DATE: 10/17/55

REF:

369

1	2	3	4	5	6	7	8	9	10

Incubation of 309-1 lysate (from lysate as previously)

1. Inf 0.1 ml + 10 ml saline, incubate, 0.1 ml + 10 ml Pen.

Page 2915

Time
0
15"
30"
45"
60"
75"
90"
105"

PP: =

DATE: 10/19/55 REF:

1. One step with 241-14 – assay M Gal using 2343 Gal.- puts a cell. 2915 as λ plaque assay

1. 241-14 streaked out – 10 colonies picked to broth, tested for HFT. 6 found HFT, broth of one used for Exp.

2. Dilute fresh cult. from broth to [ca 5·10⁴/ml.] saline
Pre ind. assay.

	Plate	Count	3 days	36 hrs M Gal
1. spont rev. 2343 0.1ml on M Gal =	✓ 1	0	3	+
2. HFT lambda assay 0.1ml + 0.9ml 2343 cult. – 0.1ml =	✓ 2	0	8	+
3. λ plaque assay. 0.1ml + 0.9ml 2915 0.1ml =	✓ 3	7		+

3. Post. Induct. = 40 seconds. ADD 5ML + 5ML 2X PEN

Time		½ dilution	Count	
0'	1. Trod. assay 0.1ml + 0.9 2343 =	4. ✓	0	+
	2. λ .. .. .. 2915 =	5. ✓	348 (9)	+
15'	3. Trod.	6 ✓	0 (8)	+
	4. λ	7 ✓	341	+
30'	5 T	8 ✓	0 (10 col pl)	+
	6 λ	9 ✓	ca 300-400	+
45'	7 T	10 ✓	1 (6)	+
	8 λ	11 ✓	321	+
60	9 T	12 ✓	1 (2)	+
	10 λ	13 ✓	360	+
75'	11 T	14 ✓	0 (8) ca col pl	+
	12 λ	15 ✓	7400	+
90	13 T	16	1 (5) ca col pl	+
	14 λ	17	7417	+
105'	15 T } omit	18		+
	16 λ	19		

3a. 6 M Gal plate 0.1ml each — 20-25 — 6
✓ To 3 add 0.1ml 2343 — 8-25 — ca 600 all Gal – 4, 2, 3
After 90' add 0.1ml 2343 Respread 3 again. — 24-26 — 3, 5, 8 — 122, 91, 105

Gal+ in ca. 600 (+) or clear

2915 ✗ K12 lysogenization – Does lysog. result in lp⁺/lp⁻?
or low multiplicity – ca. 3-4 contam. cells per 1000-1500.
1. 16 colonies picked for exam. – 10 colonies from each streaking

#	+	lp S	R
1	9	1	0
*2	3	7(1)	0
*3	3	7(5)	0
*4	10	0	0
*5	10	0	0
*6	5	5(4)	0
7	0	10	0

#	+	lp S	R
8	0	10(1)	0
9	2	8(1)	0
10	0	10(1)	0
11	7	3(1)	0
12	not done		
*13	0	9(3)(contd)	
14	0	10(6)	0

#	+	lp S	R
*15	3	7(5)	0
16	0	10(7)	0

* = with lp reaction. Streaked and retested 2 colonies picked from each.
All lp⁺ reaction strong

wk (+) selected after streaking out 2 per each

contents 5 in parent ( )

B

6.54×10^4

6.54 x 10^7 /ml ...

DATE: 10/22/55 REF: 371

lp^{r}/lp^{s} heterogenotes - always accompanied by λ^{+}?

1A 2279 $Gal_1 - Lp^s$ λ — HFT Gal_2 - from 241-14 Mal - lysate titer at 1.3 x 10^8

A. Overnight 2279 dil 0.4 ml + 10 Pen - 0.5 ml + 0.1 ml 241-14 Mal - dil $10^2 \to 10^4$ → 0.1 ml samples B gal

A

2. Result:

		Gal+	Gal- (not Gal)	Recolor + Gal+
A. Broth control	1.	0	624	0
	2.	0	684	0
			65	
B. 241-14 lysate	1.	6	633	26
	2	5	608	18
	3	7	592	25
	4.	2	498	16

+ = lysis, 0 = no lysis

Heterogenotes /2279

1	+	(11)	+
2	0	(12)	+
3	+	13	0
4	+	14	+
5	0	15	0
6	+	16	+
7	0	17	+
8	+	18	0
(9)	+	19	0
10	+	20	+

7 0 13 +

analysis → continued 372

A

O omitted from ... because ... suggest ... in each clone ... or ...

The lp^{+} clones from 371A, 371B grown up in broth, centrifuged and spotted on 2279. One set of spots unrad, one UV-irrad (20" UV), none of them, on spotting: showed λ lysis. At the same time 368A-4, 368A-16 showed λ lysis.

These cultures retested /2279 (not irrad) on 12/2/55. No evidence of plaque lambda found.

B Same as above but W518 $Gal_4 - Lp^s$

A. Broth control	1.	0	90	0
	2	0	82	0
			Av 86	
B. 241-14 Mal. lysate	1.	0	59	1
	2	2	47	5
	3.	3	131	9
	4.	1	42	2
			279 : 69	

From 1st streak

	Heterogenotes /2279	6 Gal+	6 Gal-
1.	+	6 (r)	1(r) 5 (s)
2.	0	6 (r)	6 (s)
3	+	5/5 (r)	3 (r), 2 (s)
4	0	5/5 (r)	4 (s)
5	0	1 (r)	1 (s) bad lot
6	0	6 (r)	6 (s)

2 +

4 0

4 lp^{r}/lp^{s}

2 lp^{r}

B

← Given to JL 11/24/55

DATE: 10/28/55 REF: 372

1	2	3	4	5	6	7	8	9	10

371A Continued - Analysis of (+) and (-) from [illegible]

+ = lysis 0 = unlysed

	#1		#2		#3		#4		#5 Gal		#6		#7 Gal		#8		#10	
6(+) 1	R	+wk	R	0	R	+wk	R	+wk	S	0	R	+wk	S	0	R	+wk	R	+wk
2	R	+wk	R	0	R	+wk	R	+wk	S	0	R	+wk	S	0	R	+wk	R	+wk
3	R	+wk	R	0	R	+wk	R	+wk	S	0	R	+wk	no test		R	+wk	R	+wk
4	R	+wk	R	0	R	+wk	R	+wk	S	0	R	+wk	no test		R	+wk	R	+wk
5	R	+wk	R	0	R	+wk	R	+wk	S	0	R	+wk	S	0	no test		R	+wk
6	R	+wk	R	0	R	+	R	+wk	S	0	R	+wk	no test		no test		R	+wk
6(-) 1	R	+	R	0	S	0	R	+	R Gal+	0	R	+	R Gal(+)	0	R	+wk	R	+
2	R	+	R	0	no test		—		R	0	R	+	R	0	—		S	0
3	R	+	R	0	R — 0		—		R	0	R	+	R	0	—		S	0
4	R	+	R	0	—		—		R	0	R	+	R	0	—		S	0
5	R	+	R	0	—		—		R	0	R	+	no test		—		R	+
6	R	+	R	0	—		—		R	0	R	+	no test		—		R	+

#1: (-) seg. (+) react stronger than Gal+

#5: Gal(+) and Gal(+) [illegible] changed

#6: (-) (+) change from Gal+ λ rx

#7: Gal(+) and Gal order reversed

1st ch	λp (+)	λp R	λp+	λp+	λp R	λp+	λ R	λp+	λp+

	#13		#14		#15	
1	R	0	R	+wk	R	0
2	R	0	R	+wk	R	0
3	R	0	R	+wk	R	0
4	R	0	R	+wk	—	
5	R	0	R	+wk	—	
6	R	0	R	+wk	—	
1	S	0	R	+	S	0
2	S	0	R	+	S	0
3	S	0	R	+	S	0
4	S	0	R	+	S	0
5	S	0	R	+	S	0
6	S	0	R	+	S	0

