

3/26/53

2238X165T 4p. 5 gal. 3 - photomorph - entered in stocks
as 2297

3/30/53 -

811 ductin
no odd 44
2175E750 (49) 332
2175E750 (49) solid smear

} these from same pyroplaster

700 no odd 1
2175E700 (59) 212

1924 no odd 28
N16 (1-100) c. 3000

11/14/53
500000000 - 5X10⁶ cultures/ml

6/15 - 6/16 53

1485 Transductin to (-) with NI (gal, HFT)

Two mixtures obtained. Tested against NI (1-100) N16 (1-100) (both AFT) lysate

	/N16	/NI	locus	tp
1.	solid media	no effect	1-	+
2.	s.s. lysate	n.t. - lysate	1-	5 (?)

1673 Transductin to (-) with NI, N16 (HFT's)

7. NI no (-) obtained.
2. N16 3 (-) obtained.

4/20/53 test of N16	1.	0	NI (1-100)	0	N16 (1-100)
	2.	0	c. 50	0	
	3.	0	0	0	

9/13/54
2/32 suspected of being mixed with (gal +). Purified and tested - growth in gal + dec 20 hrs. Tested to get pr. HFT stock made of two (1,3) are tp₂ 6/20/53

← W2432

only one appears to be gal⁻ are others tp₂

1673 Induction of gal⁻ = U.V.

1. doses c. 10-12 records 12 (-) obtained on 12 plates.

902 - 6 sp gal⁻ obtained and stored.

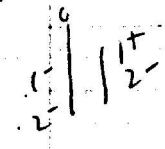
→ (N7) 3 spant + obtained - (appear stable) - stored

(N1) 2 spant + " " " "

Rearray

1673	N16 (1-100)	N16 (1-100)	7238	811-81	probable locus
1673 1985 N16-1	0	0	0	0	(?)
1673 1985 N16-3	0	0	0	0	(?)

1/14/56
This is 24 plates on the bases. Most 23421 is a mixture 1-2- and 1-2- as indicated by the genome map 23424



6/16/53 Tuesday -

871 - Transduction with 1 mutant to observe fate of infecting phage -

- | | | |
|-----------|-----|---|
| 1. no add | 26 | → analyze to obtain parental phage type |
| 2. 1485-1 | 105 | → " " " " mutant phage type |
| 3. 1485-6 | 262 | " " " " " " " " |

- | | | | |
|------|-----------|-----|----------|
| 2175 | 1. no add | 9 | } as 871 |
| | 2. 1485-1 | 63 | |
| | 3. 1485-6 | 183 | |

discarded

16
6/13/53 Wednesday -

Experiment Q - 578 EK-12 (-) segregants. Spst tests

Segregant	No. add	N16 (1-10)	571A-8	Prob. locus
Q 1	1	s. smear	1	4-
2	2	s. smear	0	"
3	1	contaminated c	+	"
4	1	solid smear	2	"
5	1	" "	1	"
6	0	" "	1	"
7	1	" "	1	"
8	1	" "	1	"
9	1	" "	2	"
10	0	" "	1	"
11	2	" "	2	"
12	1	" "	0	"
13	0	" "	1	"

Lysate	8/1	2/75	8/11	2/75
Q 4	1/1	8/1	4-	5/1
6	lysio	3/1 partial lysio	4- ch. reanay	
8	1/1	4/1	4-	
10	3/1	25/1	4	

Crosses	X 1436		
Q8	control streak	109, 152, 173, 176, 231	0/896
Q6	in EMB gel	144, 184, 107, 280, 203	0/918
Q4	stms in H	238, 244, 181, 129, 372	0/1134
Q10	-	191, 168, 153, 178, 173	0/863
			3711

6/18/53 Thursday

2175 ductin to obtain more (-) segregations

		14	86	76	88	77	80	77
1. no add								
2. 7501-2 (1)								
	(2)							
	(3)							
3. 811A-8 (1)								
	(2)							
	(3)							

(to obtain 14 (-) segs)
 +3 from test in reps 7i (10) picked
 ← these combined with 7 (-) previously obtained - 2 lost = 16 or (+)

750 ductin & 811A-8 (-) segs

1. no add	4	} all picked (26)
2. 811A-8 (1)	5	
	9	
	10	

0/26 segs (2)

net Σ = 26

1673 gal (-) mutations u.v. induced p. 203 tested

Gal. mut. no.	W1(100)	W16 (100)	2238A-1	811A-8	blegnd	probable locus	Comment
1.	blegnd	blegnd	blegnd	blegnd	high	?	appears to be slow - discard
23102.	6-10	c. 50	6-10	6-10	6-10	?	transduced only by 2 probably slow
2.	<blegnd	>blegnd	<blegnd	<blegnd	c. 20	?	transduced only by 2
23114.	-blegnd	solid smear	<blegnd	<blegnd	c. 10	?	transduced only by 2
23126.	0	c. 20	0	0	0	?	transduced only by 2
23136.	solid smear	3	2	20	c. 0	2?	or new locus?
23147.	solid smear	c. 70	4	c. 30	c. 0	?	new locus? <u>see</u>
23158.	solid smear	solid smear	0	c. 25	0	3-	
9.	c. 25	solid smear	c. 10	c. 10	c. 10 (small)	?	transduced only by 1 & 2
10.	2-3	c. 50	2-3	2-3	2-3	?	
11.	>blegnd?	blegnd	blegnd	blegnd	high	?	

