 330

4th absorpt

Supernat λ titer
10^7 dil → 253,293 = 2.7×10^9
% not absorbed = $\frac{5.4 \times 10^9}{7.7 \times 10^9}$ = 70 absorbed = 30%

Supernat gold
0.1 = 283,246 = 242

Sed. gold
$\frac{0.1}{5}$ = 43.49

Thursday 10/16/52

5th adsorpt

Supernat. titer

10^7 dil → 552, 527 = 5.4×10^9 = ~~4.2×10^8~~

% not adsorbed = $\frac{1.1 \times 10^{10}}{7.7 \times 10^9}$ = impossible - either no adsorpt or lysis obscuring effect.

Supernat gold.

Sed. gold.

End pt. assay

10^7 dil → 44, 51 = 4.8×10^8

- 1924 Examination for presence of λ

14 cross streaks of overnight Pen culture streaked against 1485

9 showed presence of phage - weak.

- 811-gal + -2 λ prop.

10^8 dil = 29, 23, = 2.6×10^9 λ/ml

- 1924 [illegible]

[illegible]	[illegible]	No [illegible]
1	[illegible]	[illegible]
2	[illegible] λ	[illegible]
3	"	90

← 1.6×10^{11} λ/ml

- 513 [illegible]

[illegible]	[illegible]	No [illegible]
[illegible]	[illegible]	41
[illegible]	811-gal + #1	27
[illegible]	811 gal + #2	[illegible]
[illegible]	811 λ	17
5	[illegible] λ = λ*	29

booked

- 2000

[illegible]

Friday 1/11/[illegible]

- 515 (Lgp.sta.o. [illegible]) X 12 - [illegible]
  [illegible] gel +
  [illegible] [illegible] - [illegible] / [illegible] - [illegible]

- 519 + ([illegible]) [illegible]
  [illegible] s/g mixed
  [illegible] s/g [illegible]

- 811 ([illegible])
  [illegible] s/g mixed
  [illegible] s/g mixed

- W1655 X W702 - Lgp[5] gel - transmissible gel
  tested on mixed - is mixed +

- Research on Sycogenicity of 1924
  - 12 cross streaks on 1485 - no evidence of phage
    on gal, gal -
    on EMB lac, lac -

- 1924.
- Examination of 1924 for lysogenicity of transinduced cells. -

Isol. #	Streaking # ①	②	③	Streaked against 1485
1	m	m	m ⊗	non-lyp.
2	m	+	+	" "
3	+	+	+	" "
4	m	+	+	"
5	⊗ m	m	m ⊗	one plaque
6	⊗ m	+	+	non lyp.
7	m	+	+	"
8	m	+	+	"
9	+	+	+	"
10	m	+	+	"
11	+	+	+	"
12	m	M	m	"
13	+	+	+	"
14	+	+	+	"
15	+	+	m	"

Isol. #	①	②	③	/1485
16	m	+	+	non lyp.
17	m	+	+	"
18	+	+	+	"
19	m	+	+	"
20	m	m	+ ?	"
21	+	+	+	"
22	+	+	+	"
23	m	+	+	"
24	m	+	+	"
25	m	m	⊗ m	"
26	m	+	+ ?	"
27	m	m	m	"
28	m	+	m	"
29	m	m	m	"
30	m	m	m	"

Isol. #	①	②	③	/1485
31	m	+	+	non lyp.
32	m	m	m	"
33	+	+	+	"
34	m	+	+	"
35	+	+	+	-
36	+	+	+	"

μ = mixed
+ = gel
- = -
⊗ = mosaic

Sunday Oct. 19

– 1821 – Reexamination of xylose transduction possibilities

EMB xyl	Addition	no pay 2 days
1	—	174+
2	0.1K+2λ (25')	229+

} 8 picked and streaked – 16 picked and streaked –

Examination for instability of "xyl duced" –

– Plan to galduce 1821 and examine unstable galt for xyl stability –

– 1924H12-12 see p. 129

– 2050 galg – mutants – streaked on EMB lac for replication on minimal + supplements

– out of 12 suspected auxotrophs – 1. prototroph 1. A_2 1. $(A_1 A_2 A_3)$ ← really a proto? failed on A_5 } not tested A_4 – presumably amounted A_4 are

– 518 Check on bkground on EMB gal. cells from overnight culture – unwashed

EMB gal	Addition	no pay 2 days
1	undil. susp	53
2	1-10 susp	37
3	1-100 susp	43

(posted)

811-galt – Crosses – X 1295 – Results partly unsat. due to large no. of mucoid col. – many mucoid apparently (–)

811-galt-2 – (no galduction on 811)

EMB gal	+	susp –	checked –
1	33	3	
2	39	2	
3	29	0	
4	46	0	
5	34	0	
6	37	0	
7	48	1	
8	23	0	
	289	6	6/6 gal slow

811galt-1

1	56	1	
2	71	2	
3	70	0	
4	62	0	
5	67	0	
6	64	3	
7	66	2	
8	78	1	
9	84	2	
10	66	1	
	[illegible]	[illegible]	[illegible]

- Wednesday -

1821 - Xylduction? —

EMBxyl	Addition	no. pap 3 days (papillae appear arrested in growth - failed to develop further after 2 days)
1	—	7
2	0.1 K12 λ 25'	> 85

16 papillae in λ plate picked and streaked xyl - (all xyl-) 10/23 check to see if gal + -

10/24 all gal - ?

- 1924tK-12 #25 - this streaking = #4 from galduction is mixed - no mosaics
Attempt to establish a stable + from unstable +.
12 well isolated + col. picked and streaked in EMB gal.

Restreak 1

1	mixed
2	"
3	"
4	"
5	"
6	"
7	"
8	"
9	"
10	"
11	"
12	pure + → picked

+ single colonies to heat →

- 1924tK-12 - One plague type / 1485 - see 129
picked and streaked out EMB gal -

- 811 gal + reversions checked for their papillation behavior - in EMB lac -

		Indication	
1307	5-10 pap/colony	—	
811	no. papillae	—	
811g+ -1	<1 pap/colony	mimic	does not galduce
2	<1 pap/colony	"	" " "
3	<1 pap/colony	"	
4	c. 5 pap/colony	true reversion	
5	5-10 pap/colony	" "	galduces! 811, 518
6	<1 pap/colony	mimic	
7	c. 1 pap/colony	"	
8	5-10 pap/colony	true reversion	galduces! 811, 518
9	c. 1 pap/colony	mimic	
10	<1 pap/colony	mimic	

Thursday 10/23/52

1924tK-12 #25 - ~~[illegible]~~ from initial streaking, for purpose of isolating stable + 4 streaking from pg.