λp R λp+ λp R

DATE: 11/8/55 REF: 373

1	2	3	4	5	6	7	8	9	10

Testing of some heterogenotes by crossing - Comp. c̄ VL expt.
Theoretically het. for lp^r could be two type or lp of lysogenic

$\frac{A\ A}{b\ b}$ lp^r (not considered) $\frac{A\ A}{B\ b}$ lp^+ $\frac{A\ A}{B\ B}$ lp^+ × $\frac{A}{b'}$ → $\frac{A\ A}{b'\ b}$ lp^R + $\frac{A\ A}{B\ b'}$ lp^+ $\frac{A\ A}{B\ B}$ lp^+

W3011 × HFT (H7) λ from 7/8H117-1 4 heterogenotes obtained · crossed ⊗ 2279

1. Grown together ca. 2 hours diluted 1-10 plated S Gal - only 2 Gal+ on all plates (0)
2. Mating mixture replated und. after resuspd in H2O on M Gal (3 plates each cross)

A. Results.

		Cross 1	Cross 2	Cross 3	Cross 4	Rpt. #2 (11/23/55)
No Gal+	1	14	3	22	26	3
	2	ca. 85	4	19	69	7
	3	ca 100	2	19	51	—
total		199	9 (11)	60	146	

(#2 is lp^+, Gal (segregation))

B. Pick 24 from each. Strain 1 and test for lysogenicity.

#	Cross 1 /2279	seg	/λ	Cross 2 /2279	seg	/λ	Cross 3 /2279	seg	/λ	Cross 4 /2279	seg	/λ	Rpt #2 /λ	seg	/2279	MORE /λ	seg	/2279
1	0	ns	S	+	s	R	+ (+)	s	R	0	s	R	S	ns	0	R	s	+
2	0	s	R	+	s	R	0	ns	S	+	s	R	R	s	+	R	s	+
3	0	ns	R	+	s	R	+	s	R	+	s	R	S	ns	0	R	s	+
4	0	ns	R	+	s	R	+	s	R	+	s	R	R	s	+	R	s	0
5	0	ns	R	+	s	R	0	s	R	0	s	R	(S)	ns	0	R	s	+
6	0	s	R	+	s	R	+	s	R	+	s	R	R	ns	+	R	s	+
7	0	ns	R	+	s	R	+	s	R	+	s	R	R	s	+	S	ns	0
8	0	ns	S	+	s	R	+	s	R	0	s	R	R	s	+	R	s	+
9	0	ns	S	+	s	R	0	ns	R	+	s	R				R	s	0
10	0	s	R	+	s	R	+	s	R	+	s	R				nt	ns	nt
11	0	ns	R	+	s	R	+ nt	s	R	+	s	R				R	s	+
12	0	ns	S				+	s	R	+	s	R				R	s	+
13	0	ns	R				0	nt	R	+	s	R				R	ns	0
14	0	ns	R				+	s	R	+	s	R				S	ns	0
15	0	ns	R				+	s	R	+	s	R				R	s	+
16	0	s	R				0	ns	R (S)	+	s	R				R	s	0
17	0	s	R				nt	nt?	R	+	s	R				R	s	+
18	0	s	R				+	s	R	+	s	R				S	ns	0
19	0	?	R				+	s	S	+	s	R						
20	0	?	R				+	s	R	+	s	R						
21	0	?	R				0	s	R	+	s	R						
22	0	s	R				+	s?	R	+	s	R						
23	0	s	R				+	s	R	+	s	R						
24	0	s?	R				[illegible]			+	s	R						

Margin: + = lp^R ... 0 = ... lp^S

Rpt #2: 12 colonies tested. All gave weak sensitivity reaction.

MORE (same as above, plating not seg)

Seg transf. by 2^-, 4^-, & lp^S
Retested /+ /1^- /6^- /7^-
Cells + 0 + +

Seg transf. by 2^-, 4^-, lp^S ...
Retested /+ /1^- /6^- /7^-
Cells + 0 + + 4

seg not trans by 2^-, 4^-, lp^S
transformed by 4, 1^-, 6^-, 7^- lots

Mistake 2 sets of 373-1 ... 2
Pencil marked ones are deduced from similarity
of plate 13-24 and 1-12 between
#1 and #2

S = segregates Gal+/-
ns = non seg.
#17 mixed

373-1 tested /λ, 2279 lp^R 11 lp^+ Gal+/- 12/15/55

	/λ	/2279	/λ	/2279
373-3	R	+ s lp^+	R	+ - lp^+

Use /λ
These should react,
not meaningful re test.
One culture /lp^S seg!
not tested /λ

Retest completely

1	2	3	4	5	6	7	8	9	10

1. Enlarging the P.E. loci data   Combinations of 1⁻ & 4⁻   360-3

1. 360-3 - 24 PE(-) picked streaked out. 19 Galt stained.
9 Galt stbl 10 Gal- sey.

1924EHFI

	1⁻	4⁻		
1	P.E(-)			
2.	o	o	?	
3.	o	+	contam.	
4.	PE			
5	o	o	?	
6.	PE		3	PE.
7	o	+	3	1-4⁻ ?
8	o	o	3	1⁻
9	o	+	1	4⁻
10.	+	o		

2. 368-1 As above. 9/15 Galt stbl.
6 Gal-sey dist.

1.	— PE. —			
2.	o	+		
3.	+	o	3	1⁻
4	o	+	2	4⁻
5.	+	o	1	PE.
6.	o	+		

3. 366-2 As above 6/20 Galt stbl. <- This clone Lp^R/Lp^s
12 Gal-sey B.

1	o	+		
2	o	+		
3	— PE —			
4	contam -			
5	— PE. —		4	1⁻
6	+	o	3	4⁻
7	o	+	2	1-4⁻
8	+	o	2	PE.
9	+	o		
10	o	+		
11	o	o		
12	o	o		

These all Lp^s except P.E.