all 1st - some spots show lysos

6/26 Repeat as above

2.	2	>100	5	5	100	double
4.	5	solid smear	5	2	3	"
5.	0*	0*	0*	0*	?	new
6.	>100	10	2	>30	3-3!	3-
7.	>100	>50	0	>30	3-	3-
8.	>100 (200)	>100 (200)	0	30	3- (?)	3-
9.	0	+++ (?)	0	>50 small	0	(13) (3) double
10.	0*	>30 (smear)	0*	0*	0	double (?)
11.	0	0	0	0	0	(?) (new) new

reshake all with high. blegnd - 1, 2, 3, 4, 9, 11
 addition of 1-2
 + by 811A-8 possibly by 8-12
 + by 811A-8
 pred mut. 811A-8 but t. named. 10-12 locus?

SEE PAGE 220

* plaques in blegnd. of 0/100

1673 gal. 85 x 811 - controls 5h

1.	1+ / 27
2.	0+ / 19
3.	0+ / 24

1+ / 84

0.012
 84 / 100

1.2% newmb.

Needed

- M - 750t K-12 crosses of M₁ x 750cr
- N - 750t 902 " Ngal₁ - x 750cr
- O - 2175t K-12 complete
- P - 578t 750 (duplicates)
- Q - 578t K-2 lysate test and crosses x gal₄¹⁴²⁶
- R - 578t 902 crosses of (R gal₂ - gal₁ / 12 gal₄ - x gal₄) and lysates of gal₂ -
- S - 811t 902 crosses of (S gal₁ - gal₁ / S gal₄ - x gal₄) and " " gal₂ -
- T - 2175t 750 all
- U - 8175t 811 crosses, lysates) in general
- V - 811t K-12 20/26
- W - 1924t 902 19/24

Thursday 6/25/51

Expt. U. 2175 + P21 (-) regions spot tested

U	new res. - $\frac{1}{2}$ of R	$N16(1-100)$	$\frac{211\lambda - t}{3}$	Prob. lines $4^-(?)$ (also λ^+) 2^-	spot	tested	$\frac{N1(1-100)}{\text{Rechecks}}$	$\frac{2175 + (1-100) \cdot N16(1-100)}{c. 200}$	$\frac{N16(1-100)}{c. 100}$
2	0	2	> 100		1	1	0	c. 200	c. 100
3	0	1	6		2	2			
4	0	0	6		3	3			
5	1	2	11		4	4			
6	0	solid smear	0		4	4	2		
7	0	1	12		5	5			
8	0	0	13		6	6			
9	0	1	9		7	7			
10	0	0	9		8	8			
11	1	0	8	$4^-(?)$	9	9	3	c. 200	c. 100
12	1	1	8	2^-	10	10			
13	0	solid smear	0		11	11	5	c. 200	c. 100
14	0	solid smear	0		11	11	6		
15	1	2	10	$4^-(?)$	12	12			
16	0	2	1	$4^-(?)$	13	13	7	c. 200	c. 200

~~2175~~

9 2-
7 4-

2/8/54

Remember but on order Done

	N16λ	S18λ
1.	0	+
2.	" (4 ⁺)	" (4 ⁺)
3.	"	"
4.	"	"
5.	"	"
6.	"	"
7.	"	"
8.	"	"
9.	"	"
10.	"	"
11.	"	"
12.	"	"
13.	"	"

Curve 1

~~2175~~

new #	hypothesis made	2/5/54	2175	750
U1	U1	50/1	1/0	22/0
U9	U10	70/1	0/0	61/0
U11	U13	20/1	3/0	14/0
U13	U16	30/1	0/0	14/0

but - all 2- because of conflict with above results. all 4 strokes, rechecked against N16, S18

All 2-

in view of the results suggest where spot be redone - Were the 4- really 60 or perhaps 2-4- which later rechecked to give the above results?

2/24/54

Slant made of U2 since it is L³ rest discarded

Saturday 6/27/53

97
22~~27~~ ductions to obtain reagent.

	control half	0.150g/remainder
1. 750A-2	2	88
2. 902A-4(C)	5	34
3. 811A-P	11	56

24 picked from each and streaked - source of July reagent - (1)

750 24/24 stable after 3
 902 21/22 stable after 3 + lost 200g. 24
 811 20¹⁰/23 stable after 3 3 questionably unstable, 1 lost.

7/5/53

902 lysate - 902A-7/4
 Spotted against 275 811
 0/1 100/2

Transductions for the purpose of obtaining reagents.
 Spread plates

811 -
 no odd 41
 K-12A 10/10 573 = 24 picked + streaked.