12 additional colonies streaked on EMB gal -

all mixed - given to EML -
many mosaics

- Friday 10/24/52

1924tK-12 - the one plague type #5 of testing

streaked out EMB gal 10/23 -

~~a [illegible] + streaked out again. examine individual colonies for lysogenicity 14 (-) retested all nonlysogenic.~~

1924tK-12 - #12 of pg 131 for stability isolation
#25 colony
papillae

1st streaking from end of purification - pure
made 10/23 2nd streaking .. .. .. c. 150 colonies - all pure
" 10/24 3rd streaking .. .. .. c. 500 colonies - all pure
" 10/25 4th streaking .. .. .. c. 500 colonies - 1 (-) colony - contam.?

SEE PG 133

picked and examined - see subsequent pgs.

Saturday 10/25/42

1924tK-12 (above) 1 plague type - transferred to agar slant (+ #1)
10 + and 10 (-) colonies picked from streaking colony and tested against 1405

+ colony	reaction	- colony	reaction
1	non-lys	1	single plague? → reexamined pg 134
2	"	2	"
3	"	3	"
4	"	4	"
5	"	5	"
6	"	6	"
7	"	7	"
8	"	8	"
9	"	9	"
10	"	10	"

Sunday 10/26

- 811 galt #5 lysate (→ tube) - (this is papillating strain on lac) - (0.5 ml of this lysate in Pan = sterile)

10^8 dil. = 44, 59 = 5.2×10^9 λ/ml

in 518 gives about 600 pfg/0.1 ml = 6×10^3/ml $\frac{6 \times 10^3}{5.2 \times 10^9} = 1/10^{-6}$

- 518 - Galductions

DNA ase no effect

galq reversion c̄ activity on galq⁻

EMB gal	Addition	no pfg 2 days
1	none	(30)
~~1~~	~~[illegible]~~	
2	0.1 K-12 λ (25') untreated *	~~[illegible]~~ 960
3	0.1 K-12 λ (25') treated **	998
4	0.1 811 galt #5 λ	1/4 = 883

some 0 plaques here?

← examine for stability - see pg 134

* untreated = 0.1 ml birth added to 0.5 ml lysate - incubated at room temp. 15 min
** treated = 0.1 ml DNA ase added to 0.5 ml " - " " " " "
"(1.1 γ DNA ase)

See also p. ~~[illegible]~~ 135
DNA ase treated greatly decreased in viscosity

booked

~ 1924 tK-12 #25 papillae col #12 - stable galt

overnight culture pan diluted plated EMB gal -

EMBg Plate	no colonies	no. gal -
1	565	0
2	440	0
3	774	0
4	622	0
5	609	0
6	559	0
7	598	0
8	523	0
9	560	0
10	573	0
	5821	0

To here - history

3 streaks mixed galt, gal-
4 streaks galt
1 plating of 5821 colonies no gal-

$\frac{2.1\times10^{3}}{5.2\times10^{9}} \cdot 0.5\times10^{-6}$

Tuesday 10/28

1821 gal- xyl-dilutions

EMB gal	Addition	No. papillae after 2 days
1	none	0
2	0.1 K-12λ (25')	4
3	0.1K-12λ (25')	7
4.	0.1K-12λ (25')	8

cultures for typ

- EMB xyl none
  - 1 ↙ 4
  - 2 ↙ 0
  - 3 ↙ 7 } faint background of many minute papillae c.10⁴

- 518t 811 gal + #5 ↗ pg 135

8 papillae picked and streaked - 4 papillae in the transduced of the type (1), colonies, red purple pigmented - papillae of same size (This is not unusual, reason for diff. not known) 4 red purple } streaked on EMB gal.
4 colonies (2)

probably not correct

1st	streaking -	all mixed +, -	no distinction as to above
2nd	" -	1/8 mixed +, -	mentioned above
3rd	"	1/8 mixed +, -	<- others giving off something intermediate

glucose fixed - this transduced site appears to be stable more quickly than 518 cells transduced by K-12 λ — this also appears to be the case for this lysate and 811 gal+ as below

- 1924 EC-12 One plaque type
  - recommunication of synicity of one plaque gal- type (p.135)
  - 4 gal- colonies from streaking examined - all non-synaict

- 8-12λ (X) 0.5 ml + 10 ml Ped Tested for sterility - sterile

- Wednesday 10/29/52
- 811 - gal- dilutions

EMB	Addition	No. pap. after 2 days
1	none	39
2	0.1 K-12λ (25')	196
3	0.1 811 gal+ #5 1 <- 1st lysate (viscous)	204

$\frac{1.57\times10^{3}}{1.6\times10^{10}} = \frac{1}{1.0\times10^{7}}$

<- stability of 12 of these examined

1st	streaking	7/11 mixed +, -
2nd	streaking	1/11 mixed +, -
3rd	streaking	1/11 mixed +, -

apparently → the activation is as with 518 t 811 gal + #5 above

This is probably. The case with 811 gal+ #8 on (p. 135a)

Thursday 10/30

1924tK-12S

Cross of – X Y-10

1. purity of 1924tK-12 culture – cult. plated on EMB gal

EMB gal	no. of + col	no. of (-) col.
1	275	0
2	249	0
3	268	0
	792	

this are also additive c̄ data of p. 138 – makes 5821 + 792 = 6613

2. Cross.

EMB gal	no. (+)	no. (-)
1	175 (1 mosaic)	0
2	116	1
3	152	0
4	141	0
5	165	
	749	1

The 1 (-) and (1) mosaic colonies streaked out on EMB gal – both gave gal + and gal [illegible]

λ titrations.

grown on 1485 dil 10^6 = 0, 0, titer < 10^6

K-12 λ (X) in 240 seconds dil 10^6 = 172, 262 = 217 = 2.2×10^9 ← previous assay says titer here originally was 2.8×10^9. Better recheck to observe if this post irradiation assay is correct.

DNA ase effect on plaque λ

811 gal + #5 λ

untreated dil 10^8 = 37, 85 = 6.1×10^9 (previous 5.2×10^9 p. 133)

DNA ase treated dil 10^8 = 52, 68 = 6.0×10^9

indicates DNA ase has little effect if any on either galduction or plaque formation

efficacy of 811 gal + #5 λ = (for 518) $\frac{8.8 \times 10^3 \text{ gal/ml}}{6.1 \times 10^9 \lambda/\text{ml}}$ = c. 1.3×10^{-6} = c. $1/7 \times 10^{-5}$

(for 811) $\frac{2.0 \times 10^3}{6.1 \times 10^9}$ = 0.3×10^{-6} = $1/3.3 \times 10^{-6}$

811 galductions

811 gal + #8 galduces!