6 Galt stable were tested against λ are Lp^s, also recheck slow Galt stbl.

DATE: 11/19/55 — 2234 checked it grows[?] — REF: 375

	1	2	3	4	5	6	7	8	9	10
	More 1Hfr Gal₂ +/− × F⁻ Lpˢ. (7) (375-1 → 375-7)									
			X 2274 (Grown together, ..., plated M Gal							
	375-1	375-2	375-3	375-4	375-5	375-6	375-7			
Re ✓ λ/2279	Lp+	Lp+	Lp+	Lp+	Lpˢ	Lp+	Lp+	/2279, λ		
Segregating?	YES	YES	YES	NO	[illegible] NO	YES	YES	← Segregating?		(2 Matz)
	Cross Matz. 0.1ml 375-X + 0.1ml 2274 in Pen. - Inc. 6½ hours. Centrifuge, resusp. [illegible]. 0.1ml EMGal.									
Gal+ on EM COR → 1	8 (mostly wk? +)	81	70	152	ca 1000	113	128	RPT on #		
2	15	71	40	103	ca 1000	88	117	add. prob. from same clone.		
	Gal+ Prototrophs. →									
	λ seg? /2279	λ seg? /2279	λ seg? /2279	λ seg? /2279	λ seg? /2279	λ seg? /2279	λ seg? /2279	seg? /2279		
•1	R s +	R ns +	•R s +	R ns +	s ns 0	•R²⁻⁴⁻Lpˢ? s 0	R s +	s +		
•2	R s +	R? s 0	•R s +	R ns +	s ns 0	•R 2⁻ s +	•R 1⁻ s +	s +		
3	R s +	R s +	R s? +	R ns +	s ns 0	R s +	•R 4⁻ s +	s +		
•4	R s +	R [illegible] 0	•R s 0	R ns +	s ns 0	•R 1⁻? s 0	•R 2⁻? s +	s +		
(2⁻) •5	R s +	nt (nt?) nt	•R s 0	R ns +	s ns 0	•R 2⁻? s +	•R 2⁻ s +	s +		
6	nt ng nt	R (nt) 0	R ns 0	R ns +	s ns 0	R ns +	R s +	s +		
7	R ns +	R (s) +	•R s +	R ns +	s ns 0	R ns +	•R 2⁻4⁻ s +	s +		
8	R s +	R (s) +	R s 0	R ns +	s ns 0	•R 2⁻ s +	R s +	s +		
9	R s +	nt (s) nt	R ns +	s ns 0	s ns 0	•R 2⁻ s +	•R 2⁻ s +	s +		
(2⁻) •10	R s +	R seg (nt) 0	R ns +	R ns +	s ns 0	•R 2⁻ s? +	•R 2⁻ s +	s +		
(2⁻) 11	R s +	R ns +	•R s +	R ns +	s ns 0	•R 2⁻ s +	•R 2⁻? s 0	s +		
Thrown out before testing → •12	R s *0	R s 0	•R [illegible] 0	R ns +	s ns 0	R ns 0	R s 0	s +		
•13	R s +	R nt +	•R s +	R ns +	s ns 0	R s 0	•R 2⁻ s +	s +		
(2⁻) 14	R s +	R nt 0	s nt 0	R ns +	s ns 0	R s +	•R 2⁻ s +	s +		
•15	R s +	R s +	•R [illegible]s +	R ns +	s ns 0	•R 2⁻ s +	•R 2⁻ s +	s +		
16	nt s +	R s +	•R s +	R ns +	s ns 0	•R 2⁻ s +	R ns +	s +		
(2⁻) 17	R s +	R s +	•R s +	R ns +	s ns 0	R ns 0	•R 2⁻ s +	s +		
(2⁻) 18	R s +	R nt 0	R nt +	R ns +	s ns 0	•R 4⁻ s 0	•R 2⁻ s +	s +		
(2⁻) 19	R s +	R s +	s ns 0	R ns +	s ns 0	•R 4⁻ s +	R ns +			
20		R s 0	s ns 0	R ns +	s ns 0	•R 2⁻ s +	R s +			
21		R s +	•R s +	R ns +	s ns 0	R s 0	R s +			
22		R s +	R s 0	R ns +	s ns 0	•R 2⁻ s +	•R 2⁻ s +			
23			R ns 0	R ns +	s ns 0	R s +	•R 2⁻ s +			
24			R s? 0	R ns +	s ns 0	•R 2⁻ s +	•R 2⁻ s +			
	17 Lp+ 1 LpR	17 Lp+ 8 LpR	13 Lp+ 8 LpR 3 Lpˢ	23 Lp+ 1 Lpˢ	24 Lpˢ	17 Lp+ 7 LpR	22 Lp+ 2 LpR			
	{6 2⁻ / 1 4⁻} Lp+		15 seg seg made towards: 9 2⁻ < 8 Lp+, 1 Lp[illegible] 2 2⁻4⁻ 2 Lp+?	0 seg	0 seg	19 seg 12 2⁻ < 11 Lp+, 1 LpR 2 4⁻ < 1, 1 1 2⁻4⁻ Lp?	22 seg seg made [illegible]: 2 4⁻ 11 2⁻ 1 2⁻4⁻?			
	Σ 35 Lp+ 1 LpR									

Margin notes: nt = no test; ng = no growth; + = Lp+, wk; 0 = Lp; R = res; S = sens.

Test for s or ns is based on elimination of gal phenotype: no (−) = ns, (−) = s

DATE: 11/19/55 REF: 376

Crossing over in 1-/4- PE. also assay if possible

A 368-1 overnight lu from single P.E.c-1cR. Inc. 9:50AM → 2:20PM

B 368-2 $10^2 - 10^4 - 10^6 - 10^8 \to 10$ 0.05ml sample

↓

0.05ml

samples for lac-assay

368-1	(+)	(−)	total
1	0	2	75
2	0	2	94
3	1	3	96
			265/3 = 89

368-2	+	(−)	total
1.	1	3	82
2.	5	0	50
3	4	0	69
			201/3 = 0.67/2 = 0.34

Plating / Wash

	(+)	(−)	tot			
1.	7	5	483	0	340	375 ← NOTE change in ratio
2.	ng					
3.	ng			ng		
4.	ng			ng		
5.	ng			ng		
6.	0	ca300	ca600			
7	0	"	"			
8	ng					
9	ng.					
10.	0	549	549			

multiplicity: 0.15/sample

	(+)	(−)	total
1	ng		
2	0	ca300	ca600 -
3	0	8	794 -
4	0	1	379 -
5	346	0	ca. 500
6	0	0	297 -
7	ng		
8	ng		
9	0	0	208 -
10	ng		

Rpt. on above culture - following day. Expt. done by spotting 0.05ml B gal and Inc. 5.5 hrs.

	(−)	(+)	Total
Ratio 1.	10	0	65
Parent 2.	17	0	108
Cut.			173

	(+)	(−)	total
1.	ng		
2	0	6	42
2	0	5	314
3	0	2	71
4.	0	226	229
5	0	0	2
6.	0	0	9
7.	0	0	51

DATE: 11/30/55

REF:

Two strand co.?

2279 × 241-14 wal- overnight 2279 1-10 → 0.5 ml + 0.1 ml HFT 2⁻, inc. 15 min at Rm temp.
dil 0.2 + 10, 0.2 + 10, 0.2 + 10 → 0.1 ml / B gal plate

Plate	Gal+	Gal- contam	Gal-	total
1	1	6	127	134
2	0	3	124	130
3	1	1	134	136
4	1	1	135	137
5	0	4	123	127
6	0	3	116	119
7	0	1	132	133
8	0	1	141	142
9	0	0	153	153
	3	20		1211

1st std shows lysis? +1 → 4 (one of the (-) col. showed + on streaking)

0.019 = ca. 2%
1281) 23.00
1211
10890

+ = lys
0 = no

← 10 colonies from the primary streak tested /2⁻, 1⁻ HFT

		2⁻	1⁻	lp summary
0	Gal-col 1	all	Gal₁-	
+	2	"	"	10 lp⁺ all contam.
+	3	"	"	10 0 0
+ (little)	4	"	"	10 0 1
0	5	"	"	2 8 0
+	6	"	"	10 0 0
+	7	"	"	10 0 0
+ (little)	8	"	"	10 0 0
+	9	"	"	10 0 0
+	10	"	"	10 0 0
+	11	"	"	10 0 9
+	12	all	Gal₁-	10 0 1
+	13	"	"	10 0 0
0	14	"	"	10 0 0
+	15	"	"	10 0 0
+ little	16	"	"	10 0 0
+	17	"	"	10 0 0
+	18	"	"	10 0 0
+	19	"	"	10 0 0
				10 0 0

(lp summary columns: lp, lp⁺ or ⁻ (?), contam)

2 cultures labelled #4
no #7

use in order:
2 = 2
3 = 3
4 = 4
5 = 5
6 = 5
7 = 6
8 = 8

		10 colonies	5+ 5-
1st strk shows lysis		→ 5 Gal+	5 Gal₁-
0	Gal+col 1	5R 5 only s	5 lp⁻
0	2	5R 5 only s	3 lp⁻ (all)
+	3	5 lp⁺ (wk?)	2 lp⁺ strng 3 lp⁻
+	4	5 lp⁺ (wk?)	5 lp⁺ (2 strng)

DATE: 11/30/55 REF:

$7^-/7^-$ $\xrightarrow{Gal+}$ 7^-? also lysogenization of 2308 by HFT 7 (309-1) does it give more $Lp^{4}/4$ than 142λ?

