Tests on 276 crosses

1. Biotin + phage-resistance segregation.

Y411 x Y24. Plate 5. T-1

	T-1	T(0)	T(B)	
1	R	−	−	
2	S	−	+	
3	R	−	+	
4	S	−	+	
5	S	−	+	
6	S	−	+	
7	S	+	+	Prototroph
8	?	−	−	not coli

5R
15 S.

8 presumptive B⁻ in large tube

∴ 4 B⁻ out of 32 attempts.
This is not a random segregation.
284-1 + 284-3 maybe original mutants. see infra for determination

Streak out + test for biotin.

Plate 4 ~~T+~~ ~~T(0)~~ ~~T(B)~~ T-1 T(0) T(B)

	T-1	T(0)	T(B)	
21	+	+		
22	+	+		
23	+	+		
24.	+	+		
25	+	+		
26	+	+		
27	+	+		
28	−		+	
29	−		+	
30	+	+		
31	+	+		
32	+	+		
33	+	+		
34	+	+		
35	+	+		
36	+	+		
37	+	+		
38	−			+ Yeast? contamination
39	+	+		
40.	+	+		
41	+	+		
42	+	+		
43	+	+		
44	+	+		
45				

17 total

5R
15 S.

10.

Plate 3

15 total.

of 21 prototrophs, 5 [illegible] R

Biochemical recotypes.

TLB1 × BφC on B1φ. 19

	Plates T(B1)	Tubes T(B1)	Plates T(φ)	Tubes T(φ)	Plates T(B,φ)	Tubes T(B,φ)	
1	+	+	+	+	+	+	✓
2	+	+	+	+	+	+	
3	+	+	−	+	+	+	
4	+	+	+	+	+	+	−
5	+	+	−	+	+	+	
6	+	+	−	+	+	+	
7	+	+	+	+	+	+	−
8	+	+	+	+	+	+	−
9	+	+	+	+	+	+	
10	+	+	+	+	+	+	
11	+	+	−	+	+	+	
12	+	+	−	+	+	+	
13	+	+	−	+	+	+	
14	+	+	−	+	+	+	
15.	+	+	−	−	+	+	B1−

This is very suspicious. There should not be so many prototrophs per original plating data

on BT. 21

	B−	BT−	T−	
21	−	+	+	T−
22	−	+	+	T−
23	−	+	−	B−T−?
24	−	+	−	B−T−?
25	+	+	−	B
26	−	+	−	B−T−?
27	−	+	−	B−T−?
28	+	+	−	B−
29.	+	+	−	B−
[illegible]	−	+		B−T−?
[illegible]	−	+	+	T−

φT. 22

	Bφ−	BφT−	T−	
31	+	+	−	φ−
32	−	+	−	φ−T−?
33	+	+	−	φ−
34	+	±	−	φ−
35	+	+	−	φ−
36	+	+	−	φ−
37	+	+	−	φ−
38	+	+	−	φ−
39				
40				

Check [illegible]

	φ	T	φT.
32. large tubes	−	++	++

but came up late on T. streak out + test isolates.
↓
4 isolates behaved similarly

	B	T	BT
23	−	+	+
24	−	−	+
26	−	+	+
27	−	−	+
29	−	−	+

φ is just stim. or T → T+ very readily in this strain. Drop it.

~~286.~~ Filtrate - transformation.

N 25. Inoc YB ẽ 58-161.

Filtr Y41 culture in YB (from 283). Dil ca 1:3 ẽ YB. (1).

1. Inoc ẽ 1 ml 58-161. Sh. 30° 1P25.

2. Inoc YB ẽ 1 ml 58-161; 1 ml Y41 (culture above).

Plate 1P27. ca 200

Inoc YB ẽ Y41 P25. Filtr 1P27 & as above 1.

Inoc 58 161 1-7

Plate in T(o) 7P28.

(1).

7/26/46.

YB medium 1 ml each. Sh. 30° P26 - N28 Plate in T(0).

3. Y10 + Y24

10.