sterility of these (0.5) ascertained

EMB gal	Addition		Papillae after 2 day (lysate 1, etc.)
1.	none		25
2.	0.1 ml 811 gal + #5$_1$	untreated c̄ DNA ase	201
3.	0.1 ml 811 gal + #5$_1$	DNA ase treated	296
4.	0.1 ml 811 gal + #5$_2$	—	289 + ← plate contaminated?
5.	0.1 ml 811 gal + #8$_1$	—	291 ← [illegible] p. 135a
6.	0.1 ml K-12 (X) in 240		142

518 galductions (control omitted)

EMB	Addition	Papillae after 2 days
1	0.1 ml K-12 (X) in 240 λ	540
2	0.1 (1/10) "	15 (dry plate) ← 10 examined / all λ^R all give faint reast / 1485
3	0.1 (1/50) "	9

(boxed)

Thursday 10/30

- 1402 galdrection -

EMB gal	Addition	no pop after 2 days
1	none	5
2	0.1 ml K-12 (25') λ	43

} appears as a dilution in the absolute sense of the effect. Similar to results c̄ 1821 p. 134. Is this culture partially tpi^R -

811 gal + #1 X Y-10
- Cross for the purpose of determ. 811 gal + #1 suppressor or no mutation

EMB gal	no. gal (+)	no gal (-)
1	333	0
(cumulative count) → 2	462	4
3	541	2
4	671	2
5	781	1
	781	9 ← retest on EMB gal - [illegible]

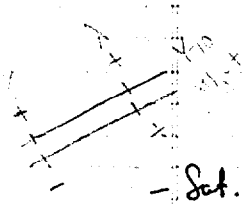
Summary table	(+)	(-)
X1 p. 130 -	696	[illegible]
X2 p. 135a -	71[illegible]	0
	1786	[illegible]

- 811 gal + #2 X Y-10
- Cross for purpose of determ. if this 811 culture is suppressor mut. or no.

EMS gal	no gal (+)	no gal -
1	157	0
cumulative count 2	326	2
3	456	1
4	603	0
5	866	2
	866	5

} [illegible] gal slow -

Summary table	+	-
X1 p. 122	72	0
X2 p. 123	680	[illegible]
X3 p. 130	275	0
X4 p. 135a	871	0
	1879	0



- Sat. 11/1

811 t 811 g + #8 stability ✓
1st streaking - 8/8 mixed +, -
2nd streaking - 0/8 mixed +, - (all +)
3rd streaking - 0/8 mixed +, - (all +)

- 2102 lysate for EML -

mad. 35' sec - incubated 2+ hours - centrifuged

dil 10^7 $\xrightarrow{0.1}$ against 2096 = no plaques - galdrection on 518 according to EML?

- 1673 mad for gal - on EMB gal

3 good gal minus obtained - test for galdrection

1673 gal - #1 #2 #3

- 1692 mad. for gal - - unsuccessful attempt

Sunday 11/2

- 1655 X 1177 to obtain xyl - for xyl duction attempt
  old suspensions
  used - small number of prototrophs
  c. 6 mult from c 100 prototrophs.
  picked and streaked on EMB xyl. — 4/6 xyl minus
  pick and see if λ^s -
  streak on other med. —

- 1924tK-12 #12 (unstable) X 1436 - to see if λ^+ obtained gal λ^R + + — but dom. to λ^+
  cross should show λ^+ if this is so since λ^- recessive to λ^+. Examine
  unstable gal+ prototrophs to see λ^+ ness since gal λ + + should go to either
  1924tK-12 parent culture - Analysis - 8 streaks of washed susp. made / 1485 - no evidence of λ

gal plate	#(+)	#(-)
1	1/4 = 200 (800)	1/4 = 11 (44)
2	1/4 = 161 (644)	1/4 = 9 (36)
3	1/4 = 173 (692)	1/4 = 8 (32)
	2136	112

} purity of 1924tK-12 parent

Cross Plate	#(+)	#(-)
1	42	383
2	38	354
3	—	—
4	..	..
5	68	365
	148	1102

about the same as first two but difficult to count due to agar sed background.

28+ picked and streaked against 1485 - all non lysogenic

Thursday 11/6
- 1673 gal - galductions

	EMB gal	Addition	No pop. after 2 days
#1 (no 1 and 2 gald. plates confused)	1	none	7
	2	0.1 ml K-12 λ (25')	1/8 = 195 = 1560
#2	1	none	11
	2	0.1 ml K-12 λ (25')	1/8 = 163 = 1304
#3	1	none	19
	2	0.1 ml K-12 λ (25')	1/8 = 161 = 1288

10/6 Thursday

– 1436. galduction to obtain unstable + which is λ^+ gal^{+u} S^R to cross with 518 to observe if lysogenicity of galduced is due to dominance of λ^+ in transduced fragment → examine to see if unstable is S^R – possibility of transducing S^s which is dominant

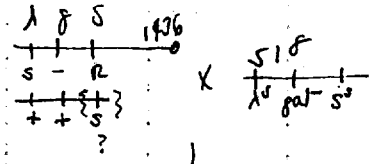
λ g S 1436
S – R
+ + {+ S}
?

X 518
λ^s gal$^-$ S^s

what kind of prototrophs?

gal^{+u} $\lambda^?$ $S^?$
gal$^-$ $\lambda^?$ $S^?$

didn't work
rel x assume whole problem



1. galduction of 1436

EMB gal	Addition	Papillae after 2 days
1	none	34
2	0.1 ml K+2λ (25')	1/8 = 156 = 1248

(1) ← 1st Pure streak 7/8 gal – ! what? SEE 112

try again (2) 1st Pure streak 7/8 gal +

try again (3) 1st pure streak 15/18 gal –

of this lot 9 streaked against 1485 all lysogenic

Pop #	Streak 1	Streak 2
1	mixed	pure +
2	mixed	"
3	mixed	"
4	gal –	—
5	mixed	pure +
6	mixed	"
7	mixed	"
8	mixed	"

2070 = 1673 gal – –1. Stability check –

7 sp pop galduced pop picked

Spontan	1st Streak	2nd Streak	3rd Streak
1	mix	pure +	pure +
2	pure +	"	"
3	pure +	"	"
4	mixed	"	"
5	pure +	"	"
6	pure +	"	"
7	pure +	"	"

2070 =

Galduced	1st Streak	2nd Streak	
1	mix	mix ⊗	mix ⊗
2	mix ⊗	mix ⊗⊗⊗	" ⊗
3	mix	mix ⊗	" ⊗
4	mix ⊗⊗⊗	mix ⊗	"
5	mix ⊗⊗⊗	mix ⊗	"
6	mix	pure +	pure + (?)
7	mix ⊗⊗⊗	pure +	" +
~~8~~	~~mix~~	~~pure +~~	~~" +~~

7/8

1673 gal – –2

1	mix	pure +	pure +
2	mix	mix	"
3	pure +	pure +	"
4	mix	"	"
5	mix	"	"
6	pure +	"	"
7	mix	"	"
8	mix	"	"

