F^x x ♀ 1201

DATE: 11/18/54. REF: 196

W2206M1 Re-inoculated and checked by EML. Mass culture is F+. Use overnight mainly 1:2 both 9^50 – 11^25 Then

2 ml W2401: 0.1 ml W2206M1: 7 ml Penassay 37° 11:25 AM.

A. Streak out at time of setup (11:50 AM) } single colonies from EMBlac
B. " " " " Conclusion (12^52 AM) } and pools of 10
C. Single cell clones (v.i.) 1-24 ♀♀ 31-41 ♂♂.

♂.♀

	C		C
A1-2-3	1-2	E1-2-3	37-14-15
A4-~~5~~ Φ sip	3	E4-~~5~~-6-D6	38- -16-13
B 1-2	4	F1-2-Φ	17-18-
C1-2-~~3~~	7-8-	F4-5-6	20-21-39
C 4-~~5~~-6	34- -9	G ~~1~~-~~2~~	
D 1-2-3	35-10-11	G 4-5-6	40-22-23
D4-5-F3	36-12-19	~~H1~~	
B 4-5-6	5-6-33	H4-5	41-24

Then to EML. controls (1-), 2401

O = F+ by EML test
— = —

Note B above in EMBlac sm
No SR+

ca Jan 10, suspended coli isolations to cope
with Salmonella hangovers in re
B.A.D.S. draft mss.

Summary - Exps. & TCN diploids.

1202
5

DATE: Jan. 4, 1955.

REF:

1	2	3	4	5	6	7	8	9	10

(1) MLM tested segregants I gave him from IV-2 and VII-94 by preparing lysates. I also gave him 3-144, but this scores as not being full Cal- (modifies!)

JAN 16 1955

20

30

40

50

Review TCN diploids 1202
1

DATE: 11/20/54. REF:

(1)

3-22 (W 2406 × W583) given as Gal v Mal − S^S Xyl v (Ara v)
4785^R Lac v

ess. ara − c some clacking + few papillae

To check Ara v, and if so, confirm Gal quality (see over)

For clack 4367

7-294 (2406 × 945) Gal₂ + Mal + Ara v. Xyl − Mtl + Lac v
3-148 Gal₇ + Mal + Xyl v Lac v Mtl + or v? send to Clack!

4-2 Gal₇ = Xyl − Lac v Gal − (to confirm Gal character).
4-76 Gal₇ = Xyl v Lac v mostly − Gal −
7B-94 Gal₇ v Lac v Mal − Xyl −

stated

H346 Lac v Mal v S v (Gal etc +) maybe Hfr v ? G + S^S automist or segregants.
(W1895 × W1590)

H351-5 Lac v Gal₁ + (Hfr ?) Mal, S + or − 1470 M-Lac, − SR v, ^ Hfr

	Lac v	Mal	S	Gal +
1	✓	−	S	✓
2	✓	−	S	Gal +
3	✓	+	R	Gal +
4 mostly	✓	−	S	Gal +
5	✓	+	R ?	Gal +

and streaks also → Preliminary trial × W2401, no SR + but culture was largely segregated.

Remark: interesting diploids in D(Lac) [initiate roller for₂ aeration!]

∴ H351-5 check out OK. Need to be tested as possible Hfr. Most auxotrophic segregants should be OK. Restreak single colonies. Note: SR's maybe more encouraging as paratypic!

Hfr for 1, ✓

note again correlation of Gal_7^{+} / Mal+ !

3-22 Repeat Lac$\underline{V}$ are pure Ara- !

4 papillae seen on original streak — mucoid, non segr.

probably contam. Check on Mal, : Ara+ prove Mal+ muc

Ara- Mal-

3-72 is Ara-

H351. May be either Hfr/F- or Hfr/- or F-/-.

(1) test segregants - mud auxotrophs.

(2) test diploid itself. It is Lac$\underline{V}$ Mal- S^R prototroph.

a) If $S^{R/S}$ are formed, these are phenotypically S^S. N.G.

b) Try for Mal+ prototroph × Mal+ auxotroph!