4. Y41 + Y24

300

5. Y41 + 161

100

6. Y41 + Y43 0. (K-12 + B/2)

48 hours. But not quite optimal numbers.

Sex - conditions

July 28. 1946

7P28. Inoc: a drop of mixture. Sh. 30°
– 1130 A 29.

			Growth	Clones ('/10 ml)
1.	Y24 + Y41	T(Ba)	++	36
2.	do.	YB	+Y	6
3.	Y24 + Y10	T(Ba)	++	0
4.		YB	+Y	150
BM+TL 5.	Y40 + 679-680	YB	+Y	33
	6. Y40 + Y45	YB	+Y	0
B⁻P⁻ TLB.	7 58-183x + Y10	YB	+Y	30

8 679-680 (tgt a 680).	—	in O	0
		in T	0
		in L	10

Plate 0.1 ml ÷ 1-7 into T(0). 8 into O, L, T.
Same water suspensions.

YB is OK but not entirely consistent from one culture to another

EG Y40+Y45 Should be repeated.

Strich out 679+680 and use thereafter as Y47.

Y9; Y44.

7/28/46

Test Y9m:

	24h.
MV	+++ +++
MV−yna	++ +++
M yna	− −
V	± +++
M	− −

Methionine may be mildly stimulatory as Roepke suggests it is in wild type.

Evidently Methionine + some vitamin may be needed. (choline?!)

Try series ± vit. left out.

TLM+Vits. 12h.

1.	− B_1	+
2	B_2	+
3	pab	−
4	niacin	+
5	folic	+
6	B_6	+
7	niacin	+
8	pant	+
9	inos	+
10	biotin	+
11.	+V+yna	+
12	TLM yna	−

Yne is a pab-less, thus, which is not completely replaced by methionine + yna. Compare Y44.

Y44: 8°25

	24h.	36h
H+10Vr pab (strain filtered).	+++	+++
+10V	+	+++

Linkage of Virus - Resistance.

8 PM. 7/28/46.

Plate. Incl 287-4 into (Shred in 1/.02 V4 in cold)

				Δ over 0.	Δ/0	Look for
1.	0	30, 25, 26	Average: 27			
2	B	28, 33, 30	30	3	.1	R
3	ϕ	38 35	37	10	.3	R
4	C	29	29	2	.1	R
5	P	[redacted], 150, 136.	143	116	4.0	S
6	T	50 52	51.	24.	1.0	S

Summarily one might think: T^- unlinked
P^- linked either to B, ϕ, or C.

B, ϕ, C also linked to each other. Need better data. Analyze phage linkages. Test for resistance to T-1 + test biochemical req. of those unl.

P30.

		# tested	# resist	fraction.	Calc R in mutant.	
1.	0	27.	2	.075		
2	B	23	5	.22	>0	Check R. $2B^-$ $3B^+$
3	ϕ	30	0	.00	0	
4	C	15	0	.00	0	
Mm 5	P	43	32	.75	.98	Check S. ✓ $8P^- 2P^+$
6	T	26	8	.31.	.5	Check S, R. ✓

5 T^- S
4 T^- R,
10 T^+ [redacted] S
1 T^+ R,

7/29/46.

M28 Incr 50 ml coli → : D3, D14. Sh. 30°.

Irradiate each 1, 2, 5 mins ē u-v in quartz tube.

Incr 1 ml into coli → sh 30°; .1 ml into → plates. Cover.

		Surv.	
A. D3	1 min	—	++
	2 min	10^3	
	5 min	10	
B D14	1 min		++
	2 min	10^5	
	5 min.		

Use D3 1 min. D14 2 min.

Cyst Mix Pour detection plates in T (CN) at 10^{-8} dilution 6 P 30.

D3 – 12 × 40 = ca 500 colonies. 1 small colony.

D14 – 12 × 9 = ca 100 colonies 1 small colony.

Plates contam. do not pick.

7/30/46.