2nd strk (3) picked
 7/26 unit 20/20

1924

no odd 31
 K-12A 10/10 320
 750 25 probably doesn't transduce
 902 235

24 picked from each + streaked

2nd strk (3) picked
 13/24 unit 13/24
 19/24 unit 19/24
 2nd wave total
 14/24 = 20/48

Sunday
July 5, 1953

Experiment T - 275 transferred by 750 - the (-) segregants. Just tested against NI (1-10) and NI6 (1-10)

Segregant	Rt gal	NI (1-10)	NI6 (1-10)	Intake hours	Birth characteristics
1	0	c. 50	0	2-	R
2	0	c. 50	0	2-	S
3	0	c. 50	0	2-	R
4	0	0	>100	1-	S
5	0	>50	0	2-	R
6	0	0	>100	1-	R
7	0	c. 50	0	2-	S
8	0	c. 50	0	2-	R
9	0	c. 50	0	2-	R
10	0	>50	0	2-	R
11	0	>50 small	0	2-	S
12	0	c. 50	0	2-	S
13	0	0	>100	1-	R
14	0	c. 50	0	2-	R
15	1	>50	0	2-	R
16	0	c. 30	0	2-	S
17	0	c. 20	0	2-	R
18	0	0	0	? 4p?	R
19	0	0	0	? 4p?	S

all small after 2 day

Recheck	K-12A	892A (1-10)
bleeds = 0	65	20
	41	28

9/2/53
TIF not t. by 811

14 gal₂ -
3 gal₁ -
2 (?)
this may be 27-

Lysate examinations

lysates of T18, T19 m

- ① 8/11/53 → segregant 1 = gal₂ gal₄ - ? not t. by HFT 4
- ② 19-4/53 HFT 18 " 1 = gal₂ - ? not t. by HFT 2
- ③ 19-4/53 HFT 19 " 1 = gal₁ - ? " " HFT 1

9/16/53 Second lysates of T18, T19 made - tested against 2297 - Segregants looked for

{T18-1}	67	13	24 picked after 2 sth. 3/14 unstable
-2	110	16	
T19-1	135	26	23 picked - all stable after 2 sth
-2	270	30	

lysates (not good) made of

750	275	Possible hours
1/0	6/2	1-
0/0	3/2	1-

2/24/54
Short Stocks of T18, T19
retained - not discarded
as not carrying of virus

July 6, 1953
Monday

750 X 1436 cross - mEMB gal - controls sh a EMB gal

	(#)	total
1.	0	614
2.	0	677
3.	2	854
4.	1	835
5.	2	660
6.	1	958
	6	4588

4588 / 6.000
 $\frac{00013}{4588}$
 $\frac{14720}{13764}$

750 = $\frac{1-4p^4}{1+4p^4}$ lp close to 1 than 4
 1476 = $\frac{1-4p^4}{1+4p^4}$

0.13 = $\frac{1}{8}$ % recomb.

6/8 recomb. stable on EMB gal
 1 (H) recomb appears mixed for lp^+ - lp^+
 5/6 (H) λ^5

7/7/53
lysate tests

	750	2175	2297	811	1724
control spot	= 0	0	0	2	0
2238 λ	= 0	2	0	3	0
2251 λ	= 0.40	0	2	0.40	0
SIF (indate) λ	solid smear	solid smear	solid smear	1	0

Relationship of gal⁺ - lp^+

above gal⁺ - gal₁ = 0.23 % +
 ept. R gal⁺ - gal₂ = 0.21 % +
 p. 199 gal₁ - gal₂ = 0.13 % +

lp^+1 = 0.83 as lp^+ control.
 lp^+2 = 0.80 as lp^+ control.

7/12/53

$Lp^s S^r$
 $F^{-}TLB, Gal_4^{-} Mal V_6^+ Lac, - X F^{+}BM^{-}Lp^{+}S^s Gal_2^{-} Lac, V_6^s Mal^{+}$
 $\bar{2}234 \times 1210$

EML's 580 B. Cross of $gal_2^{-} \times gal_4^{-}$

8/27/53
 /K-12)

Protoporph	$\frac{2-}{N1L}$ gal_2^{-} - HFT	$\frac{4-}{S18}$ gal_4^{-} - HFT	$Lp(\lambda)$	/L6	Strep	Mal	
1	no. cracks	no. cracks	?	r	s	r	-
2	-	+	2	s	r	r	-
3	+	-	4	s	r	r	-
4	+	-	4	s	s	s	+
5	+	-	4	s	r	s	-
6	+	-	4	s	r	s	-
7	-	+	2	s	r	r	-
8	+	-	4	s	r	s	-
9	-	+	2	s	r	r	-
10	-	+	2	r	s	r	-
11	-	+	2	s	r	r	-
12	-	+	2	s	r	r	-
13	-	+	2	s	r	r	-
14	-	+	2	r	r	r	-
15	no crack	no crack	?	s	s	r	+
16	+	-	4	s	r	r	+
17	+	-	4	s	r	r	-
18	+	-	4	s	r	r	-
19	-	+	2	r	s	r	-
20	-	+	2	r	s	r	-
21	+	-	4	s	r	r	-
22	-	+	2	r	s	r	-
23	+	-	4	s	r	r	-
24	+	-	4	s	r	r	-
25	+	-	4	s	r	r	-
26	+	-	4	s	r	r	-
27	+	-	4	s	r	r	-
28	+	-	4	s	r	r	+
29	-	+	2	s	r	r	-
30	no crack	no crack	?	r	r	r	-
31	+	-	4	s	r	r	-
32	no crack	no crack	?	s	r	r	-
33	+	-	4	s	r	r	-
34	-	+	2	s	r	r	-
35	+	-	4	s	r	r	+
36	split + no + no	-	4	s	r	r	-
37	split + no + no	-	4	s	r	r	-
38	+	-	4	s	r	r	-

$Gal_4 = 26$ $Gal_2 = 13$
 4 $Gal_2 gal_4$

weak 8 gal
 4 gal
 2 gal

Parental
 O = 2234

8/18/54
 Accord several
 statements of EML
 parents of this
 set are in doubt

7/13/53

ref to deck in page 208

July - HET July - HFTA

Sept. V - 81E16-12 (-) segregants. Sppt tested with N16 (1-100), S18 (1-100)