DATE: REF:

	1	2	3	4	5	6	7	8	9	10

H351-5 repeats

11/24 (1) Mal⁻'s are revertible, occ. papillae in thick streak.

H351X W2401 papillae on thick streak (EMBLacsm) and ca. 1% SR+ / was largely segregated at time of plating

H352, X } no SR+ also φ plaques. Streak out as A.
H354X }

(2) H346. EMBLac mostly ⊙, some ● and O
on EMBLacsm, mostly O, a few ⊙ (maybe autonuts, prototrophic. Spot some from each on EMB to look for S^s or X^- diploids.

(3) Replate both cultures of H351, H353, H355 for segregants.

11/26. Notes: 3-11 seems Gal+, Rev possible Gal v.
3-14V seems Gal+/slow " " .
Replate

H352 (EML)(1×28) - Lac⁻ segregants (microscopically) clearly motile Lac⁺ apparently non-motile with occasional exceptional cells (ca 10^{-6}). In motility agar 4 Lac⁺ and 1 Lac⁻ each gave clusters or tracks, then isolated swarms. Reisolates were pure as mor. except 1 stated Lac⁺ now pure⁻. (Probably reflects polygenic control of motility). line-1 parent may have been poorly motile to start also.

DATE: REF: 11/20/54

H351 - segregants: almost all prototrophs by replication. Pool auxotrophs for repurif + crossing tests.

also check possible SR or auxotrophic diploid & haploid from H352, H355. same still in works

H355 2 Lac - 6 Lac + } all Mal - SR. Pool +, - for crossing tests.
1202B1 1202B2

H346/EMB lac sm: Same Lac ⊙ sm pilard + tested.
Disregard prototrophs; leaves 5 Mal -, auxotrophic. Restrick to recover Lac v, if possible. (mid rather to test Mal+ S^s segregants ~~for lac~~ Hfr!)

11/29. ① Now available Lac +/- auxotrophs from ~~[illegible]~~ H352+5

② H346 SR auxotrophic Mal - dipl (2 isolates = 1202C1-2)

③ 3-M4 has some modified Gal - ; 3-~~M4~~ 11 is pure Gal + !

④

Replate H351 and check for crossability

H346 plating: Pick Mal + and - to Lac.
11/28 - 8 Mal - : 7 Lac - 1 Lac +/- (segregating ? replate)
16 Mal + : 6 Lac +
10 Lac -
} ✓ prototrophy.

1202
Cbd. 4

DATE: 4/28/54. REF:

Segregant crosses
H355 : Lac-, + = B1-B2 resp. } x W2401
H352: B3-B4

and H351 x

(all crosses are 1 or .5 ml each parent + 2401 or 4177) in 7 ml Pm. 2:00 pm.

12/7/54. Recap. (Not all protocols recorded).

H351 x W1177 } → ca < 1% SR+.
x W2401
control N.G.

∴ This is or carries Hfr beyond doubt.
(should also check for F+)
(H351 = Lac U Mal-S^S ...)
(Regrow W1177 colonies 1202D from SM plate, restreak on EMBMtl for purity + ✓).
and continue to look for segregants.

♂ x ♀ 1203

DATE: 11/20/54 REF: 197

Cross 1:1:7 1^{10} – 2^{20} Then setup.

all parental except #3 (Loc ± S^R ...); all MXM – Ara – or ♂

∴ Save

Late cross somewhat hasty manip. notions

See protocols for other pairs.

S.S. A4 10 → 1 ... A4 (42)

↓ 0 A5 (3)

0 A6 (4)

3: Loc ± S^R Ara – MXM – Gal – (purity not checked)

4: Loc – ...

42: Loc + Gal – ...

Viability very high!