Going over old stocks, select all available which tested + or minimal (for parent) but which were picked from small colonies. Determine inheritance of this characteristic

A. 58-series. # P29. Inoc 50 ml coli ✗ c̄ stock. S6. 30°

1. 172-1	ng	
2 172-25	ng	
3 172-13		
4 172-32	ng	
11. 6303	* >> col.	
12 6321	large + small colonies on T(0).	1/500 sm. colony on layering.
13 6325	" "	none on layering
14 6323	[>> colonies on T(0).	Do not repeat.]
15 6319	ng	
16 58	*	
17 6320	0	Numerous colonies appeared 10 Pl.
18 6329	ng	

\# Plated too heavily

Δ Layer. 3 Pl.

→ auxanograph.

Y10/1 × Y24.
TLB₁R₁ BΦC

1 drop ea. 4B sl. 30° 7P 30.

Used ~~[illegible]~~ cc in 1-7
• Rcc elsewhere.

Wash and plate:
Calc. type/cc 22 ~~BΦT~~

1.	O	46, 47, 64.	52	*	23	BΦT	12	17
2.	B	70, 66	16	*	24	BΦL	13	33
3	Φ	49, 61.	3		25	BΦB₁	14 v. many small.	—
4	C	22+.., 31+.,			26	BCT	11	
5	T }1	28+32 = 60	8		27	BCL	10	
6	L }1	44+44 = 88.	36		28	BCB₁	13	
7	B₁ }1	94+70: (164)	112	*	29	BTL	73 [41]	302.
*8	BΦ	9	4	*	30	BTB₁	39	52
9	BC	7	0		31	BB₁~~L~~	41	—
10	BT	6	0		32	ΦCT	5	
11	BL	12	0		33	ΦCL	5	
12	BB₁	19	0		34	ΦCB₁	14	
13	ΦC	5	0	* comp?	35	ΦTL	56 + 144 sm.	158
14	ΦT	3	0	20.	36	ΦTB₁	20	—
15	ΦL	10	0		37	ΦLB₁	43	—
* 16	ΦB₁	23	104		38	CTL	39	
17	CT	11 (+)	0		39	CTB₁	30	
18	CL	10	0		40	BΦTL	56.	—
19	CB₁	12	0		41	BΦTB₁	28	—
*phage. 20	TL	35 +	196		42	BΦLB₁	53	—
*ph. 21	TB₁	22	82		43	BCTL	60. [24].	
*ph. 22	LB₁	46	350		44	BCTB₁	28	
					45	BCLB₁	41	—
					46	ΦCTL	23 (incl. 6 small)	
					47	ΦCTB₁	26	
					48	ΦCLB₁	41	

680 – mutants.

August 1, 1946

Irradiate 36 hr. culture of 679 + - 680 u.v. quartz tube, 2 mins. 1P1
Incor 1 ml into colicin. (YB)
N 2. Detection plates.

Pick 8 colonies:

	T(0)	HC	V
1	+		
2	+		
3	+		
4	+		
5	+		
6	–	+	+
7	+		
8	+		

Phages T2 – T7.

August 1, 1946

Received, possibly contam., A 31 c titres ca 10^9.

Incr 1 ml ea. + 1 ml K-12 culture into YB flasks. sh. 30° 1130 P31–

Centrifuge off cells + sterile filter.

Plaque out T7 + T3 on K-12 and on B/r deriv. at dil. 10^{-4}, 10^{-7}.

A1. T-3, T-7 clear; others turbid (secondary growth?)
Filter T-3, T-4.

Repeat with others. v. q.

Plate T3, T7 of above c mutants for resistance. (titer?)

T3 Y40 c do many resist. T7. not mixed well: no lysis?
Y41 good lysis on most of plate " " ; lysis; resistants in no comm
161 do.
Y10. N. G.

Culture phages c B/1. A2. + K12 in liquid.

3½ h:

Filter	T2	K-12 ± ✓	B. ±
Filter.	3	±	—
	4	∓	T?
	5		T+
	6	F	T
	7	T	—

High titres developed, but activity seems to be lost after filtration esp. T2 which leaves no resistants. T6 could not be developed. Titers of other phages not consistent

Redevelop T7 on K-12.