Segregant	/N16 (1-100)	/S18 (1-100)
1.	+	-
2.	+	-
3.	+	-
4.	+	-
5.	+	-
6.	+	-
7.	+	-
8.	+	-
9.	+	-
10.	+	-
11.	+	-
12.	+	-
13.	+	-
14.	+	-
15.	+	-
16.	+	-
17.	+	-
18.	+	-
19.	+	-
20.	+	-

Stocks 2/24/54

lost

lost

maybe contaminated 8+9

20 galy -

(+) = c 500 pp./dwp (-) = no pp./dwp

Cvm X1436

- V2
- V10
- V17
- V18

6/12/54
Shahn of this
Cpt discarded

lysates tested 4/20/53

	Spoked	2175
V1	2/100	30/0.1
10	2/100	14/0.1
12	0/100	10/0.1
14	2/100	4/0.1

7/13/53

Expt. W 1924 to 902 (-) segregant. Tested in N16 (1-100) and SIF (1-100)

Segregant	N16 (100)	SIF (1-100)	Proportion	Notes
1	-	+	2-	h. lys
2	+	-	4-	"
3	+	-	4-	"
4	-	+	2-	one plaque
5	+	-	4-	w. lys.
6	+	-	4-	"
7	+	-	4-	"
8	+	-	4-	"
9	+	-	4-	"
10	+	-	4-	"
11	+	-	4-	"
12	+	-	4-	"
13	+	-	4-	lysogenic
14	-	+	2-	w. lys.
15	+	-	4-	"
16	+	-	4-	"
17	+	-	4-	"
18	+	-	4-	"

W2813

2/24/54

The stocks of this cell line were made up of W1 since it is the best for

15 gal⁻
3 gal⁻
1 tp⁺
17 tp⁺

Control X 902 1436

1
4
14
17
18

Reversion of W1 tested spring '55 (see page) One found diploid. Possibly W1 was $\frac{tp^+}{tp^-}$ $\frac{Gal^+}{Gal^-}$

no. separating
to pickup

ratio: $\frac{\text{ducton plate}}{\text{control plate}}$

Transductions Made

λ Source

	(67) K-12	(681-) 750	(682-) 902	(683-) 2238	(684-) 811
(681-) 750 mutator	17/24 ^(?) (190)	19/17 (191)	23/24 ^N (191)	24/1	0/26 (206)
(682-) 2175	22/24 (191)	19/72 ^T (206)	83/14 (191)	24/1	1/49 (206)
(683-) 2298	24/24	0/24 (202)	87/2 (202)	0/22 (202)	3(?) / 23 (202)
(684-Lpt) 518	13/24 ^Q (190)	855/19 (185)	detrit 72/29 (191)	23/24 ^R (191)	472/11
(684-Lpt) 811	20/26 (202)	513/41 (190)	detrit 96/51 (190)	19/24 ^S (190)	147/47 (190)
(684-Lpt) 8924	24/48 (202)	326/31 (202)	detrit 7 (202)	19/24 (202)	238/21 (202)

B.

The occurrence of stable transductants.

Exp. = no. of stable (+) expected, Obs. = no. of stable (+) observed.
 Comparable (equivalent) nos. considered.

Lambda Source

K-8 Transduced	K-12		gal ₁ ⁻		gal ₂ ⁻		gal ₃ ⁻		gal ₄ ⁻	
	Exp.	Obs.	Exp.	Obs.	Exp.	Obs.	Exp.	Obs.	Exp.	Obs.
gal ₁ ⁻	1/143	42			1/84	3.5	not done		128 27 *	
						$\chi^2 = 6.25$				
gal ₂ ⁻	17/248	20.7	4/83	61.1			not done		14/79	52.1
		$\chi^2 = 0.87$								
gal ₃ ⁻	not done		2/88	880 (all stable)	5/34	34 (all stable)			13/56	48.7
gal ₄ ⁻ h _p ⁺	19/835	383	29/72	72 (all stable)	11/472	19.7	not done			
h _p ⁺	41/573	133	51/96	96 (all stable)	47/147	30.6 **	not done			
h _p ^r	31/320	127	ratio duckin plate control plate	25/31 *	31/238	49.6 $\chi^2 = 12.7$	not done			

* duckin does not go well apparently

** estimated from two different experiments

Expected = $\frac{\text{control (sp. pop.) plate}}{\text{phage plate (= sp + transd.)}}$

Obs. = $\frac{\text{no. stable obs.}}{\text{no. sample taken}} \times \frac{\text{no. phage plate (sp + transd.)}}{\text{no. in sample taken}}$

Key to Experiments

Lambda Source

<u>Recipient</u>		<u>K-12</u>	<u>750</u> <u>gal₁-</u>	<u>902</u> <u>gal₂-</u>	<u>2238</u> <u>gal₃-</u>	<u>811</u> <u>gal₄-</u>
<u>Cells</u>	<u>gal₁-</u>	<u>Expt. M</u> p. 192A	 	<u>Expt. N</u> p. 192B	not done	no expt. designation p. 206
	<u>gal₂-</u>	<u>Expt. O</u> p. 196	<u>Expt. T</u> p. 209	 	not done	<u>Expt. U</u> p. 207
	<u>gal₃</u>	not done	no. expt. designation All stable p. 208	no. expt. designation All stable p. 208	 	no. Expt. designation All stable p. 208
	<u>gal₄ hp^s</u>	<u>Expt. Q</u> p. 205	no. expt. design. all stable p. 187	<u>Expt. R</u> p. 198	not done	
	<u>811 hp^t</u>	<u>Expt. Y</u> p. 212	no. expt. design. all stable p. 195	<u>Expt. S</u> p. 208	"	
	<u>1924 hp^r</u>	<u>Expt. X</u> p. 216	no. expt. design. all stable p. 208	<u>Expt. W</u> p. 213	"	