1	mix	mix ⊗	pure +
2	pure +	mix ⊗	pure +
3	mix	mix (?)	pure +
4	mix	mix	mix ⊗
5	pure +	pure +	pure +
6	pure +	mix ⊗	pure +
7	mix	pure +	pure +
8	mix	mix ⊗	mix ⊗

1673 gal – –3

1	mix	pure +	pure +
2	mix	"	pure –
3	mix	"	pure +
4	mix	"	"
5	mix	"	"
6	mix	"	"
7	mix	"	"
8	mix	"	"

1	mix	pure +	mix ⊗
2	mix ⊗	pure +	mix ⊗
3	mix	pure +	pure +
4	mix ⊗	mix	mix ⊗
5	pure +	pure +	pure + (?)
6	mix	pure +	mix ⊗
7	mix	pure +	pure +
8	mix ⊗	mixed ⊗	" +

7/8

Sunday-Monday 18/9/18/10

- ~~[illegible]~~

- 1177X 1655 xyl- #1

Attempted xyl duction of 1177 xyl-

EMB xyl	Addition	No pap 2 days
1	none	0
2	0.1 ml K12λ (25')	0
#2		
1	none	0
2	0.1 ml K12λ (25')	0
#3		
1	"	0
2	"	0

811 transduction c̄ 750 λ

EMB gal	Addition	No pap. 2 days
1	none	45
2	0.1 ml K12λ (25')	55

small increase - signif.? pick a few - look for mutability

slightly larger [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] gal5 [illegible] gal4 [illegible]

518 transduction c̄ 750

EMB gal	Addition	No pap 2 d
1	none 750 λ	45
2	0.1 ml K12λ (25')	40

} what to do?

[illegible] gal1 = gal4 ?

518 Lp2R = W1412

518 Lp2R not galactose

EMB gal	Addition	# pap. 2d
1	none	33
2	0.1 ml K12λ (25')	35

Sunday 11/16

1673 gal- #2 X Y-10 - as usual - no control -

EMB gal	No +	No -
1	324	12
2	166	7
3	261	10
	751	29

(-) slightly purple - some (-) mosaic's

← 26 picked EMB gal, 22 (-) streaked /1485, /λ SEE BELOW. - 7/22 Sensitive

← 30 picked EMB gal - streaked against /1485, /λ 30/30 lysogenic on 1485

1673 gal #3 X Y-10 as above

EMB gal		
1	174	16
2	186	13
3	418	20

(-) slightly purple - some (-) mosaic's

518 gal dried c̄ 892 λ Gal3- mixture on Gal4- λs

518t892

EMB gal	Addition	No rep. 2 days
1	none	41
2	0.1 892 λ	247

6 picked, streaked EMB gal

	stk 1	stk 2	stk 3
1	mix	mix	mix
2	pure + (?)	pure +	—
3	pure +	pure +	—
4	pure +	pure +	—
5	pure +	pure +	—
6	mix	mix	mix

STOCK 518t892-1

STOCK 518t892-2

Booked

811 gal dried c̄ 892 λ mixture Gal3- on Gal4- λt

811t892

1	none	39
2	0.1 892 λ	85

$\frac{4.6 \times 10^2}{3.9 \times 10^9} = \frac{1}{8.5 \times 10^6}$

6 picked pure, streaked EMB gal

	stk 1	stk 2	stk 3
1	mix	pure +	
2	"	mix	mix
3	"	mix	mix
4	"	mix	mix
5	"	pure +	—
6	"	pure +	—

STOCKS
811t892-1
811t892-2
811t892-3

Tuesday 11/18

1673 gal- #2 X Y-10 above gal- prototrophs tested -

			/1485	/λ				/1485	/λ
- Lp+	1	O	lys.	resist.	- Lp+	12	O	lys	resist
- Lp+	2	O	"	"	- Lp+	13	O	"	"
- Lps	3	O	non lys	sensitive	- Lp+	14	O	"	"
- Lp+	4	●	lysogenic	sensitive	- Lps	15	●	Splaque	~~resist~~ sens.
- Lp+	5	●	lysogenic	sensitive	- Lp+	16	O	lys	resist
- Lps	6	O	non lys	~~resist~~ sens.	- Lp+	17	O	"	"
- Lp+	7	O	lys	resist	- Lp+	18	O	lys	resist
- Lps	8	●	non lys	sens	- Lp+	19	O	lys	resist
- Lp+	9	O	lys	resist.	- Lps	20	O	~~lys~~ non lys	sensitive
- Lp+	10	O	lys	resist	- Lps	21	O	~~lys~~ non lys.	~~resist~~ sensitive
- Lps	11	●	single plaque	sensitive	- Lp+	22	O	lys	resist

replica to D(s) see if Lp+ are prototrophs

gal - Lp+ 15
gal - Lps 7

all prototrophs

Stocks made 518tg02-1, -2

1.	mixed	mixed	mixed
2.	"	"	"
3.	"	"	"
4.	"	"	"
5.	"	"	"
6.	"	mixed	pure+
7.	"	pure+	pure+
8.	"	mixed	mixed

$\frac{4^- 2^+ \lambda^s}{4^+ 2^- \lambda^+}$

Pg.	1st streak	2nd streak	3rd streak
1.	mixed	mixed	mixed
2.	"	"	"
3.	"	"	"
4.	"	"	"
5.	"	"	"
6.	"	"	"
7.	"	"	"
8.	"	"	"

Wednesday - 11/19

- 518 transduction by 902λ - obtain stocks

EMB gal	addition	no pap. 2 days
1	none	29
2	0.1 902λ	1/4 = 288 1152

booked

- 811 transduction by 902λ

$\frac{4^- 2^+ \lambda^+}{4^+ 2^- \lambda^+}$

EMB gal	addition	no. pap 2 days
1	none	44
2	0.1 902λ	147

$\frac{1.03 \times 10^3}{4.9 \times 10^{10}} = \frac{1}{4.9 \times 10^6}$

- 1436 (purified) Recheck on gal- streaking - Gal duction

EMB gal	addition	no. pap 2 days
1	none	6
2	0.1 K-12 λ (25')	2/4 = 294 1176

← sixteen (16) picked and streaked - all gal-, all non-prototrophic

Thursday 11/20

- 518tK-12 X Y-10 - for the purpose of uncovering (gal Lp^s)?