2 7'

Incr K, B c culture 1P2

Tests on 290 - Various R-linkage

See 290. August 1, 1946.

A. from 290-2. (on B) test 5 R.

	T(0)
1	+
2	+
3	+
4	−
5	−

B. From 290-5 (on P). test 20 s.

	T(0)	
	1	−
	2	− ✓ not B-.
	3	+
	4	−
	5	−
2+	6	−
2−	7	−
✓OK	8	−
	9	+
	10	−
	11	+
	12	+
	13	+
	14	+
	15	+
	16	+
	17	−
	18	−
	19	−
	20.	−

C From 290-6 (on T) Test 10.

	T(0)	T-1
	1	+ S
	2	+ R
	3	+ S
	4	+ S
	5	+ S
	6	+ S
9−	7	+ S
11+	8	− S
OK.	9	− S
	10.	− R

Check:

7 +
8
9 ✓ T−S
13 ✓ T−S
15?

	T(0)	T-1
11	−	R
12	+	S
13	−	S
14	−	R
15	−	S
16	−	R
17	+	S
18	+	S
19	+	S
20.	+	S

[redacted]
T− S 5
T− R 4
P+ S 10
P+ R [redacted]
1

Analysis of 293: Y10/1 × Y24.

1. Phage resistance from O plates. T-1. 25/35 susc.
2. do. B plates. 6/20
3. do. L plates 6/10
4. do. B_1 plates ? smeared.
5. B ϕ. [Exp. 1:20].
6. B_1 ϕ [Exp. 2:3] 2 ++ 1 B_1^-
7. T-1 on TL, TB_1, LB_1
8. ~~23~~. B ϕ T [Exp. 1:6] 4 ++ 3 T-
9. B ϕ L [Exp. 1:3] 5 ++ (1 BL) = 297-9. R_1.
10. B T L [Exp. 1:2]
11. B T B_1 [Exp. 1:6] 3 ++ 1 T −
12. ϕ T L [Exp. 1:3]. 4 T-L- 2 T- 1 L-

Phage analyses: 297.

	Biochem.	T-1
1.	T−	R
2	T−	R
3	T−	S * ✓
4	T−L−	R
5	T−L−	R
6	T−L−	R
7	T−L−	R
8	T−	R
9	T−	S * ✓
10	L−	R.

Rechecks biochemical neg.

297 B, 12.

6 T−
25
4R.

11	B_1− ✓	S * ✓		
12	B_1−	S *	?	297-6, 11.
13	B−L− ✓	R *	297-9.	
14.	T−	S *		

T− S 3
R 4

Billing: K-12 on plates: u.v.

8 AUG 1946

Spread ca. 10^4 bacteria on surface of 8 plates.
Irradiate 0-120 secs. under lamp. @ 17cm.
Check on amt. lost to spreader.

fine · 30°

0
0'
0/100
0/100'
0
0, respread after 3h. incubation.

time:
5
10
20
30
40
50
60
80
100
120

Plates smeared + contaminated.

Repeat: 2P9. Count most plates for dup colonies. Use 2% agarbase. 58-161.

Use complete cultures 10^{-4} .1 ml

1. 10^{-6} .1ml 75,
residue on smearing rod: 0
2. 10^{-4} .1ml 0 +++ (compatible ē 7500)
3. 1 sec. ++
4. 2 sec ++
5. 5 sec. ca 200.
6. 10 sec. ca 10. (some may have been shielded by edge of plate).

$\frac{2}{75}$ = 2.7% / 5 sec.

$\frac{10}{7500}$ = .0013. / 10 sec.

5 secs is diff. to control. Use 10 secs. and a higher conc. back.

$(.027)^2 = .0007$

Proteus mutants

August 8, 1946.

Irradiate 1.5 mins. in quartz tube.
P 3, D14. Inoc 5 ml into 50 ml broth. 11P8.