♀ complete : 12

♀ incomplete : 3

15

only 1 zygote

Yields:

A1 sip

B1

C1

D1

E1

F1 sap

G1

A4 H1

B4

C4

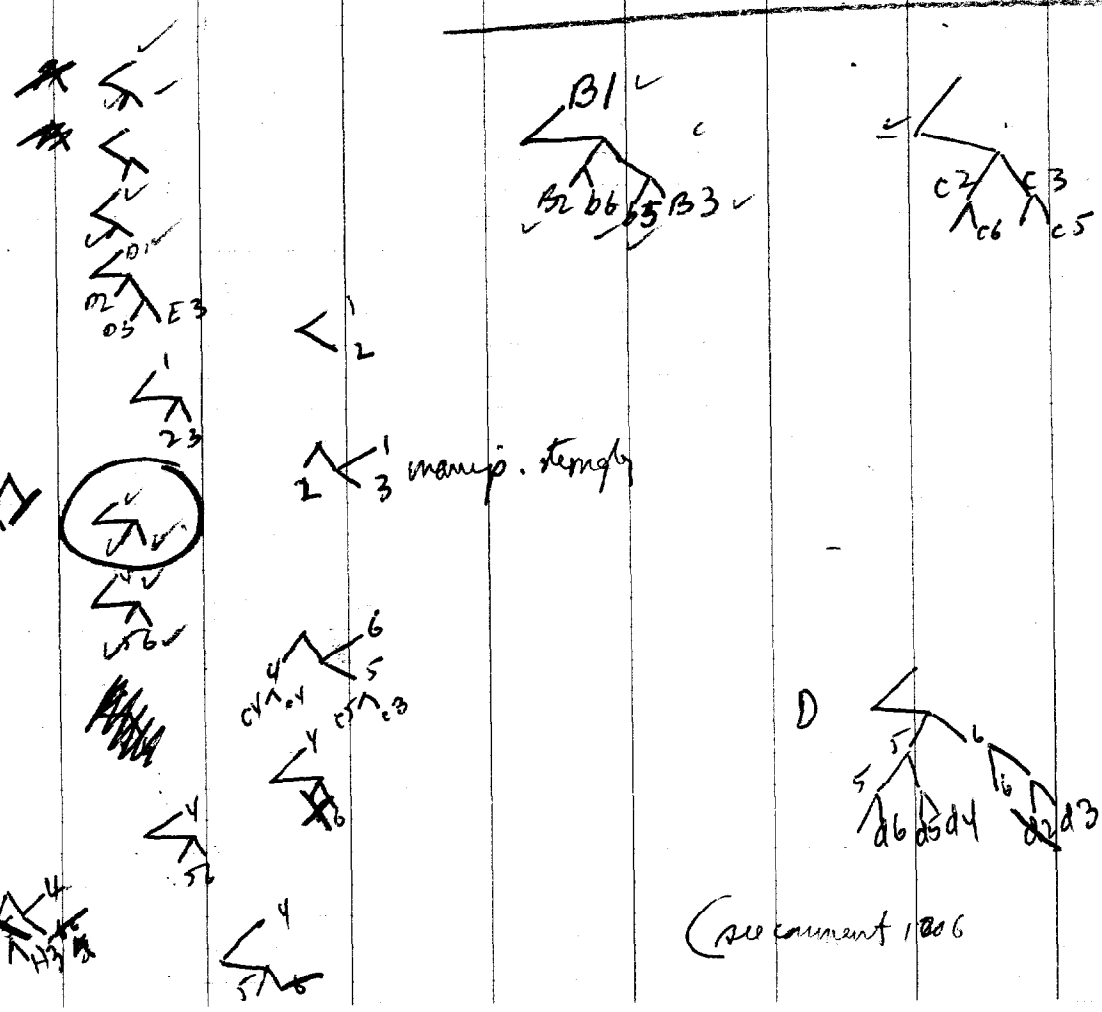
D4

E4

F4 sip

G4 sap

H4 leg?



(see comment 1206

See next page

	♂	♀	
A1	×	×	
A4	✓	✓p	
~~B1~~	~~✓~~		conf.
B4	✓	✓	
C1	✓	✓	
C4	✓	✓p	
D1	✓	✓p	✓ Lac, Ara
E1	✓	✓	
F1	✓	✓	
G1	✓	✓	
H1	×	✓p.	