No. segregants
 class by transduction test
 class by donor test
 class by test cross

(what they are transduced by)
 (what they can transduce) usually 4 seg. taken at random

Lambda Source

Recipient cells	16-12 gal⁻ gal ₁ ⁻	gal ₂ ⁻	gal ₃ ⁻	gal ₄ ⁻
gal ₁ ⁻	17 17 gal ₁ ⁻ 4/4 gal ₁ ⁻ 4/4 gal ₁ ⁻ (incomplete)	X	23 18 gal ₁ ⁻ 5 gal ₂ ⁻ 5/5 gal ₂ ⁻ 4/4 gal ₁ ⁻ 5/5 gal ₂ ⁻ (incomplete) 4/4 gal ₁ ⁻ (incomplete)	not done (+)
gal ₂ ⁻	20 20/20 gal ₂ ⁻ 4/4 gal ₂ ⁻ 4/4 gal ₂ ⁻ (inc.)	19 14 gal ₂ ⁻ 3 gal ₁ ⁻ 2(?) double? incomplete opposite gal ₄ ⁻ 2(?) transduce gal ₄ ⁻ inc.	X	16 8 gal ₂ ⁻ 4 gal ₄ ⁻ + 8(?) double? incomplete
gal ₃ ⁻	not done	stable (+)	stable (+)	X
gal ₄ ⁻ Lp ^s	13 13 gal ₄ ⁻ 4/4 gal ₄ ⁻ 4/4 gal ₄ ⁻ (inc.)	?	21 18 gal ₄ ⁻ 3 gal ₂ ⁻ 14/16 gal ₄ ⁻ (gal ₂ ⁻ incomplete) 4/4 gal ₄ ⁻ (complete) 2/2 gal ₂ ⁻ (incomplete)	not done
Lp ⁺	20 20 gal ₄ ⁻ incomplete incomplete	?	19 16 gal ₄ ⁻ 3 gal ₂ ⁻ 15/15 gal ₄ ⁻ gal ₂ ⁻ (incomplete) 4/4 gal ₄ ⁻ (complete) gal ₂ ⁻ (incomplete)	not done
Lp ^r	29 29 gal ₄ ⁻ incomplete incomplete	5 stable (+)	18 15 gal ₄ ⁻ 3 gal ₂ ⁻ (Lp ^r) incomplete incomplete	+

Occurrence of HFT Lambda (Among Segregants)

Lambda Source

Parent Cell	K-12	gal_1^-	gal_2^-	gal_3^-	gal_4^-				
gal_1^-	0/4		<table border="1" style="display: inline-table;"> <tr> <td>1/5 gal_1^-</td> <td>HFT</td> </tr> <tr> <td>2/4 gal_1^-</td> <td>HFT</td> </tr> </table>	1/5 gal_1^-	HFT	2/4 gal_1^-	HFT	not done	not done stable (+)
1/5 gal_1^-	HFT								
2/4 gal_1^-	HFT								
gal_2^-	0/4	not done one untbl. + HFT		not done	not done				
gal_3^-	not done	stable (+) not done	stable (+) not done		not done				
gal_4^- hp^s	0/4	not done stable (+)	0/16 gal_4^- gal_1^- not done	not done					
hp^+	not done	not done stable (+)	<table border="1" style="display: inline-table;"> <tr> <td>1/15 gal_4^-</td> <td></td> </tr> <tr> <td>gal_2^-</td> <td>not done</td> </tr> </table>	1/15 gal_4^-		gal_2^-	not done	not done	
1/15 gal_4^-									
gal_2^-	not done								
hp^r	not possible	not done stable (+)	not possible	not done					

Previously unstable (+) from 518 t K-12

750 t 1821 (gal_1^- transd by gal_4^-)

1436 t K-12 (gal_4^- t K-12)

7/16/53 Thursday

IGNORE

I guess
this
game - other
evidence indicates
2281 not gold -
but for

214

2257 - test crosses to examine its authenticity as gal₂

1. X750 on EMS gal

7.	1	285
2.	0	357
3.	3	505
4.	0	453
5.	0	355
	4	1957

2. X811 on EMS gal

7.	0	167
2.	0	148
3.	0	215
4.	0	270
5.	0	229
	0	1039

3. X2281 (in gal₂ - Lp⁺)

7. 1/4 of 10 plate counts = 342 = 1368 / plate x 5 plate = 6840
3(+) colonies observed

$$1957 \overline{) 4.000} \\ \underline{3914} \\ 860$$

9/1/53
10 plates - control ok

0.2% ← 2. 1/4 = 114 x 4 = 456 x 10 = 4560

4(+) / 6517 = 6517 $\overline{) 4.0000}$
39102

0.06%

Since both
give (+) and control
something coming with
cross 1? says no!