1. Eighth procedure as on 376 c̄ 2279 × HFT (2⁻ 241 + 4 wal-).

2.

Plate	Gal-λ cont.	Gal-	Total
1.	1	35	36
2.	1	29	30
3.	2	37	39
4.	1	37	38
5.	2	26	28
	7		171

171) 7.00 = 0.04 = 4%

3. From each primary streak 10 colonies picked and tested, 2279, 142λ

Isolate	1 /2279	1 /λ	2 /2279	2 /λ	3 /2279	3 /λ	#4 /2279	#4 /λ	5 /2279	5 /λ	6 /2279	6 /λ	7 /2279	7 /λ
1	nl	s	contam.	s	nl	s	nl	s	nl	s	nl	s	nl	s
2	nl	s	• nl	s	• nl	s	• nl	s	nl	s	nl (contam)	s	nl	s
3	contam	s	• nl	↓	• nl	s	nl	s	nl (Gal+)	s	nl	s	↓	s
4	nl	s	↓	↓	↓	↓	ly s	R	nl	s	nl	s	↓	s
5	nl	s	↓	↓	• ↓	↓	nl	s	nl	s	nl (contam)	s	↓	s
6	nl	s	↓	↓	↓	↓	↓	s	nl	s	nl	s	↓	s
7	nl	s	↓	↓	• ↓	↓	↓	s	nl	s	nl	s	↓	s
8	nl	s	↓	↓	↓	↓	↓	s	nl	s	nl	s	↓	s
9	nl	s	↓	↓	↓	↓	↓	s	nl	s	nl	s	↓	s
10	contam	s	↓	↓	↓	↓	↓	s	nl	s	nl	s	↓	s

nl = nonlys
s = sens
contam. contaminated with λ

• papillating, [illegible]

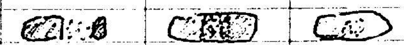
DATE: 12/7/55 REF:

1	2	3	4	5	6	7	8	9	10
W2892	tested this day (298-8 ← K12:λ → 4ᵃ/4ᵇ)			304A-1					
	9 colonies tested / λ all resistant.								
	10 colonies tested, DNA all found not segregating.								
W2890	tested (298-8 =	2-	4-	4-	4ᵇ				
	against +	2-	4-		7ᵃ				
					7ᵇ				
					7ᵇ¹				
					7ᵇ¹ ↓				

DATE: 12/12/55 REF:

Expt. (contd.) of 269-1 lysate and attempt to recreate a 269-1 strain.

1. Retest of lysate dil with / undiluted 10^2 10^4

	undil.	10^2	10^4
/2341			
	mucoid resist.	mucoid resist.	ca. 1000 minute plaques
/1412			few scattered plaques with lysis
/2279			

2. 2341 X—LFT K12 Gal+

1. Control ca. 30
2. EFA (0.1ml) 300

B 6 Colonies picked purified on streak - lysate made, UV (45") of overnight unaerated cult in broth. Inc. overnight on rotator.

Colony →	1	2	3	4	5	6
Seg.?	yes +	yes + lost in centrifuge	yes ++	yes +	yes +++	yes (+)
Supernat. of overnight cult lyses 1412?	NO	—	NO	NO	NO	NO
Lysate streaked						
/2341	no lysis	—	no lysis	no lysis	no lysis	no lysis
/1412	no lysis		no lysis	no lysis	no lysis	no lysis
/2279	no lysis		no lysis	no lysis	no lysis	no lysis

DATE: 12/1~~4~~/55 REF:

1	2	3	4	5	6	7	8	9	10

2341 X — HFT + from 750CK12-1

1\. overnight 2341 ~~[illegible]~~ 0.4 ml + 0.1 ml HFT (+) → 2341 streaked out 3 gal 10 colonies picked, tested against λ 8 Lp^r/s 2 Lp^s

↓ 0.1 ml plated undiluted for control ca 20

↓ dil 10^2, 10^4, 10^5 0.1 ml

	Gal(+)	Gal-lysed	Gal-
1.	0	0	1/2: 117 at plate
2.	1	2	1/2: 130 at plate
3	1	~~2~~	3~~0~~8
4	0	2	373
~~5~~			
~~6~~			

2\. The Gal+ streaked out – 6 + and 6 - colonies streaked / λ, /2279

		① λ	2279	② λ	2279
Gal+	1.	r	ne	r	ne
	2.	r	ne	r	ne
	3.	r	ne	r	ne
	4.	r	ne	r	ne
	5.	r	ne	r	ne
	6	r	ne	no test	
Gal-	1.	r	ne	r	ne
	2.	r	ne	s	ne
	3.	r	ne	r	ne
	4.	r	ne	r	ne
	5.	s	ne	s	ne
	6.	r	ne	r	ne

These clones do not carry a λ+ particle? Test entire mass.

from stock cult. collection

2234 for reciprocal cross 373, 375 X Hfr heterogenote

0.1 ml 10^{-4} dil HFT Gal(+) 750CK12-1

ca. 3000 plaques.

3 small papillae – appear not to be segregating

Testing P gal pour method to study segregation in P.C. clones - scoring both Gal+, Gal-. Also complete recovery

1\. Gal+ readily scored 1st day. Supposed

2\. After 2-3 days P.C. colonies Gal+, Gal- colonies dark, but with light edges. Pick some to check.

18 picked – 16 pure – , 2 mixed +, ∓, mostly –

Inactivation of HFT (+) from lysate 780 LK12-1 — $5080 \times 10^{2} \times 10^{2} = 5.1 \times 10^{7}$

Plated / 2308

1. Lysate diluted 0.1 ml + 10 ml D(0) – Irradiated UV 50 cm → 0.1 ml added 10 ml Pen

	Dose	Dil*	Plaques 0.05 ml	λP/.05 ml	Gal pap/plate (.05 ml)		pap/.05 ml		KPI pap/2308 undiluted 0.1	
prelim. assay > 10³ plaques	0	1-10	254	2540	17	4	170	(20)	45	(30)
	10	1-10	274	2740	22	8	220	(160)	86	(71)
	20	1-10	174	1740	16	3	160	(60)	135	(120)
	30	1-10	135	1350	21	8	210	(200)	229	(214)
	40	1-2	777	1554	77	64	154	358	213	(198)
	50	1-2	511	1022	94	81	188	224	290	(275)
	60	1-2	197	394	56	43	112	172	257	(242)
	70	1-2	147	294	74	61	148	244	382	(367)
	80	1-2	123	246	78	65	156	260	422	(407)
prelim. assay 10² plaques	90	1-2	156	312	117	104	234	416	421	(406)
	Cell control = 0 plaques.	* 0.1 ml lys + 0.9 ml 2308 cells (10⁹/ml) or 0.5 ml + 0.5 ml.			control: 13				15	

312 / 300

DATE: 12/14/55 REF:

Analysis of Some P.E. clones. Gal_1^- // Gal_7^-

1. Culture 307-1A. 21 Gal+ obtained from 21 separate P.E. Gal-
5 apparent stable Gal+ — Lysates made of apparent stbl (+) — Dilute lysates made by mixed overnight cult in saline adding 0.1ml to 7.5ml Pen - incub 3 hrs at 37
16 seg Gal-.