✓✓ 5
✓✓p 4

9

× ✓ 1
× × 1

11

116 3C7 × C3 (♀ × ♂)
Casual.

1204

DATE: Dec. 2, 1952 REF: 202

all parental on Lac+ sm, Gal, M×M except D3(18) = Ara+ M×M − Lac± S^R
(B2 orig. given as is ♂ combin. Check motility; not ✓; no record of separation). ♀
all Gal+ checked for purity.

D3: — ♀ → (11) 0 0
D1 D2 D3
♂ X (2) ♀

Pedigree unfortunately incomplete.

(also demonstr. for Dolzhansky & procedure generally rather hasty & distractive)
Cons. manipul. to separate in time.

Check all ♀♀ for presence of Gal −.

Yield:

A1 sip
A4 4 sm 6
B1 ? 1 (♀) 2 (♂)
B4 4 5
C1 1 2 3
C4 5 4
D1 1 3
E1 1 2 3
F1 1 2
G1 1 2
H1 1 2 3

mixed X

♀ complete: ~~B1?~~ B4 C1 E1 F1 G1 } 0
♀ incomplete: A4 C4 D1 H1 } 1 / 9
Inviable ♀♀: A1

Low yield! again. May likely be due to haste in manipulation in sequences of last several weeks. Compare pedigrees!

Thesis 1204 from protocols

1~~225~~ - summary there may be inconsist. As I read protocols (focussing on persistent pairs)

	♀	♂
A1	×	×
C1	✓	✓
C4	×?	✓
A4	✓p	✓
-B1 -	×?	✓ . .
B4	✓	✓
D1	✓p	✓
-E1 - mixed not sgn. -		
F1	✓	✓
G1	✓p	✓
H1	✓	×

∴ complete < ♀✓ 3
♀✓p 3

6

no ♀ 2

no ♂ or ♀ 1

9

Z =

compare prev.

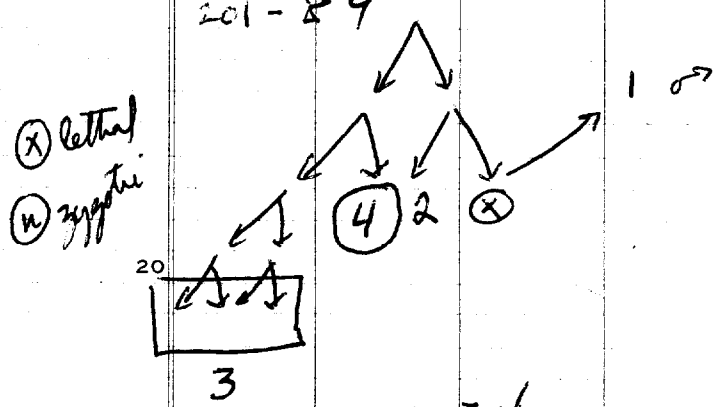
DATE: Dec 6, 1954 REF: /201-203/

This pair used in recent experiments as 1) pretested fertile sibs and 2) for possible selection of potentiality of Gal paratypes.

Protocols do ~~not~~ give timing of cultures, probably mixed early, about 10:10 AM by DCG during class. Isolations were begun at 11:10 AM, therefore quite fresh. Cultures also presumably overnight. Isolations completed 12N.

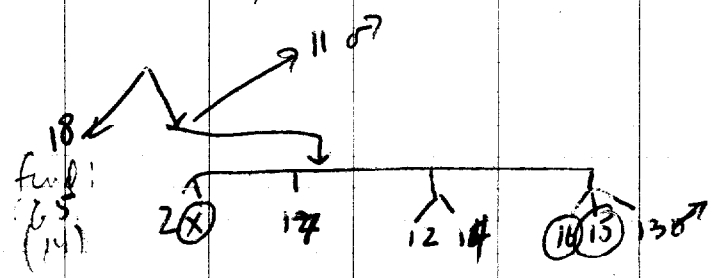
Yields low (o/3 complete; 2/6 incomplete) (3 illegitimate!) 2/9 total. See protocols for details. Successful (productive pairs) saved as:

201-E4



all others parental
Lac ± sm, Gal, M, X, M, Ara
(4) = Lac+/- Ara+/- V1 R

201-G4



(15) = Lac+/- Ara- S
(16) appears mixture of ♂, ♀ not technically accounted for but this is a poor pedigree (R+/S-) unless order confused

201-16 is a puzzle. Not fully analyzed but contains motile and non motile elements; Lac+/-; Gal+/- and seems surely a mixture. It is impossible to be ~~[illegible]~~ certain whether this is an artifact; until a pedigree can be obtained from such an individual, it must be left in doubt, even though there have been no excuses for it.

Ara, V1: streaked out cultures but not analyzed in detail for the present.

1205

~~16 put. initials~~ ~~3 ill~~ → 13

~~♀ see in 9~~

	♂	♀	
A1	✓	✓p	
A4	x	✓	
B1	✓	✓	
~~B4~~			ill.
C1	✓	✓p	
C4	✓	✓	
E4	✓	✓	✓ Arg+
D1	✓	✓	
~~D4~~			ng.
E1	✓	✓p	
E4	✓	✓	
~~F1~~			~~ill~~
~~G1~~			~~λ not pair~~
G4	✗	✓	(R)
H1	✓	x	
H4	✓	x	

12 total pairs coll.

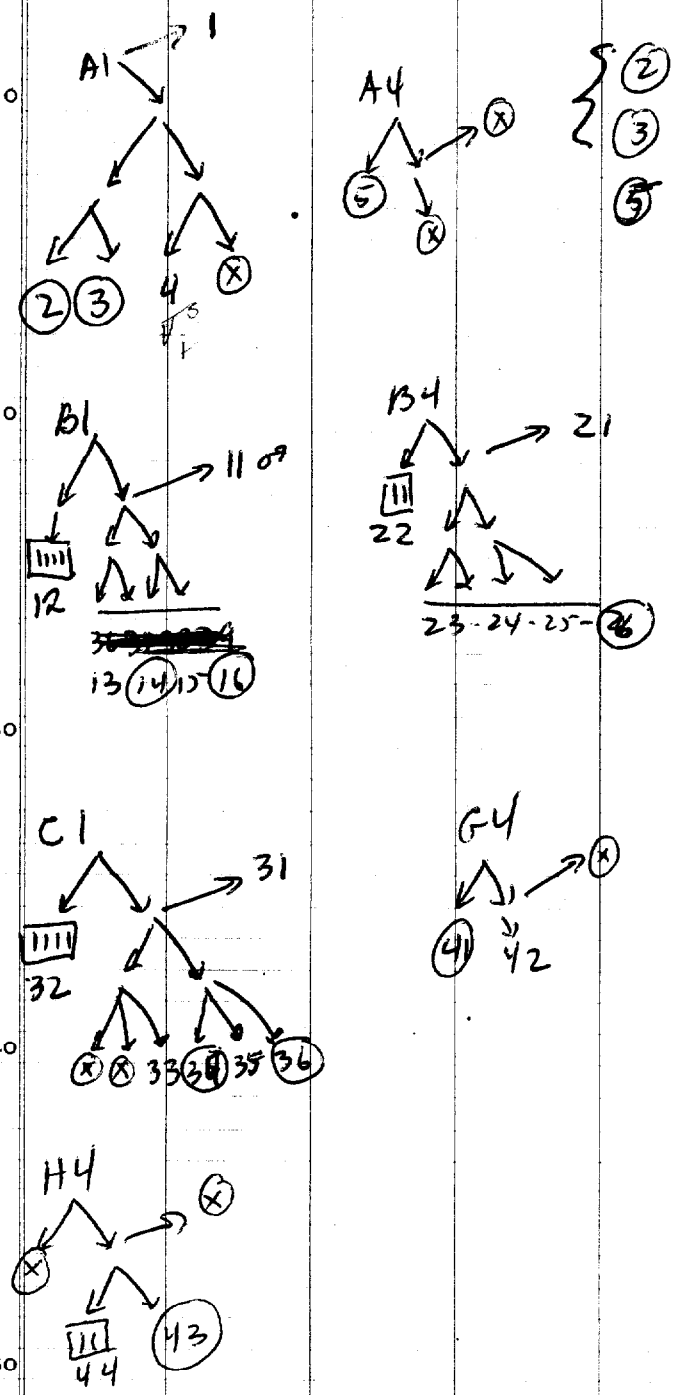
♀ + ♂ :	8	1(R)
♀ no ♂	2	1(R)
♂ no ♀	2	
	12	