6840 $\overline{) 3.0000}$ = 0.044% recomb.
27360
26400
between 2 gal₂

Needs checking

2251 x 2281

9/10/53
10 plates - control ok

1. 1/4 = 111 x 4 = 964 x 10 = 9640

10/13/53
1/4 = 78 = 312 x 6 = 1872

1872
11512

7/19/53 Sunday

K-12 =
 750 = 750-2
 902 = 902 7/4
 811 = 811-2

TSD cell no. 5 is constant K-12

Aerated cultures used - 2 20ml overnight Peri. Growth re-adjusted
 in about 1.5ml. Dilutions made and plated with and without
 K-12 - (0.1ml + 0.1ml K-12)

Sol	Dilution	+K-12	control	Δ	/750	/902	/811	No. of cells/plate
	und.	12	0		3	82	8	3.6×10^9
0.3+0.3	1-2	plage omitted	0		1	74	9	1.8×10^9
0.2+0.6	1-4	16	2		4	117	7	9×10^8
0.1+0.7	1-8	46	1		3	106	9	4.5×10^8
(-2) 0.1+0.9	1-20	plage omitted	3		1	793	8	1.8×10^8
(+4) 0.1+0.9	1-40	43	1		4	plage omitted	6	9×10^7
(-4) 0.1+0.9	1-80	46	2		1	104	6	4.5×10^7
etc	1-200	plage omitted	1		4	85	6	1.8×10^7
"	1-400	28	3		2	90	7	9×10^6
"	1-800	18	1		1	69	3	4.5×10^6
"	1-2000	19	1		0	61	6	1.8×10^6

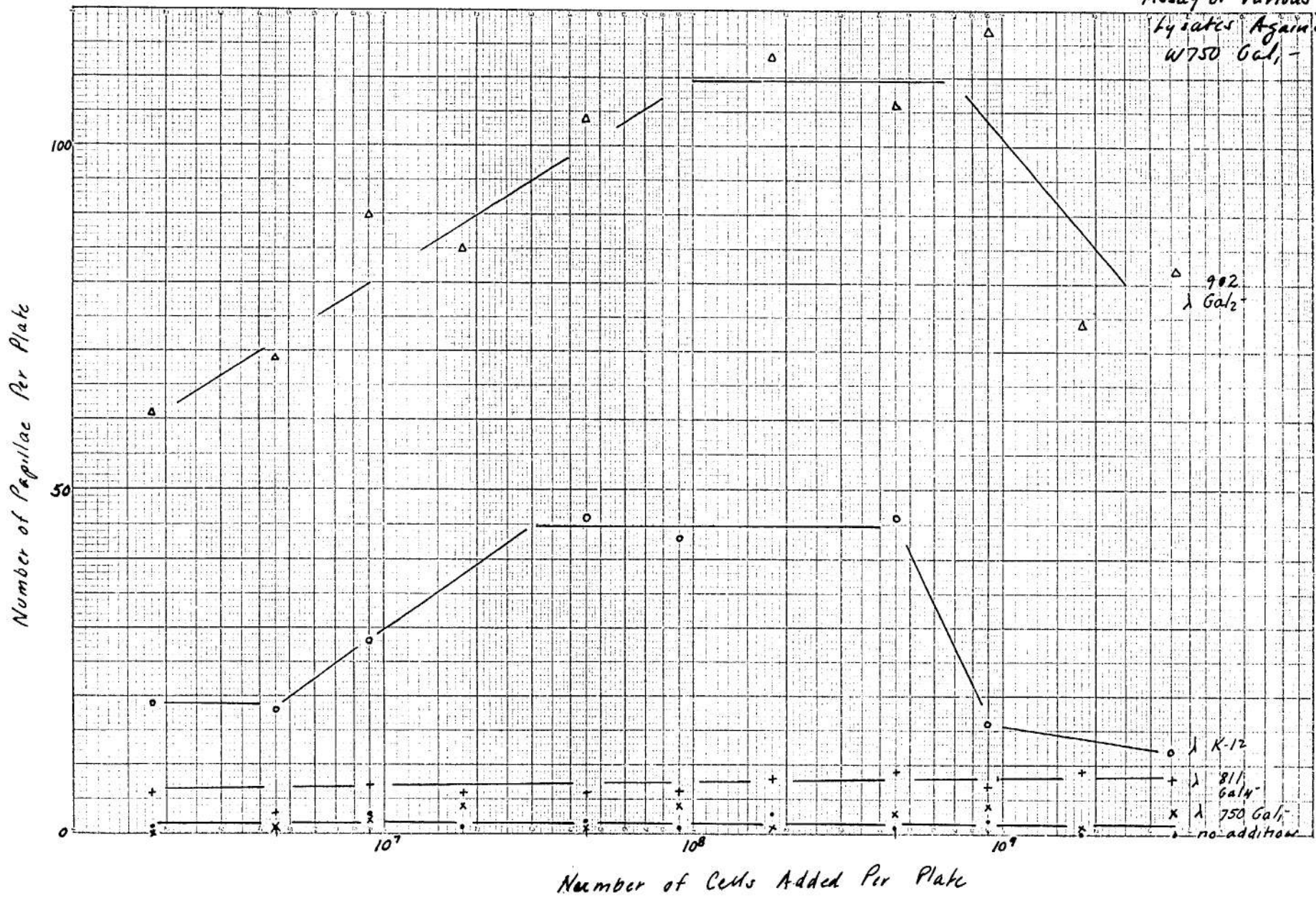
$1-200^3 \times 10^7$
 $1-2 \times 10^3 \times 10^7 \times 10^6$

0.1ml 1. 2003
 2. 1679
 3. 1850
5532
 3

$1844 \times 2 \times 10^7$
 $3688 \times 10^7 = 3.7 \times 10^{10}$ cells/ml



Assay of Various
lysozymes Against
W750 Gal₁ -



These segregants tested on two plates
by corn brushing against HFT 1

7/20/53 Monday.