	EMB gal	no +	no -	no. mosaic
518tK-12 purity ✓	1	384	72	8
	2	406	60	9

EMS gal			
1	184	2	—
2	172	3	—

4 examined all λ^R all lysogenic on 1485

Looked

- 811tK-12 X 1673 - for the purpose of uncovering (gal- Lp^+)
X 1678

	EMB gal	no(+)	no(-)	no mosaic)
811tK-12 purity ✓	1	551	43	8
	2	633	37	4

X1673 EMS gal	1	73	5	—
	2	91	2	—

7 examined - all λ^R all lysogenic on 1485

X1678 EMS gal	1	101 contam.	2	
	✓	56	4	

5 examined all λ^R all lysogenic on 1485

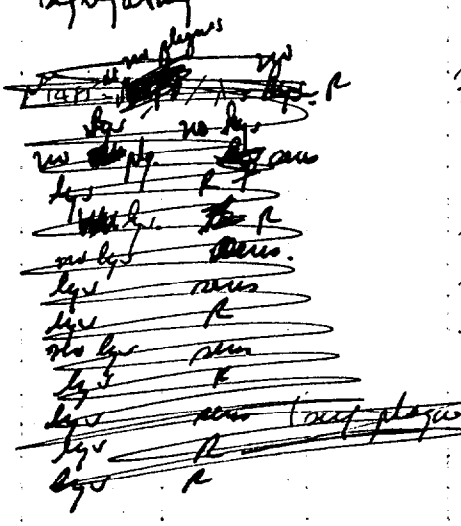
Thursday 11/20

Friday 11/21

- 1673-gal- -3 X Y-10 - pg 139 - Lp^R segregating

Check on λ-state of prototrophs

gal-	W1485	λ			1485	λ
1	lys	R	14	~~[illegible] no plaques / λ lys R~~	no plaque	R?
2	lys	R	15	~~lys no lys~~	lys	R
3	lys	R	16	~~no plaq. lys sens~~	no lys	sens
4	lys	R	17	~~lys R~~	lys	R
5	lys	R	18	~~[illegible] lys R~~	lys	sens?
6	lys	R	19	~~no lys sens.~~	lys	R
7	lys	R	20	~~lys sens~~	lys	sens?
8	lys	R	21	~~lys R~~	lys	R
9	lys	R	22	~~no lys sens~~	no lys	sens
10	lys	R	23	~~lys R~~	lys	sens self plaque
11	lys (self plaque)	R	24	~~lys sens (self plaque)~~	lys	R
12	lys (self plaque)	S	25	~~lys R~~	lys	R
13	lys	R	26	~~lys R~~	lys	R
					10 (-)	



gal+ 22 picked all lys on 1485, all λ resist

Salmonella for J.L.

- lysates attempted in 914, 915, 922

lysates in 914-1 some suggestion of lysis?
913 — discarded

lysates in 914-2
915
922

Results

914-1 / 913 → cross streaks on 913 - ① - activity in undiluted
914-2 ② " " undiluted
known supplied (J.L.) " " "

915 / 912 → cross streaks on 912 ① (915) - activity undil., some act. in loopful of 10^6 dil.?
922 ② (922) - activity in undil., none in 10^6 -

(142) 152/16 = 9 17/2 / 2432

Tuesday 11/26

– New λ preparation.

518 (examination of allogenic ~~[illegible]~~ gal+ as donors of gal+) –

EMB gal	Addition	No papillae 2 days
1.	none	28
2.	0.1 518tC8g2λ-1	3
3.	0.1 811tC8g2λ-1	0
4.	0.1 K-12λ (11/23)	1/16 = 152 = 2432

} recently observed by numerous investigators

borrowed

– Other gal⁻ mutations – examination for transduction –

stock mode of plaques

	EMB gal	Addition	No papillae 2 days
566 ← (tp2 1)	1	none	9
	2	0.1 K-12λ (Y)	9
583	1	none	6
	2	0.1 K-12λ (Y)	340

picked	streaking 1st	streaking 2nd	streaking 3rd
1.	mixed	mixed	-
2.	"	"	"
3.	"	"	"
4.	"	"	"
5.	"	"	"
6.	"	"	"
7.	"	"	"
8.	"	"	"

– 2050 gal3 – Examination of allogenic transduction (lysates) for activity on gal3

EMB gal	Addition	No papillae 2 days	
1.	none	29	
2.	0.1 518tC8g2-1λ	solid smear	(3 papillae?) ← thin lysate not sterile
3.	0.1 811tC8g2-1λ	solid smear	(3 papillae?) thin lysate not sterile
4.	0.1 811λ	450	

2050tC811 stock →

$\frac{1.7\times10^{10}}{4.3\times10^{3}} = \frac{1}{4.0\times10^{6}}$

see 144 – 518tK-12 – isolation of several gal⁻ segregants to see if

1. gain no gal+ ε X 1436
2. all lysogenic
3. X 1673 to see if all gal⁻ tp⁺ (linkage intact)

a. streak out overnight culture 518tK-12

– 518tK-12 – crosses with 1678 gal+tp⁺tp^s

gal+ tp^s / gal⁻ tp⁺ –

	EMB gal	Condition	(+)	(–)	
borrowed	1	0.1 ml of each overnight cultures	6	8	B
	2	" " " "	11	6 (+)	B
518tK-F⁻	3	Aerated 518tK-12, unaerated 1678	0	0	what happen?
	4	" " "	0	0	
	5	" " "	1	0	
	6	" " "	0	0	
	7	" " "	heavily contam	0 (–)	
1678 F⁻	8	Aerated 1678, unaerated 518tK-12	78	2/16	Some gal+ appear to be mixed
	9	" " " "	70	30	
	10	" " " "	72	18	
	11	" " " "	76	26	
	12	" " " "	83	25	

of the 115 – 110 streaked single colony picked and tested against 3 – all 1R – replica'd against 1485 – all lysogenic

(+) (–) individual strokes – A

Saturday 11/29

— Reexamination of the conjugability of aerated 518tK12 cultures —

1. 518(~~streptomycin~~) X 1678, 1673 — (all cultures resuspended in 1X Saline)

EMB gal	Additions	(+)	Petri dish (-)	
1	aerated 518, unaerated 1678	0	18	F+1678 XF-518 = 0/18
2	" " 1678	0/0	53	F-1678 XF+518 = 0/53
3	aerated 518, unaerated 1673	0	10	F+1678 XF-518 = 0/71
4	" " " "	1/1	18/28	F-1678 XF+518 = 3/57
5	unaerated 518, aerated 1678	3	571	F+1673 XF-518 = 17/28
6	" " " 1673	16	411	F-1673 XF+518 = 16/427

(booked)

2. 518tK12 X 1678, 1673

7	aerated 518tK12, unaerated 1678	0	1	
8	" " " "	1	0	
9	aerated 518tK12, unaerated 1673	0	0	
10	" " " "	0	0	
11	unaerated 518tK12, aerated 1678	135	28	← (of these 28 I examined - all λ^R all lys / 1485)
12	" " " 1673	146	32	

(booked)