n DATE: Dec. 7, 1954 REF: [redacted]-204/-205

Note, use old suspensions to start cross (cf. 1205, day before)
No record of timing, presume around 90 minutes. Note very favorable yields here.
Yields (3/5 complete; 4/7 inc) 7/12 total! See protocols for full details.
Coverglasses of 1206 and 1205 were held over for isolations and scoring together.

Productive pedigrees, as saved:

All parental Lac ± Sm ~~M,M,M~~ Mal, Xyl, MH Gal Ara except:



V_1

(2) = Lac+/- Ara+/- R
(3) = Lac+/- Ara- S
(5) = Lac+/- Ara- S

(14) = Lac+/- Ara+ R
(16) = Lac+/- Ara+ R
(26) = Lac+/- Ara- S

(34) = Lac+/- Ara+ R
(36) = Lac+/- Ara+ R
(41) = Lac+/- Ara- S
(43) = Lac+/- Ara- R/S

V_1-Ara linkage affirmed But full analysis held off.

interrupted in re NRC-COG meetings and reports, theses, etc. Resumed work ca 12/23.

♂ x ♀ 5 dwells. 1207

Dec. 21, 1954 - 206
Dec 22, 1954 - 207

[206], [207]

♂. 1206. Use suspensions incubated P19.

	Loc	MXM	Stl	Aca	Gal	SM		206 Loc	MXM	Stl	Aca	Gal	SM	
207														
1	−	−	−	−	+	R−		+	−	?+ −	−	+	R+	A1
2	+					R+	A2	+			−		R+−	D1
3	−							+		−	−		R+−	F1
4	−							−			−		R−	
5	−							−			−		R	
6	−							−			+		R	A2
7	−							−			−		R	
8	−							−			−			
9	+			+		R+	C3	−			−			
10	−							−			−			
11	−							−			−			
12	−							−			−			
13	−							−			−			
14	−							−			−			
15	−							+			−		R+−	
16	−							−			−		R−	
17	+					R+	D5	±			−		R+	A5
18	−							+			−		R+	B5
19	−							+			−		R+	C5
20	−							+			−		R+	A6
21	+					R+	A6	+			−		R+	B6
22	−													
23	−													
24	− +					R−+	D6							
25	−													
26	−													
31-42 ♂♂	±	+	+	+	−	S	31-43	±	+	±	+	−	S	

3-4 may be mixed

Reciprocals - 1K Lac, Gal
24. V. Lac (41%)
Gave as MA.

31/may vary (8).