A

2A The Gal- / HFT 1- / HFT 7-

The Gal-	/HFT 1-	/HFT 7-
1	0	0
2	0	0
3	+	0
4	+	0
5	0	0
6	+	0
7	0	+
8	0	0
9	+	0
10	— P.E (-)	—
11	0	+
12	0	0
13	0	0
14	0	0
15	0	0

No. Stbl +	strk BGal *	Lysate cleared
1	seg	no
2	n seg	yes
3	n seg	yes
4	n seg	no
5	n seg	yes

* strk on cult used for lysate

2 Gal_1^-
4 Gal_7^-
8 Gal_1^- Gal_7^-

HFT 1- × Gal_7^- 2708

2. Culture 307-1C 20 Gal+ obt. from 20 sep. P.E. Gal-
4 apparent stbl +
16 seg Gal -

This heterogenote is $4p^2/4p$

Stbl +	strk Bgal	Lysate clears	Gal Streaked Tested /λ
1	n seg	no	S
2	n seg	no	S
3	n seg	no	S
4	seg	no	R

As above ↑

B

2B The Gal- / HFT 1- / HFT 7-

The Gal-	/HFT 1-		/HFT 7-
1	0	4p s	0
2	+	s	0
3	0	s	+
4	+	s	0
5	0	s	0
6	0	s	0
⊙ 7	+	s	0
8	0	s	0
9	0	s	0
10	0	s	0
11	0	s	+
12	0	4p²	+
13	— PE (-)		—
⊙ 14	+	s	0
15	+	s	0
16	+	s	0

contd page

3 Gal_1^-
6 Gal_7^-
6 Gal_1^- Gal_7^-

DATE: 12/19/55 REF: 383

1	2	3	4	5	6	7	8	9	10

$Lp^+ \otimes Lp^+ \rightarrow Lp^R$ or Lp^S ?

811 X 2035 - Using replica plating to test.

1. The parents.

	no cells	no colonies not growing post UV	
W 2035	51	9	20 random streaked/2279
	54	12	
	30	8	
	39	7	
	47	8	
	221	44	
W811	75	0	20 random streaked/2279
	85	2	
	73	8	
	76	0	
	62	6	
	88	5	
		21	

+ = grows
0 = no grow

	2035		811
1	+	Lp R	+
2	0	R	all
3	0	R	+
4	0	R	↓
5	0	R	
6	0	R	
7	0	R	but
8	0	R	only
9	0	R	weakly
10	+	R	so
11	0	R	
12	0	R	
13	0	R	
14	0	R	
15	0	R	
16	0	R	
17	0	R	
18	+	R	
19	0	R	
20	0	R 20.	—
21	2 Lp +0		
	18 Lp S or R		

one of these became 2035 pt = W3171

Rpt. test of 323-2. position effect heterozygote 7 - x 1 -

24 presumed P.E. (-) picked → 21 → 21 Gal+ → 8 seg → 1 of the 8 segregants obtained is P.E. (-)

↓ 13 Gal+ stbl.

Obtained after two single colony isolations indicate

$\frac{-\;+}{-\;+} \rightarrow \frac{+\;-}{-\;+}$

Seg.	/1	/7
1.	0	0
2.	+	0
3.	0	+
4.	0	0
5.	0	+
6.	0	+
7.	0	0

1 7 -
3 1 -
3 1 7 -

383B

DATE: 12/26/55 REF:

Yield from LFT culture.

1. Irradiated 2580 ($F^- Gal_2^-$) —× W3005 ($F^- Gal_1^- Gal_4^-$)

2. Expt. (Prelim. expt showed feasibility of expt. Irrad. survivors used as starting culture this expt.)

1. 2580 ca 5×10^8/ml → centrifuged, resusp. saline - 40 seconds UV.
↓
spread for control = 109

2. 3005
↓ spread for control = 0

3. Post irrad. → spread. 0.1 ml

↓

1.0 ml + 9 ml Pen

Incubate 37C

Pressured plates

✓ TIME ⊙	pap/plate 0.1 ml
10	247
20	227
30	230
40	198
50	354
60	390
70	369
80	579
90	546

		/0.1 ml	
1.	Zero	697	
2.	"	585	
3.	"	704	
4.	"	ca 700	2686 /4 = 672
5.	Respread	574	
6.	after	719	
7.	2 hrs	746	
8.	"	ca 600	
		2639 / 4 = 658	

Kpt. 2/10/56

4/5 :

Allelism - Selfing.

Crosses of Hfr x F- to establish that selfing does not give Gal+ recombinants.

1. Technique. Overnight Pen cultures → 1.0 ml (Parent) + 1.0 ml (Parent) → 7.5 ml Pen → incubate 3 hours.

0. Plate B (Gal) for reversion

1. dilute 10^2, 10^3 → plate 0.05 D(0)

2. plate 0.05 ml undiluted M(Gal).

2. Cultures.

	Hfr	F-
Gal1-	2345	2958
Gal2-	2694	945
Gal4-	2487	1405

3. Expt. 1 -

		D(0) 0.05 ml 10^3 dil	D(0) 0.05 ml 10^2 dil	M Gal
(A) Gal1- x Gal1-	1.	22	192	80 Gal-
control spreads	2.	22	ca 200	80 Gal-
ok	3.	18	ca 200	ca 100 Gal-
		Ave. 21 = 420x10³ = 4.2x10⁵ prototrophs.		

(B) Gal2- x Gal2- both parents contam. c̄ Gal+

(C) Gal4- x Gal4- apparently 2487 not pure Hfr population (Other lab people noticed this recently)

control spreads ok	1.	0	0
	2.	0	1
	3.	0	2
			Ave 1
			= 20x10²

Expt. 2

(A) Gal2- x Gal2-	1	—	60	1	0	Plus ? (-) Strain
both parents picked	2.	—	74	2	0	
from single (-) on BGal	3	—	65	3	0	
			199/3 = 67			
			134x10³ = 1.3x10⁵			

Expt. 3

new stocks prepared 387 →

(A) Gal6- x Gal6-	1.	73	0
Controls BGal	2.	72	0
ok	3.	91	0
		236/3 = 79	
		158x10³ = 1.6x10⁵	

(B) Gal7- x Gal7-	1.	72	0
	2	59	0
controls BGal ok	3.	39	0
		170/3 = 57	
		1.14 x 10⁵	

DATE: 12/30/55 REF:

Pen

1. Phage content of some lp^r cultures - Cultures grown up and centrifuged. The supernatant centrifuged, and shaken with chloroform. Drops spotted on 2279 and B gal

1.	1924	no plaques
2.	2035 lp^r	contam. c (+) gal
3.	1898	no plaques
4.	1027	contaminated c (+)
5.	2587	no plaque.

} Redo - make sure

Segregation of lp^s from — x lp^s transductions.

1. Colonies 373-3 grown in Pen - diluted and plated on B gal
2. Second day replica'd to B(0) spread with 2279. Irradiated UV 25 seconds.

Plate	Gal(+)	Gal -	no. not lp^+ in 2279
1.	179	13	0
2.	153	13	0
3.	221	11	0
4.	194	8	0
5	186	13	0
6.	291	10	0
7.	225	6	0
8.	189	8	0
	1578	82	0

2nd Expt

ca 300 per plate ca 20-30 0

X20 plates = 6000 colonies total

1	2	3	4	5	6	7	8	9	10

To obtain Hfr Gal₆⁻, Gal₇⁻

W2252 exposed to Hfr 7⁻, 6⁻ on B(0). The spots streaked out.