Experiment X
Segregant

1924t K-12

(-) segregants tested / 518, N16

HFT gal₄ HFT gal₂

Segregant	518	N16	518
X 1	non-lysogenic	solid smears	no react.
2	"	"	"
3	"	"	"
4	"	"	"
5	"	"	"
6	"	"	"
7	"	"	"
8	"	"	"
9	"	"	"
10	"	"	"
11	"	"	"
12	"	"	"
13	"	"	"
14	"	"	"
15	lysogenic	"	"
16	non-lysogenic	"	"
17	"	"	"
18	"	"	"
19	"	"	"
20	"	"	"
21	"	"	"
22	"	"	"
23	"	"	"
24	"	"	"
25	"	"	"
26	"	"	"
27	"	"	"
28	"	"	"
29	"	"	"

lysogenic
non-lysogenic

lysogenic
* tp^r 29 gal^r

2/24/54

The original stocks
of this experiment
were lost by discard
A new set obtained
not tested - discarded
This data is not worth
saving

7/24/53 Friday - Effect of U.V. on HFT λ . N16 gal² used.

N16 lambda delisted 1-10 and irradiated for varying time intervals. 0.5ml removed and added to 10 ml pen on ay. brood - Assayed against various gal - tp. forms.

Time	Trail phase assay	air 1-10	1229	enlight	del 1-10	51F	plate	51F
0 min	del 10 ⁵ → 0.1 ml	2023			197, 120 = 1540			
1 "		428			164, 102 = 1330			
3 "		2264	.490		44, 15 = 290			
5 "	del 10 ³ → 0.1 ml	1444	.637		17, 18 = 180			
7 "		853	.591		3, 6 = 50			
9 "		509	.597		35, 17 = 27			
11 "	del 10 ¹ → 0.1 ml	331	.650		11, 6 = 8			
13 "		266	.807		0, 0			
15 "		54			0, 0			
17 "	und. → 0.1 ml	95						
19 "		10			1, 0			

1540 x 10⁻¹⁰ x 10 x 10 x 20
 308 x 10⁵ = 3.1 x 10⁷

2023 x 10 x 10 x 20 x 20
 4046 x 10⁴ = 4.1 x 10⁷

Transductions (Approximations)

Time	750	2280	2175	2281	811	518	1924	del
0	3648	6464	6	0 (200)	4800	50 (600)		1-20
1	4050	0.9000	6	0 (600)	8400			↓
3			7					1-10
5			5					↓
7			-					1-10
9			8			(2700)		= 1-2000
11			6	(300)		(160)		
13			10			960		
15			6	1234		72		
17			8	176		31		
19			3	81				

192 x 10⁵ = 1.92 x 10⁷

rig-hter 437 x 10 x 2000 x 10
 874 x 10⁵
 8.74 x 10⁷

TRANSDUCTIONS - RPT ASSAY 1-10 del. of above

Time	wood	plate	mit	910	176	plate	4736
0					(2368)		
1					5 (3088)		
3	2216	4296		3744	128 (2872)	580	4736 x 10 ⁴ = 4.7 x 10 ⁷
5		3344				2480	
7							
9							
11							
13							
15							
17							
19							

del = $\frac{1}{20} \times \frac{1}{10} \times 0.1 \text{ ml}$
 2268 x 10 x 10 x 20 x 10

Rot. Assay 1-10 dil of previous assay

Irrad.	750	2280	2291	578	811	1924	Plaque Assay 518	2.11 ⁴
0 blank	0	2		19	39	28	0	
0 (+λ)	146 96	197	Continued with (+)	36	114	96	437	8.74 X 10 ⁸ / ml irrad. tube
1	146	632		77	219	214	497	2.34 X 10 ⁶
3	334	632		148	671	438	149	2.98 X 10 ⁶
5	470	685		337	774	667	117	2.24 X 10 ⁵
7	595	569		385	922	660	33	6.5 X 10 ⁵
9	458	346		327	912	519	13	2.4 X 10 ⁵
11	403	246		258	634	489	2	1.1 X 10 ⁵
13	358	195		254	553	370	0	
15	226	98		201	394	321	0	
17	191	88		120	278	194	0	
19	87	42	107	217	139	0		

Corrected for blank

0	96	192	195	396
1	166	332	20 350	870
3	334	668	630	1260
5	470	940	683	1366
7	595	1190	567	1134
9	458	916	344	688
11	403	806	244	488
13	358	716	193	386
15	226	502	96	192
17	191	382	86	172
19	87	174	40	80

17	34	75	150
58	116	180	360
129	258	582	1164
318	636	732	1470
366	732	883	1766
308	616	873	1746
239	478	595	1190
235	470	514	1028
182	364	355	710
101	202	239	478
88	176	178	356