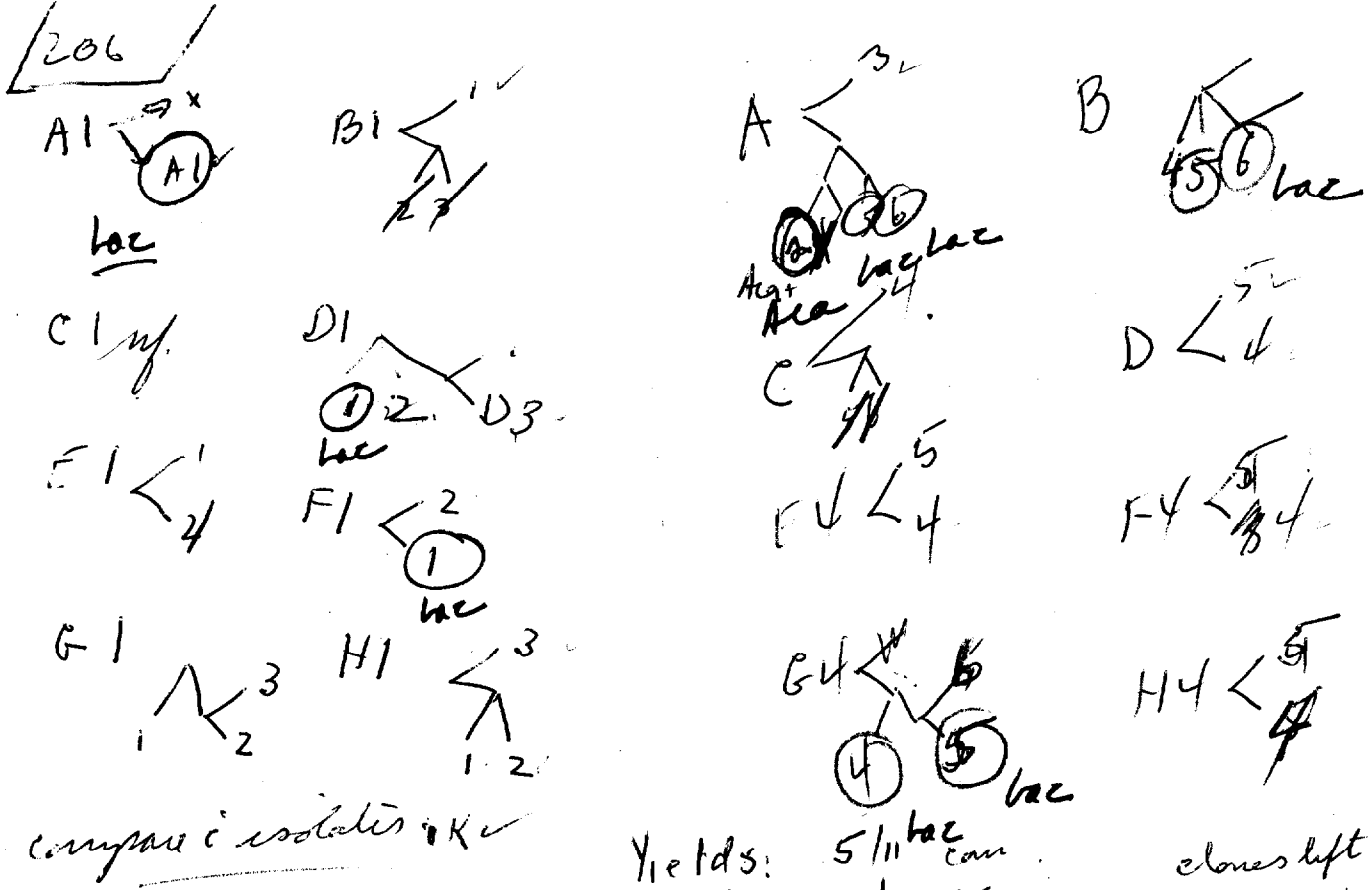
no

Yields 5/11 ; 5/11.