				HFT / +	/6⁻	/7⁻	
1.	Hfr 6⁻	2 gal⁻	obtained	+	o	+ ⁘	Lp^s weak
				+	o	+ ⁘	Lp^s weak
	Hfr 7⁻	2 gal⁻	obtained	+	+	o	Lp^R
				+	+	o	Lp^R

2. Test cross to see if Hfr. See page 385

$$\text{Hfr Gal}_6^- \; Lp^s = W3056$$

$$\text{Hfr Gal}_7^- \; Lp^{R\,r+} = W3057$$

2236 In search for HFT 3⁻

2236 ← LFT 750 Gal, prep 11/30/55

0.1 ml gave ca 60 small papillae on B gal after 2 days

① 12 Gal+ papillae picked - all found stable after 2 streaks -
② 15 Gal+ papillae " - " - - " "

3, 14, 19, 18, 12, 7

0/70 seg < {no HFT 1⁻ / no HFT 8⁻}

B

II 14 additional obtained, no record of order - 2 contam. c (+), 12/12 LFT

1. LFT 2 LFT 3 contam. 4 LFT 5 ~~no seg.~~ 6. HFT 750 (lysate mutant?) (NO) 7. LFT 8 LFT 9 LFT
10 LFT 11 LFT 12 LFT 13 LFT 14 LFT 15 LFT 16 LFT 17 LFT 18 LFT
III 19 LFT 20 LFT

1210 ← 750 λ prep 11/30/55

C

0.1 ml = ca 30 pap small after 2 days

1. 20/22 colonies segregating - from the 2nd streaking 20 (-) picked, tested for HFT / 750, 1210

I (Unless otherwise stated LFT reactions apply to both indicators)
1. LFT 2. LFT 3. LFT (contam) 4. :: 750 LFT 1210 5. contam. 6. LFT 7. LFT 8. LFT 9. LFT
10. LFT 11. LFT 12. LFT 13. LFT 14. LFT 15. LFT 16. LFT 17. Contam. 18. LFT
19. LFT 20. LFT

2. 20 + ^seg restreaked

II (3 days)
1. Contam. 2. LFT 3. LFT 4. wk RX /750 5. no seg 6. no seg 7. contam. 8. wk RX /750 9. LFT
10. LFT 11. wk RX /750 12. no seg. 13. wk RX /750 14. contam. 15. wk RX /750 16. no seg. 17. wk RX /750 18. /750 wk RX
19. wk RX /750 20. contam.

III N.S. cho pg
1. — 2. — 3. LFT 4. — 5. — 6. ~~LFT~~ 7. — 8. — 9. —
10. — 11. LFT 12. LFT 13. LFT 14. LFT 15. — 16. — 17. — 18. —
19. LFT 20. —

DATE: 1/10/56 REF:

1	2	3	4	5	6	7	8	9	10

2341 X 2306 [illegible] $2\frac{1}{2}$ - [illegible] xF⁻ 4⁻ lyt

1. 1.0 ml of each parent to 10 Pen - [illegible] CC. 4 times,
2. .05 ml plated [illegible]
3. Colony counts 3 day:
   1. 38 Gal+ }
   2. 46 Gal+ } all small
   3. 35 Gal+ }
4. 40 Gal+ picked, - streaked once - isolated (+) taken, tested / [illegible] for ay.

	/300S		^ REF	sag ?	Sg	½	¼	
1.	ml ml	^ ^		+ = yes	0	—		
2.	ml ml	^ ^		+	+	0	+ R	lyᴿ
3.	ml ml	^ ^		0 = w	0	—		
4.	lys lys	^ ^		0	0	—		
5.	lys ly	^ ^		0	0	—		
6.	ml ml	^ ^		0 -	0	—		
7.	ml [illegible]	^ ^		0 -	0	—		
8.	lys [illegible]	^ ^		0	0	—		
9	lys lys	^ ^		+	+	0	+ R	lyᴿ
10.	ml ml	^ ^		+	+	0	+ S	lyᴿ
11.	ly [illegible]	^ ^		0	0	—		
12	ml ml	^ ^		+	0	—		
13.	ml ml	^ ^		+	+	0	+ S	lyᴿ
14.	lys lys	^ ^		0	0	—		
15.	ml lys	^ ^		0 -	0	—		
16.	ml ml	^ ^		0 -	0	—		
17.	ml ml	^ ^		+	0	—		
18.	ml ml	^ ^		0 -	0	—		
19.	ml ml	^ ^		0 -	0	—		
20.	ly ml	^ ^		+	+	0	0 S	lyᴿ
21.	ml lys	sms ^		0 -	0	—		
22.	lys ml	^ sms		0	0	—		
23.	ml ml	^ ^		0 -	0	—		
24.	ml ml	^ ^		0 -	0	—		
25.	ml ml	^ ^		0 -	0			
26.	ml ml	^ ^		+	+	0	0? S	lyᴿ
27.	ml ml	^ ^		+	+	0	0 S	[illegible] lyᴿ
28.	ml ml	^ ^		+	+	0	+ [illegible]	[illegible] lyᴿ
29.	ml [illegible]	^ ^		+	+			
30.	[illegible] lys	^ ^		+	0	—		
31.	ml ml	^ ^		+	0	—		
32.	ml ml	^ ^		+	0	—		
33.	ml ml	^ ^		+	+	0	+ S	lyᴿ
34.	[illegible] ml	^ ^		+	+	0	0 R	lyᴿ
35.	lysogenic	^ ^		0	0	—		
36	ml ml	^ ^		0 -	0	—		
37.	[illegible] ml	^ ^		+	0	—		
38.	[illegible] lys lys	^ ^		+	+	0	+? R	lyᴿ
39.	[illegible] lys lys	^ ^		+	0	—		
40	[illegible]			+	+	0	+ R	lyᴿ

Margin notes: lys = lysogenic; ml = nonlysogenic; R = resist.; S = sens.

despite the order of parents [illegible] crosses are [illegible]

[illegible] 1 lyᴿ 13 lyˢ

26 lyᴿ < 8ms / 13 lyᵗ < [illegible] / [illegible]

21+ / 190

± ±×−−

388A

DATE: 1/15/56 — REF: MLM 360-2, 368-2

	0	1L	2L	Ms clas	4 Re ✓
A	−	(+)	−	4−	1·4−
	∓	(+)	∓	4−	
	−	(+)	−	4−	
	−	(+)	−	4−	
all 2k	−	−	−	1·4− (1)	
	−	−	−	1·4 (2)	
	−	(+)	−	4−	
	∓	(+)	−	4−	
	∓	(+)	−	4−	
	−	(+)	−	4−	
	−	(+)	−	4−	
	−	−	−	1·4 (3)	
	+/	+	−	+	
	−	(+)	−	4−	
	−	(−)	−	1·4− (4)	
	−	(+)	−	4−	
	−	(+)	−	4−	
	−	(+)	−	4−	

Retests:
(1) + 0 +
(2) + 0 +
(3) + 0 +
(4) + 0 +
4 Gal 1−

I

Separate Gal-segregants obtained from a P.C. clone without going through Gal+

{14 4− / 4 1−}

368-2

	0	1L	2L
1	±	−	± (4)
2	−	−	− (1)
3	−	−	− (1)
4	−	−	− wk 1−
5	−	−	− (2)
6	−	−	− (1)
7	−	−	− 0
8	−	−	− (2)
9	−	−	− (1)
10	−	−	− (2)
11	−	−	(+) (8)
12	−	−	− (1)
13	−	−	± (2)
14	−	w (+)	+
15	+/−		
16	−	−	(+)
17	−	−	± (4)
18	−	(+)	− Gal4−
19	−	−	± (4)

all λ^3

II

Gal4− × Gal1−

Significance here is that the only 4− obtained is ly^s − Con indication that the exogenote is ly^s.