Detection plates 2A11. in T/cyst; mic)

Picks 12 03, 10D14.

all grow on P(0) = [T + mic + cyst]

Y24 × Y10/1 ; ~~Y24~~ Y24/1 × Y10.

~~200~~
300.

8 AUG 19[illegible]

P8 mor. YB.

5PG plate into 0, etc. .5 ml

A

Y10/1 × Y24

	0	28	28.
	0	26	
	0	30	
	BT	30	
	BL	8T.	
	BB,	~~ca 100.~~ 82	
ϕT		34	
ϕL		16T.	
ϕB,		~~ca 100~~ 85.	

10/29 R_1 = .34

9+ T 1

9+ B_1 1

8+ ϕ 3

3+

9+ B_1 1

B

Y10 × Y24/1

0	35	
0	15	
0	27	
BT	56	
BL	5?	
BB,	ca. 100.	
ϕT	36	
ϕL	29	
ϕB,	ca 120.	

19/26. R_1 = .73

7+

3+ (BL) $1^{T\ 2}$ (300 - 4)

2+

Sample colonies + test for acetypes.

Associated Mutations
Reversion.

August 10, 1946.

P10. Incc 50 ml coli 0 ~ 679-880 / 4h. 30°.

P11 Wash & incc 5 ml into T(0) + NEAA + Vits + EAA −
Plate 1 ml into T(0), T(lc) T(thr)
a) leucine
b) threonine.

Plates: L. 22
T. 4
O. 0

Recotypes.

August 15, 1946.

Incr YB P12 plate M14. .3cc each.

1. Y24 x Y10/1 29/49 = ~~sus.~~ = 57%
2. Y24/1 x Y10
3. Y24/1 x 679-183
4. Y24/1 x 679-680.

301-1 "B,ϕ" — grew on B_1.
2 BB, " "
3 BB_1. " "
4 B_1C grew on C.
5 " " " "
6 BB_1 " "

301-1-3.

15	1. BϕTB_1 :	+ 6	ϕ B_1 6	(Bϕ 1) (BB 2)
15	2 CL :	+ 14	1 C (301-6)	
15	3. CB_1 :	+ 5	B_1 8	~~2~~ (B_1C) 2. 301-4,5
3	4. ϕL	+ 3		
5	5. ϕTL	+ 4	T_{R_1} 1	
7	6. BTL	+ 6	T 1	
15	7. BB, ϕ	+ 5	B_1 9 (BB_1) 1 (301-5)	
13	8 B_1 ϕT	+ 4	B_1 9.	
13	9. BB_1L.	+ 8	L 2 B_1 2 B_1L 1	
3	10 BB_1T	B_1 1	B 1 + 1	
15	11 Bϕ T.	+ 10	B 3 Bϕ 2	
15	12 Bϕ L.	+ 10	L 2 ϕ 1	
12	13. BϕB$_1$L	+ 8	B_1L 2 B 1	B_1 1

2. Minimal

3. 0 ~~BLϕ~~ ~~BCϕ~~ ~~BLD~~

4. 0 ~~BLϕ~~ ~~BCϕ~~ ~~BLD~~

Collect B_1 and test for R_1. ~~+2/11~~ ~~7/20~~ resistant !! from Y24 x 110/1 !
χ^2 = ca 2.

Collect ++ and examine for heterogamety. Select a ++ which appears to be recio but has, app., a recicative component. : 301-7.

Compare ♀ yields on plates where each mutant could emerge

See 305

These ratios mean little.