— Sterility checks

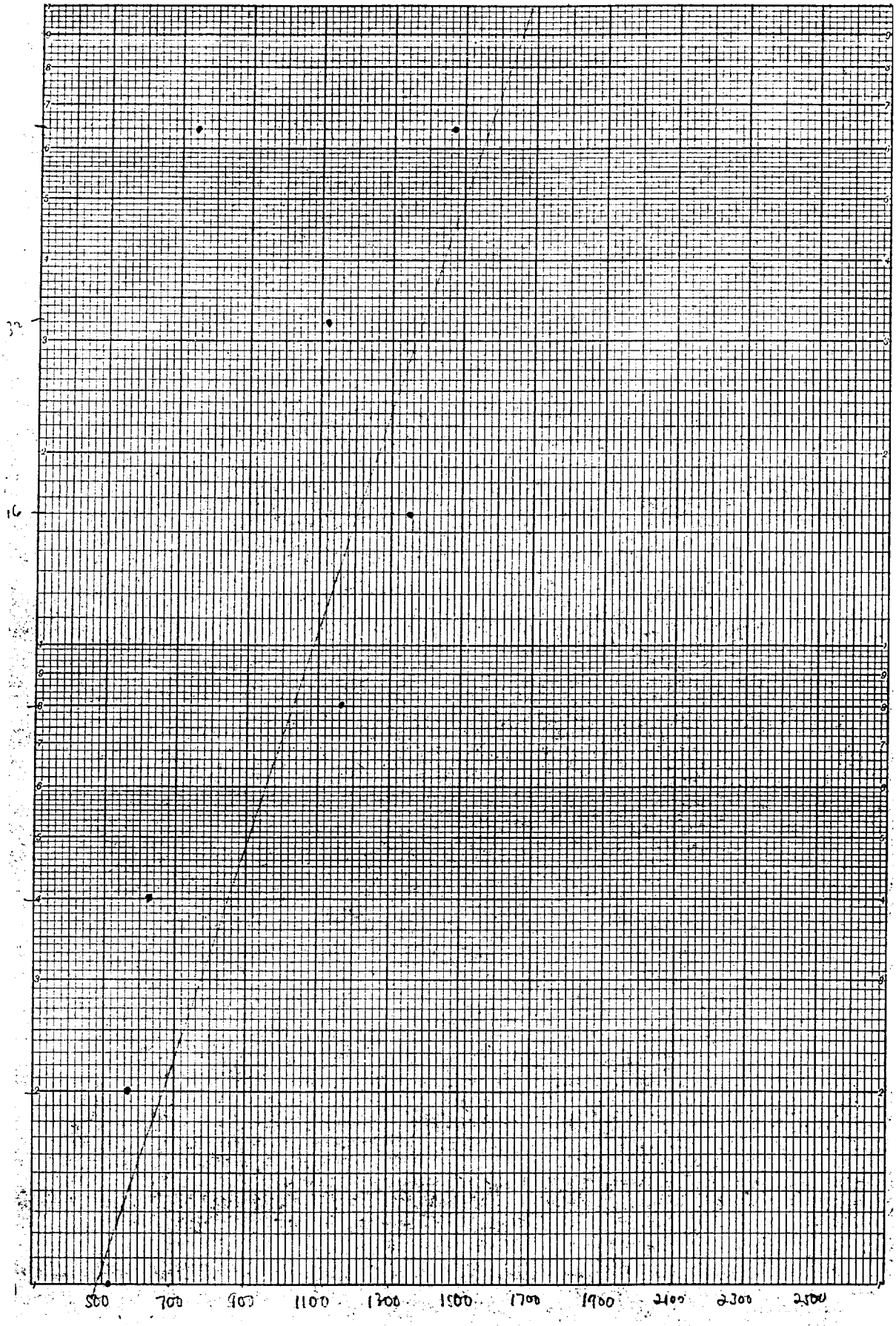
518t892-2	1.0 ml
518t892-1	1.0 ml
811t892-1	1.0 ml
811t892-2	1.0 ml

in Penassay - o.k.

-Sunday 11/30

2050 Reexamination of putative C 2050 in ~~Fig.~~ 142

EMB gal	Additions	24 hrs 2 days
1	none	½ = 131 (what happened?) (all small)
2	0.1 518t892-1	solid growth gap (mostly +?) c. 5000?
3	0.1 518t892-2 (undiluted)	solid growth gap (mostly +?) c. 5000?
4.	0.1 518t892-2 (dil 1-10)	solid growth gap (mostly +) ½ = c. 100 = 7000
5.	0.1 811t892-1 (und)	solid growth gap (mostly +) c.
6.	0.1 811t892-1 (1-10)	solid growth gap (mostly +)
7.	0.1 811t892-2 (und)	½ = 94 (all small
8.	0.1 K-12 (11/13) λ	½ = c. 100 = 800



No papillae →

A1 wo = wo and 573 gal
A1 K-12 = 0.1 K-12 λ " "
A1 891 = 0.1 892 λ " "

Monday-Tuesday 12/1 12/2

5% - No of cells plated - influence on number of transductions observed (papulon)

Stock suspension dil = 2×10^7 — 648,547 = $6.97\times2\times10^7$ = 139.4×10^7 = 1.4×10^{10} cells/ml
dil. stock plated in constant, 0.1 ml K-12 λ (11/23)

# cells	used	in K-12 λ lysate (2504)	in at K-12 λ
1.4×10^8			
7×10^8	1-2	½=445 (1780)	35
3.5×10^8	1-4	¼=369 (1472)	29
1.75×10^8	1-8	⅛=280 (1120)	10 *
8.75×10^7	1-16	1/16=662 (1324)	33
4.4×10^7	1-32	1/32=581 (1862)	49
2.2×10^7	1-64	1/64=251 (562)	39
1.1×10^7	1-128	535	32
5.5×10^6	1-256	509	23

(plotted)

titer 2.7×10^{10} (estimated)

* heavily contaminated ∴ spore plaques

14% transduced by 750 - Distinction between gal$_1$- and gal$_4$-

EMB gal	Addition	No pap. 2 days
1	none	24
2	01 750 λ	145

← many of these papillae have haloes about them spontaneous do not.

16 papillae picked from EMB gal 1 streaked on gal

	1st alt (-)	2nd alt (-)	3rd alt (+)		1st alt (-)	2nd alt (-)	3rd alt (+)
1	..	..	..	9	..	..	..
2	..	..	..	10	..	..	..
3	..	..	..	11	..	..	..
4	..	..	..	12	..	..	..
5	..	..	..	13	..	..	..
6	..	..	..	14	..	..	..
7	..	..	..	15	..	..	..
8	..	..	..	16	..	..	..

discarded

2050 ± 811 pfu (142) stability

8 picked	1st mixed	2nd mixed pure (+)*	3rd mixed? pure (+) (+)
1.	..	..	..
2.	..	..	..
3.	..	..	..
4.	..	..	..
5.	..	..	..
6.	..	..	..
7.	..	..	..
8.	..	..	..