$ly^s / ly^s = \lambda^{F-s}$

Lysate [illegible] IIFF4

lysate wash

New grp being made

III

As above

368-1

	1	4	Bt
1.	0	3	+
2.	0	0	+
3.	+	0	0
4.	0	3	+
5.	0	Gal4−4 × Gal1+−	
6.	[illegible]	4	+
7.	0	2	+
8.	0	1	+
9.	+	0	0
10.	0	2	+
11.	0	2	+
12.	0	7	+
13.	0	3	+
14.	0	1	+
15.	0	1	+
16.	0	2	+
17.	0	3	+
18.	0	2	+
19.	0	1	+
20.	0	4	+
21.	0	1	+
22.	+	0	(+) ← now + here − indicates ε homogenote
23.	0	4	+
24.	0	6	+

{21 1− / 3 4−}

DATE: 1/12/55 REF: 389

For the purpose of obtaining $F^- TLB_1 \equiv Gal_7^-/Gal_7^-$ for cross with Gal+ Lp^5

1. 307-1A, a P.E. heterogenote of $1^+7^-/1^-7^+$ compassion taken and Gal − segregant from this clone tested for HFT production } These are separate from seg. event

P.E. cl → 1 Gal- seg.

Seg	/1	/7	/+	HFT ?/2550
1	+	o	+	0 = no
2	+	o	+	0
3	+	o	+	0
4	o	+	+	0
5	o	+	+	0
6	+	o	+	0
7	o	+	+	0
8	+	o	+	0
9	+	o	+	0
10	+	o	+	0
11	+	o	+	0
12	+	o	+	0
13	o	+	+	0
14	+	o	+	0
15	o	+	+	0
16	+	o	+	0
17	o	+	+	0
18	o	+	+	0
19	+	o	+	0
20	o	+	+	0
21	o	+	+	0
22	o	+	+	0
23	o	+	+	0
24	o	+	+	0
25	+	o	+	0
26	+	o	+	0

14 7^- 0/26
12 1^-

1/20/55
Additional 27 seg tested against 2550 - unclassified

1/22 HFT against 2550 - control spot Gal − = 389-1

389-1

Test further to see if $1^-, 7^-$ (Gal_1^-)

See 415

To fill up ms table (again!) Observations on HFT 7⁻, 6⁻

1. 309-1 = HFT 7⁻ stock.

A. 12 colonies tested for HFT/2580

⊕ ⊕ ⊕ ⊕
⊕ 0 ⊕ 0
⊕ ⊕ ⊕ ⊕

⊕ = HFT
0 = LFT

LFT seg = 9 { 0 + } = 1/9 LFT 7⁻

← may be closely related

LFT seg revertants 0/2 LFT gal⁺ segregating at 3rd streak

More evidence for lysogenic

ALSO ENTER STOCK BOOK

MAKE LYSATE HFG⁻

2. 311-2 = HFT 6⁻ stock

A. 8 colonies /2580

0 0 0 0
⊕ 0 0 ⊕

LFT seg revertants = 0/3 segregating at 3rd streaking

Preparation of Stocks for Kalckar, NIH, for study of the biochemistry of galactose fermentation

1. 2637 × HFT 1⁻, 2⁻, 4⁻, 6⁻, 7⁻

Overnight culture diluted 1-100, 0.05 ml + 0.5 ml of respective HFT stocks - subsequently (after 15 min adsorp [37C]) diluted 1-50 and plated B gal - 4 plates each.

2. Results. - On all plates, colonies are plaqued - probably >90% indicating phage / cells >1.

		total colonies	(−)	mosaic	Heterogenotes	total	(−)	mosaic
(A) HFT 1⁻	1.	192	0	2	of these E.[1/2] Kept	294	0	0
(2346)	2.	188	0	2		2. ca 300	0	0
	3.	211	0	0		3. ca 300	0	0 ①
	4	178	① to become 7(−) stock - initial streak showing phage	0 390-1		4. ca 300	0	② 390-7 (ly⁻/ly⁺)
(B) HFT 2⁻	1.	330	0	0				
(2342)	2.	402	0	0				
	3.	ca 300	0	0				
	4	ca 300	0 see 1 above	0				
(C) HFT 4⁻	1.	109	(1?)	2				
(293-12A)	2.	86	0	0				
	3.	94	0	0				
	4.	60	0	1 390-4				
(D) HFT 6⁻	1.	157	0	0				
(311-2)	2.	205	0	0				
	3.	201	0	2				
	4	234	0	① 390-6				

N 7⁻ stock initial streak showed ca 20% plaques

1st streak showed no 6⁻ stock ... [illegible]

This one is probably ly⁺/ly⁺

2 repeated - no mosaics, conspicuous (−), picked. Tested /4 /2⁻ + 0 slightly revertable? → λᴿ

SEE 396

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The cross 2252 X 341-9
M Gal+ Hfr Gal_2/Gal_2^- F^- TLB_1^s Lp^+

to see if $Gal+/-$ Lp^R/Lp^s are generated

1. Parents grow together 3 hours (- plated not initially at B [illegible] SM)
2. Following day tube (kept at room temperature) replated M Gal

(A) MGal

	(−)	(+)
1.	ca. 200	ca 22
2.	..	ca 31
3.	..	ca 27
4.	..	ca 40

(B) Pick Gal+ and see if seg. + Lp^R/Lp^s

		seg	non seg	Lp^+	Lp^s	Lp^R
#1	24 —	0 (1)	24 + 34 = 58	4 (16)	20 (39)	(2)

	seg 35'	λ	2677 small plaque	Genotype
1.	0 = no	R = [illegible]	+ (plaque)	Lp^+ wk
2.	+ = yes	self lysing	+ self lysing	$Lp^s + Lp^+$?Rec (1)
3.	0	R	nlys	(Lp^R) Rec (2)
4.	0	S, [illegible]	nlys	Lp^s
5.	0	S	nlys	S
6.	0	S	nlys	S
7.	0	R	+	+
8.	0	R	+	+
9.	0	S	nlys	S
10	0	R	lys	+
11	0	R	nlys	(R) Rec (3)
12	0	R	lys	+
13	0	S	nlys	S
14	0	R	+ (plaque)	+
15	0	S	nlys	S
16	0	R	+	+
17	0	S	nlys	S
18	0	S	nlys	S
19	0	S	nlys	S
20	0	R	+	+
21	0	R	+ (plaque)	+
22	0	S	nlys	S
23	0	R	+	+
24	0	R	+	+
25	0	S	nlys	S
26	0	S	nlys	S
27	0	S	nlys	S
28	0	S	nlys	S
29	0	S	nlys	S
30	0	R	+ (plaque)	+
31	0	S	nlys	S
32	0	S	nlys	S
33	0	S	nlys	S
34	0	S	nlys	S
35	0	S self lysing?	nlys	S Rec (4)

19 S
12 +
2 R 1 ?

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① HFT from 2580

① Overnight culture diluted 1-50 incubated at 37C in rotator ca 3-4 hours
② Centrifuged, resusp. in saline, recentrifuged, resusp. saline
③ dilute 10^2, 10^4, 10^6 → 0.05 ml

B gal A 1. 88
B 2. 83

~~Add 0.05 ml and Bgal SM with 3005S^R lpt (unheated)~~
① 1. 0
② 2. 0

④ irradiate 40 seconds → (ca 10% survivors)
⑤ dilute 10^2, 10^4 → 0.05 ml C 1. 1/4 150 1200
B gal D 2. 1/4 ca 200 800

Add 0.05 ml and Bgal SM with 3005S^R lpt [illegible]
③ 1. 0
④ 2. 0

dilute 1.0 ml + 10 ml Pen - Inc. 37C

		Time	Plate 0.5 ml 3005S^R lpt^+ on BGal SM			
	12:25	0	1. omit		2. omit	
	12:40	15	⑤	0	⑥	0
plaque agar →	12:55	30	⑦	0	⑧	0
too soft - surface	1:18	45	⑨	0	⑩	0
plating worked	1:25	60	⑪	0	⑫	0
here after 0 had irradiated	1:40	75	⑬	0	⑭	1
0.05 sample	1:55	90	⑮	4	⑯	1
	2:10	105	⑰	9	⑱	9

RPT.