Summary	+	B_1	T	L	B	ϕ	C	B_1L	(BB_1)	Bϕ
	86	36	2	4	5	1	1	3	3	2
ratio to wild	1.	1	.06	.07	.09	.02	.05	.2	.1	.05
counted		37.	31	55	56	52	19	16	28	41
+ on av. plates	146	~~86~~	58	70	~~89~~					

Strains:

K-12		L15	6522	B/r	Proteus
58	679	148-334	Y1	B/1	(Dienes)
58-161 ✓	679-680 *	532-171	Y2	B	D3
58-278 *	679-680A	209-301	Y3	T	D14.
58-309	679-183 ✓	152-171	Y4	R	
58-336	679-440	558-228	Y5		
58-580 *	679-662 *	572-228	~~Y6~~	C	
58-593 *	~~679-680~~	1250-228		C-phage	
58-610 *	679-680-49 *	823-304.			
58-741	679-680-410 *				
58-2651					
3214					
3232		* 66-489 lys.			
3356		* 152-171 lys.			
4899 *		* 18-152-171-meth.			
5030					
5255					
5273					
5298					
5417 *					
5450					
5580					
5631					
5636 *					

58 Shigella paradysenteriae
6049 Debaryomyces vanrijiae
6177 Endomyces albicans
Y17 Endomyces fibuliger.
Y12 Schizosaccharomyces pombe (Wickerham)
Y15 S. pombe (Spiegelman).
Y16

Alkaligenes fecalis - Yale M. cf. 35 proteh.
Achromobacter aerogenes - Yale M cf 12. proteh.

* strains which adapt readily
" do not

Penicillin.

15 Aug.

Incr 2 drops Y40 into 5 ml YB contg: 2P15 30°

a 50 u/ml — 11P15, N16 - filaments; "zygosp" common.

b 100 Markedly inhibited.

c 150 Strongly inhibited.

d. 200 " "

penicillin.

Repeat:-

10P21.

1. Penicillin 2500 u. /50ml. + 1ml mor. Y10/1. Sh. 30°

4P22. Filaments + beaded [redacted] rods. V. rare "zygosp."

4P21. Incr 1ml Y10/1 into YB 50 ml Sh. 30°

Salmonella stocks.

August 20, 1946.

Received from P+S diagnostic labs. to fresh slants

						12 h:	EN	NV	EV	ENV
EN	S1	para A	(I) II, XII	a			+	−	−	+
E	S2	para B	(I) IV (V)	b	1, 2		+	±	+	+
E	S3	cholerae suis	VI, VII	(c)	1, 5		+	−	+	++
E	S4	" "					+	−	+	+
E	S5	enteritidis	I, IX, XII	g, m			+	±	+	+
E	S6	"					++	±	++	±
E	S7	oranienburg	VI, VII	m, t			++	+	++	+
E, N	S8	montevideo	VI, VII	g, m, s			++	+	+	+
E, N	S9	newport	VI, VIII	e, h.	1, 2, 3		++	±	+	+
E, N.	S10	"					++	±	++	++
EN	S11.	typhimurium	(I) IV (V)	(i)	1, 2, 3		[illegible]	+	+	+++
							+++	+	+	+++

24 hour readings:

		R −V	B −E	RS −N	RAB −O		
E	1	+	−	+	+	para A	methionine, tryptophane — any single no.
	2	+	+	+	+		
E	3	+	±	+	+	cholera suis	++ on EAA; ~~[illegible]~~
E	4	+	±	+	+	cholera suis.	methionine
	5	+	+	+	+		
	6	+	+	+	+		
	7	+	+	+	+		
	8	+	+	+	+		
aggl	9	+	+	+	+		
	10	+	+	+	+		
	11	+	+	+	+		

S pullorum stocks - see infra. as above in analysis

Cross streak Salmonella pullorum, and S1, S4 c T1, T3, ...

Recombination E coli 304.

10PM. 8/26/46.

Sh. 30° YB. 1 ml incr.

(1) Y24/1 x Y10

(2) Y24/1 x Y101 No colonies!!

(3) Y24/1 x 679-68C

(4) Y24 x Y1C 20/20 susc.

(1) Plate 5P28. (1/2 ml.) Examine P30.

1	0	52
2	0	51
3	B,	211
4	B,	~~125~~ (1/2 but smeared)
5	BΦ	TB,
6	BΦ	LB, very crowded.
7	BΦ	TL
8	BC	LB, very crowded
9	BC	TL turbid.
10	BC	TB, ~~EE~~
11	ΦC	TB, Too turbid.
12	ΦC	TL too turbid
13	ΦC	LB, too [illegible]

(3) 359 This run may have many T- revertants.