← Stock made of this

* + reaction not as strong as usual-

Sunday 12/7/52

5784K-12 · Examination of gal- segregants for their allelic state · (–) derived from pectored gal+ colonies · 6 streaked out once and single (–) colony inoculated into Pen. Overnight cultures [illegible] as follows:

Strain/gal(–) /1485		No add (contaminated ē (+) colonies) →	K-12 (λ)	811-2 λ	902 λ-1	Conclusion
	1					
	2	23	130 (224)	14	262	gal+
Gal– segregants from 5784K-12	3	(contaminated ē (+) colonies) →				—
	4	(contaminated ē (+) colonies) →				
	5	23	98 (225)	24	231	gal+
	6	(contaminated ē (+) colonies) →				—
	7	29	226 (273)	28	302	gal+
	8	(contaminated ē (+) colonies) →				
	9	31	146 (216)	30	248	gal+
?	10	48	186 (225)	80	299	gal+ (?)
	11	37	154	22	284	gal+
	12	40	164	53	245	gal+
This series = A	13	(contaminated ē (+) colonies) →				—
	14	32	103	22	263	gal+
	15	41	84	23	345	gal+
	16	28	138	20	271	gal+
	17	30	87	27	287	gal+
	18	20	83+	24	231	gal+
	19	28	67	28	239	gal+
	20	28	107	34	206	gal+
	21	31	97	17	245	gal+

↖ magnitude of 902-deletion similar to that of 902 on 811 which with this prep was (147±202) - c 40

16/17 say (–) segregants are gal+

1/17 says (–) segregant is gal+ - with possible change in ct.

now 17/17 say gal+

this 811 on lysate

EMB	Added	Pop 2 days
1.	811 cell - no λ	48
2.	" (811 λ)-2	50
3.	902 x 1658 lysate - no λ	13
4.	" - (811 λ)-2	105
5.	2050 - no λ	42
6.	" - (811 λ)-2	289

Exam. 811 plate stable

Strain	1	2	3
1.	mixed	mixed	
2.	"	"	
3.	"	"	
4.	"	"	
5.	"	"	
6.	"	"	
7.	"	"	
8.	"	"	
9.	"	"	
10.	"	"	
11.	"	"	
12.	mixed	mixed	
13.	"	"	
14.	"	"	
15.	"	"	
16.	"	"	

5B Note. h-10 unstable, revertants EMB gal+ none = 74 2 (0.5B λ)-2 = 59 apparently 1st assay in error - contam ē spreader

4 failures

17 successful tests

2070 = (1673 gal– 1) examined for its relationship to gal 1-4 – by means of lysate activity.

EMB gal	Addition	No. prop. 2 days
1	none	10
2	0.1 750 λ	54
3	0.1 902 λ	¼ = 314 1256
4	0.1 892 λ	331
5	0.1 811 λ	175

2070 t 750

	1	2nd mixed	2nd mixed
1	mixed	mixed	mixed
2	+	+	+
3	+	+	+
4	+	+	+
5	+	+	+
6	+	+	+
7	+	+	+
8	mixed	mixed	mixed

2/4

2070 t 892

	1	2	3
1	mixed	+	+
2	+	+	+
3	+	+	+
4	+	+	+
5	+	+	+
6	mixed	mixed	mixed
7	mixed	mixed	mixed
8	mixed	mixed	[illegible]

2/4

2070 t 902

	1	2	3
1	mixed	mixed	mixed
2	+	+	+
3	mixed	mixed	mixed
4	mixed	mixed	mixed
5	mixed	mixed	mixed
6	+	+	+
7	+	+	+
8	mixed	mixed	mixed

5/8

2070 t 811

	1	2	3
1	+	+	+
2	+	+	+
3	+	+	+
4	mixed	+	+
5	+	+	+
6	mixed	+	+
7	+	+	+
8	+	+	+

0/8

transferred to ē plate for

518t902 gal-
seg
= B transduce c 811 }
902 }

12/9/52
Tuesday

146

518t902 Gal- segregants - Examination - isolated from single segregating colonies streaked on EMB ... - and a single colony chosen

	1/1485	no. pop			pito. blue	
1.	lyvogenic	235	18	50	gal4-	
2	"	223+	29	16	4-	
3.	"	102+	22	15	4-	
4.	"	contam.	29	24	4- ?	
5.	"	137+	18	14	4-	
6.	"	143+	25	23	4-	
7.	"	10	507	9	2- ←	}
8.	"	10	424	7	2-	}
9.	"	325+	191	214	4-	
10.	"	151+	16	31	4-	
11.	"	160	20	44	4-	
12.	"	232+	44	52	4-	
13.	"	143+	16	32	4-	
14.	"	136+	18	36	4-	
15.	"	pages 46	32	~~24~~ 38	?	}
16.	"	116+	29	21	4-	
17.	"	214	31	31	4-	
18.	"	99+	30	33	4-	
19.	"	139+	41	41	4-	
20.	"	contaminated c gal+				
21.	"	222	21	23	4-	
	streaked /1485	0.1 ml 902 λ	0.1 ml (811 λ)-2	no add		
					17 4-	

This series = B

17 gal4-
2 gal2-
1 double?

Pooled

Saturday 12/13

C = -518 & 892 Examination of gal- segregants

gal-isolate	1485	0.1 (892 λ)-1	0.1 (811 λ)-2	no adsorption	probable locus
1.	lysogenic	92	22	24	gal4-
2.	"	78	38	36	gal4-
3.	"	99	27	25	gal4-
4.	"	353	304	20	*
5.	"	84	26	18	gal4-
6.	"	68	29	19	gal4-
7.	"	contaminated c̄ + cells →			
8.	"	376	392	29	*
9.	"	442	324	45	*
10.	"	453	410	21	*
11.	"	337	364	30	*
12.	"	77	25	31	gal4-
13.	"	427	294	46	*
14.	"	387	416	23	*
15.	"	78	36	32	gal4-
16.	"	contaminated c̄ + cells →			
17.	"	78	30	11 (red plate)	gal4-
18.	"	304	271	22	*
19.	"	296	257	3	*
20.	"	88	25	35	gal4-
21.	"	73	29	38	gal4-
22.	"	67	33	25	gal4-
23.	"	278	190	21	*
24.	"	309	207 (thin plate)	18	*

booked

ng

892 a

mix

11 gal4-
* 11 unknown locus -

← streaks →

Stability examination of * unknown locus -

booked

pg	C-4-811 ①	C-4-811 ②	C-4-811 ③	C-4-892 ①	C-4-892 ②	C-4-892 ③	C-9-811 ①	C-9-811 ②	C-9-811 ③	C-9-892 ①	C-9-892 ②	C-9-892 ③
1.	mixed	mixed	mixed	mixed	mixed	mixed	mixed	+	mixed	mixed	mixed	mixed
2.	mixed	mixed	"	"	"	"	"	mixed	"	"	"	"
3.	mixed	mixed	"	"	"	"	"	"	"	"	"	"
4.	+	+	"	"	"	"	"	"	"	"	"	+
5.	+	"	"	"	"	"	"	"	"	"	"	mixed
6	mixed	"	"	"	"	"	"	"	"	"	"	"
7.	mixed	"	"	"	"	"	"	"	+	"	"	"
8	mixed	"	"	"	"	"	"	"	mixed	"	"	"