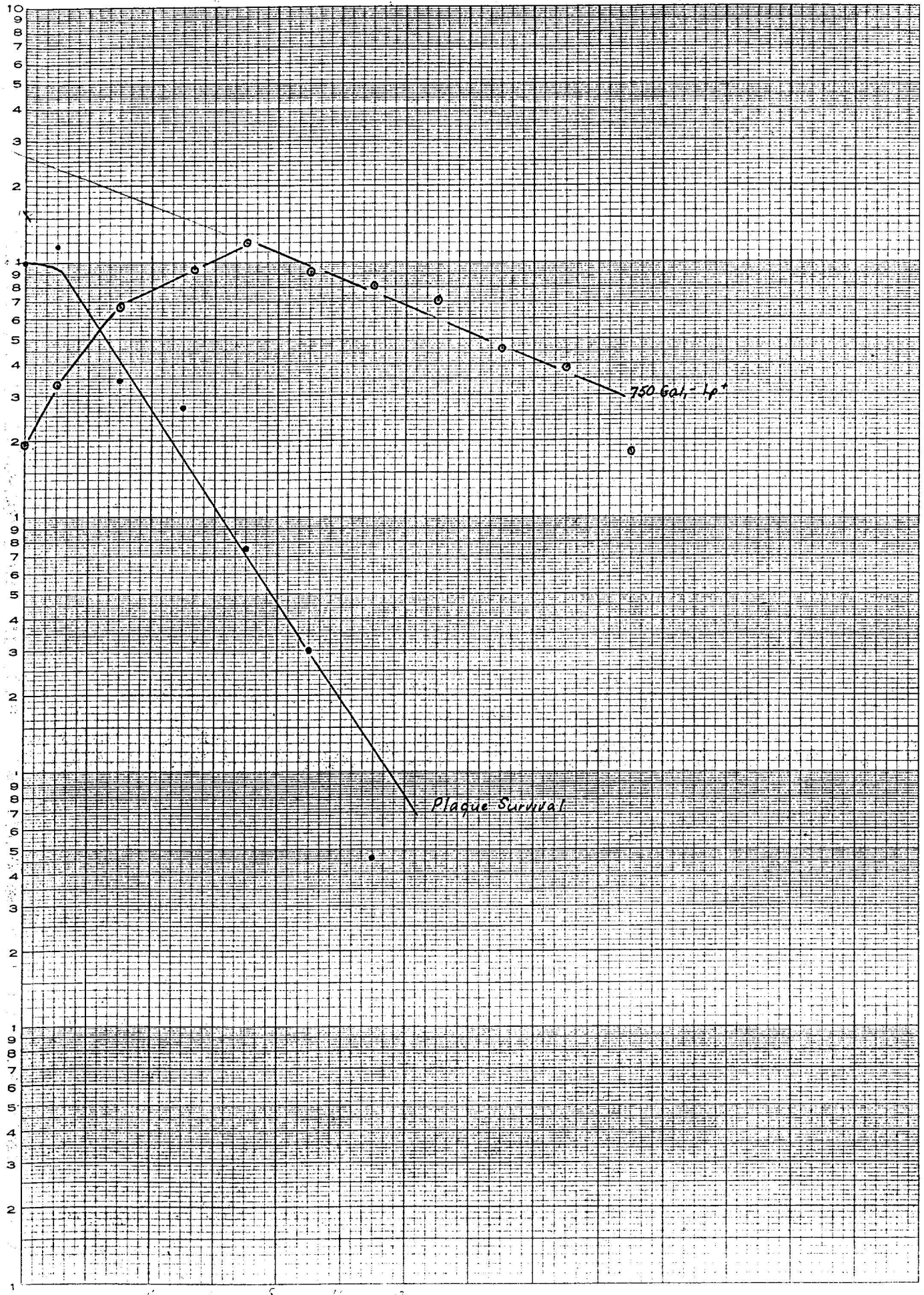
68	136	331,283 = 574
185	370	203,258 = 461
409	818	173,63 = 236
638	1276	32,37 = 69
631	1262	Total = 26
490	980	
460	920	
341	682	
292	584	
165	330	
110	220	

Assay 2281

Assay 2281

EUGENE DIETZEN CO.
MADE IN U. S. A.

NO. 340-LS12 DIETZEN GRAPH PAPER
SEMI-LOGARITHMIC
5 CYCLES X 12 DIVISIONS PER INCH



Inad. HFT 1 N16

7. Survival as Plaques	titer	N _s /N ₀	Pl. micro	
			750	2250
0	8.74 x 10 ⁶	1.0	1.0 ↓	1.0 ↓
7	7.94 x 10 ⁶	1.14	1.7 (3.3)	2.2 (5.6)
3	2.98 x 10 ⁶	0.341 ^{3.41 x 10⁻¹}	3.5 (6.7)	3.2 (2.5)
5	2.34 x 10 ⁶	0.268 ^{2.68 x 10⁻¹}	4.9 (9.4)	3.5 (13.7)
7	6.6 x 10 ⁵	0.078 ^{7.6 x 10⁻²}	6.2 (12)	2.9 (11.3)
9	2.6 x 10 ⁵	0.030 ^{3.0 x 10⁻²}	7.8 (9.2)	1.77 (6.9)
11	4 x 10 ⁴	0.0046 ^{4.6 x 10⁻²}	4.2 (8.1)	1.25 (4.9)
13			3.7 (7.1)	0.99 (3.1)
15			2.4 (4.6)	0.49 (1.4)
17			2.0 (3.8)	0.44 (1.2)
19			0.91 (1.8)	0.205 (0.80)