371	Test 50 isolates on T(0). Keep inoc. tubes in cold for ν.	78	++
423		2	?—
		Check	++

304-3A
-3B

cystine contains too much B, B, etc. evidently.

data:

Plates.	Colony types:
BØTB,	15 + 6 Ø 5 B, 2BØR 1B.! 1B?
BØLB,	none taken
BØTL	20 + 4 Ø 1 BØR 1? ~~1? BØL~~ ~~1? BØT~~ ØL? BØ?
BCTB,	5 + 3 B, ~~1 B,B?~~ 1 B,T? R. ∴ mucotype.

+ 27/37 R. 8/9 R.B,. 10/10 R Ø

Imixed (304-1) See 305

40+	1 B	1 ~~B B,~~
10 Ø	3 BØR	
9 B,	1 B,T	
(8 B,R; 1 B,S)		

304-1 · streaked out + test:

10/10 S!!

ØL: app. OK but checked in detail. same growth as Ø alone!

Analysis of 301-7

P30 - streak out and test colonies for T1 resistance.

1/15 resistant ① → 20/20 R.
1 abnormal + colonies in zone of streak. ② → 1/10 R. (streak out.)
= 26.

a. Streak out ① + ②

Test with seg. of several types.

1.	①	++
2.	②	++
3.	S	++
4.	S	++
5.	S	++
6.	S.	++

2' = resistant component of 2. (Later 1 - slow on -C ?) ++

a: test (a'1) + (a'2) colonies for resistance:
Compare 304-1.

2b. all resistant.

∴ 301-7 is evidently a mixture of R + S, 1/10 colonies from which was also contaminated.

Salmonella pullorum
leucine-less mutant.

10 SEP 1946

48 hour S12 in YB. Br. 1 ml-eq. in:
1. T(0) — no colonies
2. T(L) — not turbid!

Later found needs cystine

Strains for linkage study.

September 4, 1946, ff.

The 6 C_2 combinations of B, B_1, T, L are available. Streak out on NSA plates and incubate single colonies into 50 ml YB. Incubate to CC density for inocula to confirm growth factor requirements. Incubate with excess T1, T3 in NSA plates for virus resistant mutants.

	Sources:		Nutr. Req.	Virus.		✓
Mut.	"TL"	679-680		S_1	S_3	Y30
Recomb?	"TB_1"	304.	H.g. T−	R_1	S_3	Y31
Recomb	"BL"	300-1.	✓	R_1	S_3	Y32
Recomb	"BT"	285-24	✓	S_1	S_3	Y33
	"BB_1"	301-2	✓	S_1	S_3	Y34
Rev.	"LB_1"	[redacted] Y45.		S_1	S_3	[redacted]

Use vacant Y numbers.

BB_1
- 1
- 11 R
- 13 M

BT
- 11 S
- 13 M

BL
- 11
- 13 R, S.

TL
- 11 M
- 13 M

LB_1
- 11 R
- 13 R

Strains used

Shift. mutations.

8 SEP 1946

Recd. from Roepke + Langham:

α 15L-171 lys
β 18-15L-171 meth.
(γ) 66-489 lys.

According to covering letter, α: 5 single colony isolations
β: 1 isolation away from α.

"a single colony culture of α contains a few cells which require methionine."

Test α and β on:

		lys	meth	lys+meth.	O
1A8.					
6P.	α	+++	−	+++	
1A10		+++	++	+++	−
6R.	β	−	−	−	
		+	+	+++	−

Reversion Y10.

308

8 SEP 1946

Normal 36hr. Y10 into

	colonies (48h.)
1. O	—
2. B_1	—
3. T.	1-(cont? — tabcont+test)
4. L	—
5 B_1 T	—
6 B_1 L	—
7 TL.	—

no reversions! (viability?)