811 galt^R cultures transferred to a plate for stock purpose

Saturday 12/13

S18EK-12 - ✓ on stability of gal-segregant after a second transduction - See pg 145 repeat series

gal-isolation		1st streak	2nd streak	3rd streak
A-2	pop 1.	+	+	mixed
	2.	mixed?	mixed	mixed
	3.	+	+	+
	4.	+ slow present?	mixed	+
	5.	+	+	mixed
	6.	+	+	mixed
	7.	+ slow present?	+	+
	8.	+ 1/8	+ 2/8	+ 4/8
A-5	pop 1.	mixed	mixed	+
	2.	+	mixed	mixed
	3.	+	+	+
	4.	mixed	+	mixed
	5.	mixed	mixed	+
	6.	+	mixed	+
	7.	+	mixed ?	+
	8.	mixed 4/8	+ 6/8	+ 7/8
A-7	pop 1.	mixed	mixed	mixed
	2.	"	mixed	mixed
	3.	"	mixed	mixed
	4.	"	+	+
	5.	"	+	+
	6.	+	mixed	mixed
	7.	+	+	mixed
	8.	+ 1/8	mixed 5/8	mixed 6/8
A-9	pop 1.	mixed	mixed	mixed
	2.	+	mixed	mixed
	3.	mixed	+	+
	4.	+	mixed	mixed
	5.	+	+	mixed
	6.	mixed	+	+
	7.	+	mixed	mixed
	8.	mixed 4/8	mixed 5/8	mixed 6/8
A-11	pop 1.	+	+	mixed
	2.	mixed	mixed	mixed
	3.	mixed	mixed	mixed
	4.	mixed	+	+
	5.	+	+	+
	6.	+	mixed	mixed
	7.	mixed	mixed	+
	8.	+ 4/8	mixed 5/8	mixed 5/8

Booked

previously (p. 96) → 4 transfers = 60% mixed
here 23/40 → 3 transfers = 58% mixed

0.57 = 58
40) 23.0
200
300
280
200

Monday 12/14

CROSSES.

811 XY-10 to obtain gal$_4$ prototroph to examine the ability of 811 g+-1 and 811-g+-2 to transduce in minimal - Is the weak gal+ of these reversions another allele not having sufficient power to allow for selection in EMB gal ?

		prototroph (+)	(-)	
EMS gal 1	both Y-10 & 811	237	8	
2.	" "	226	9	
		463	17	17/480

811 g+-6 XY-10 to observe if this is true reversion

		(+)	(-)	
EMS gal 1.	both	277	0	
2.	"	357	0	
3.		341	1	← on check on EMB gal this colony +
		975	1	

811 g+-7 X Y-10

1.	both	145	0	
2.	"	215	1?	
3	"	254	0	
		614	1?	← this col also + on ✓

811 g+-9 X Y-10

1.	both	235	0	
2.	"	245	1?	
3.	"	280	1?	
		760	2?	← both + on ✓

811 g+-10 X Y-10

1.	both	205	0
2.	"	153	0
3	"	205	0
		563	0

2062
Natural λ

EMB gal		No. pops 3 days
1	no add	4
2	0.1 1485 λ-1	12
3	0.1 K-12 λ (11/23)	219
O(0) 1.	no add	0
2.	0.1 1485 λ	0

Lysate sterility

0.1 of 902, 892, 750 λ into Pen - all sterile -

Monday 12/18/52

518 transduced gal- segregants.

B = 518 t 902

B7 = on prelim. test, gal$_2$ -

EMBgal		after 2 days
1.	no add	56
2.	0.1 (650 λ) -1	611
3	0.1 (902 λ) +1	58
4.	0.1 (892 λ) -1	342
5.	0.1 (811 λ) -3	147 ← this prep contam.

12/23

	Keap't dunks
	63
	463
	65
	387
← this prep contam.	205 ← (811 λ) -3

Crosses

	(+)	(-)
B7 X 902 -	4	390
"	7	277
	13	667 + 225 = 892

↑ not releasable 902 contam. E +

B-8 = gal$_2$ - on prelim exam.

EMBgal		
1.	no add	59
2.	0.1 750 λ -1	705
3.	0.1 902 λ -1	77
4.	0.1 892 λ -1	513
5.	0.1 (811 λ) -3	173 ← this prep contam.

despite this it apparently has some activity - other case contam. sometimes showing up in B-15 as well - duckweed

Crosses

B-8 X 902	1	137
	3	176
	1	145
	5	458

this cross repeated giving about 12 <1% +. Discarded by accident - involved about 10 plates with c. 200 prototrophs / plate

B-15 = a double ? gal$_2$ - gal$_4$ - ?

EMBgal			
1	no add	30	(many small -)
2.	0.1 (650 λ) -1	35	(" ")
3	0.1 (902 λ) -1	36	" "
4	0.1 892 λ -1	27	" "
5.	0.1 (811 λ) -3	28	" " ← this prep contam.

Crosses

B15 X 902	3	118
2.	3	176
	6	294
B15 X 892	1 ?	5
	8	4
	1 ?	9
B-15 X 1476	0	322

either gal$_2$?

C = 518 t 892

C4 = transduced by 811 and 892 - a new allele?

EMBgal		
1.	no add	46
2.	0.1 (750 λ) -1	286 (wet plate)
3.	0.1 (902 λ) -1	27
4.	0.1 (892 λ) -1	190 (wet plate)
5.	0.1 (811 λ) -3	83 ← this gal$_4$ contam.

Crosses

C-4 X 902	2 ?	174
	3	160
	5 ?	334
C4 X 892	1	10
	1	6
	2	16
C4 X 1476	0	155
	0	129
	0	284

probably caused by contam in 902 culture

C9 = as C4

EMBgal		
1.	no add	72
2.	0.1 (750 λ) -1	586
3	0.1 (902 λ) -1	91
4.	0.1 (892 λ) -1	397
5	0.1 (811 λ) -3	190 ← this gal$_4$ contam.

Crosses

C-9 X 902	1	165
	0	132
	1	297
C-9 X 892	0	0
	1	5
	0	5
C9 X 1476	0	108
	1	117

boosted

boosted