1. Overnight culture diluted ca 1-50 incubated 37C .. as above. After irradiation dilute 1-2 instead of 1-10

.05 ml plated

	Pre irrad	Time	Treated		controls = 0.5 ml /3079 on B gal
pre ① ②	/3079 on SM	1:30 0 ✓	⑤⑥		⑦⑧
[illegible] ③ ④	/3079 on B gal	30 ✓	⑨⑩		⑪⑫
		60 ✓	⑬⑭		⑮⑯
		90 ✓	⑰⑱		⑲⑳
		100 ✓	㉑㉒		㉓㉔
		110 ✓	㉕㉖		㉗㉘
		180 ~~120~~	㉙㉚		㉛㉜
		~~130~~			
		~~140~~			

Phase was Super plates 5g agar indicated and incubated in order of Agar SM 1/30/56

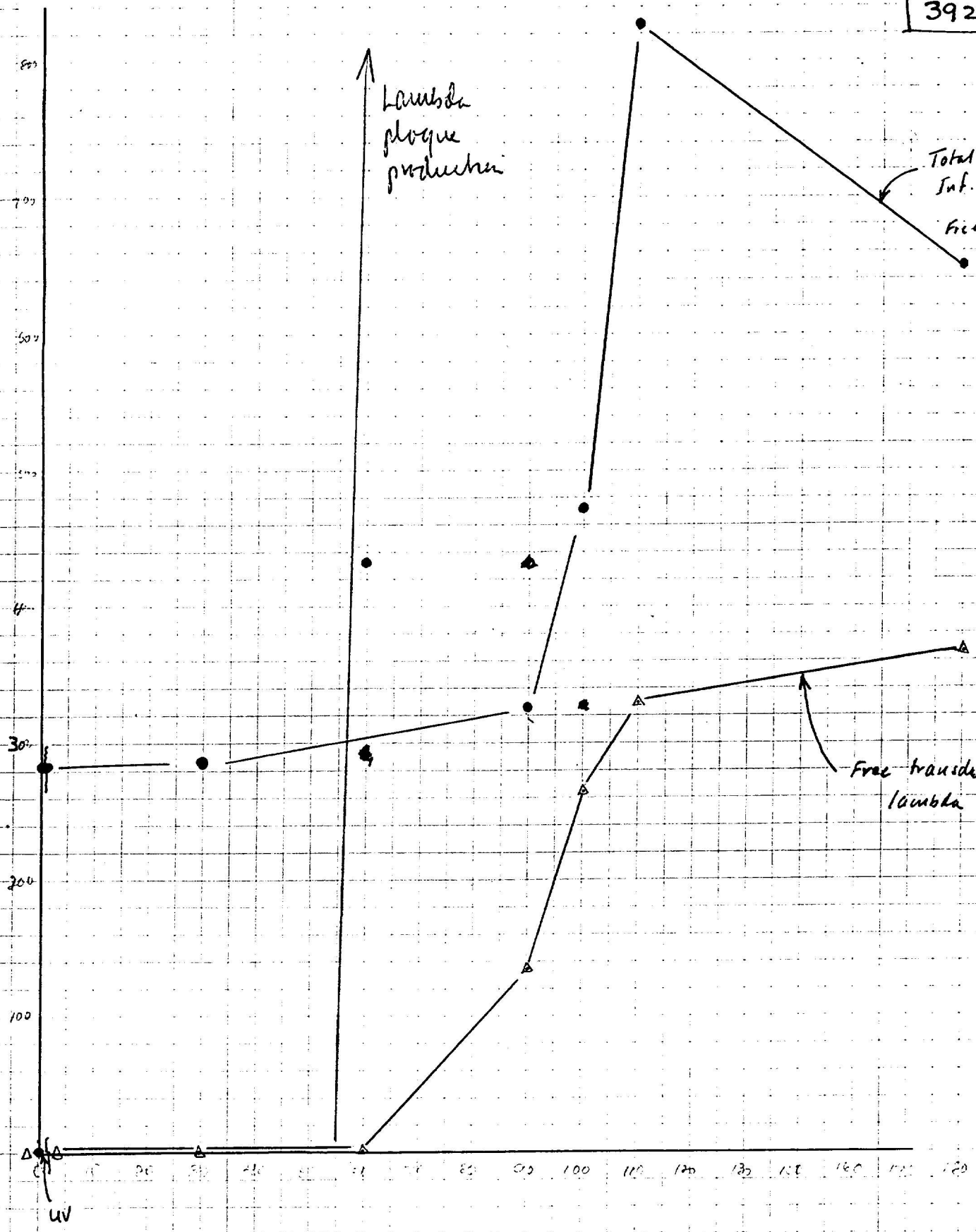
to follow plaque production: a loopful taken out at the following intervals and spotted on 3079 on B gal SM

T	Spot
15	17 plaques
30	23 plaques
60	solid spot
90	" "
100	" "
110	" "

Count plaques

				rep ave			rep	ave	
SM 1	ca 1000 pl, 6 pap (small)			3 ?		SM 17	112	134	
4 2	ca 1000 pl, [illegible] pap (small)					SM 18	153		90
B 3	? almost confluent?	9		8	P=	B 19	271	327	
B 4	? "	7				B 20	382		
5 (numbered 3+4 incorrectly)	ca 1000	0							
SM 6	ca 1000	1(?)		0		SM 21	218	263	
B 7	confluent?	252		285	0	SM 22	307		100
B 8	confluent?	321				B 23	472	471	
SM 9	ca 500 plaques	0				B 24	470		
SM 10	ca 500 plaques	0		0		SM 25	298	328	
B 11	conf?	212		288	30	SM 26	358		110
B 12	-	363 wt plate				B 27	744	829	
SM 13	conf.	3				B 28	913		
SM 14	conf.	0		2		SM 29	373	365	
B 15	"	334		433	60	SM 30	356		
B 16	"	522				B 31	612		180
						B 32	686	649	

17 are plaques ~~confluent~~


Lambda plaque production
Total Inf. Centers + Free phage + ?
Free transducing lambda
UV

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1	2	3	4	5	6	7	8	9	10

Most of the HFT stocks obtained come from Ly^+ recipients. ~~[illegible] This [illegible]~~ Has there been selection for a lambda assaying on Ly^+ (high) and low on Ly^s? This is the usual experimental observation — in contrast LFT lysates assay highest on Ly^s cultures. Obtain a lysate from HFT culture obtained — Ly^s recipient. Such a culture is 364A 1 — Start culture.

7. 13 colonies picked and tested for HFT /750

1. ⊕ ⊕ ⊕ ⊕
⊕ ⊕ ⊕ ⊕
⊕ ⊕ ⊕ ⊕
⊕

2/11/56

From EML to obtain an HFT (−) stock a culture labelled 7H − x 2961 which λ^h lysogenic made by 7-[illegible] x 2-Ly^s. From the plate received 24 Gal+ picked and streaked.

1. all segregated (−)
   a. The (−) were tested for HFT /2580, against 7-Ly^s stock (prepared for Kalckar study) [above "stock": prob.]

/2580	/7-Ly^s
O O O O O	O O O O O
O O O O O	O O O O O
⊙ O O O O	⊙ O O O O
O O O O	O O O O
O O O O O	O O O O
	lysis noted in all spots.

   b. 20 more tested with same results — all non HFT on 2580, 7-Ly^s above.