reciprocals sorted otherwise
serum −, +

su 1209

206

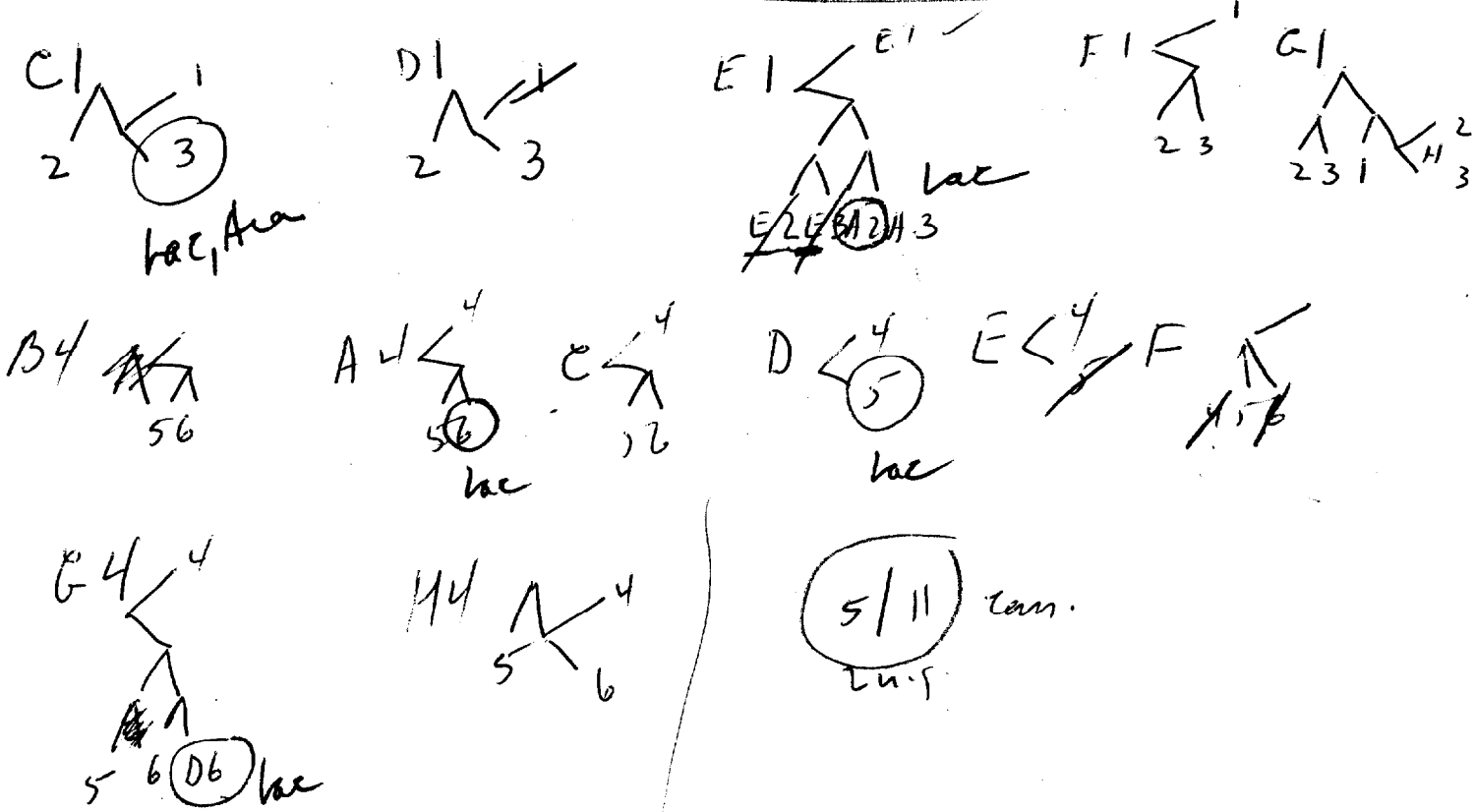


compare isolates

Yields: 5/11 lac can
1/1 man.
6/12

clones left alone

207



E1, G4 1/4 each.

DATE: Interesting pedigrees REF:

	1	2	3	4	5	6	7	8	9	10
206	A4	0 →	♂ 0 05 Lact 06 Lact 24 Anat	≮3/4!	B4 0 0	12 cells.		D1	♂ →	⊕ D1 bulk ≯160. D2 D3 ♂ ♀ sic
					1 loose B4	♀				
					0 →	B6 (n=3)	z.			
					100.	B5 (n=3,4)	z.			
					partly correlated		≮2/8.		unrelated	
	G4 0	→	160.	150 4	FRACTION UNKNOWN					
				0 → 5 → 6 ♂	≮2/16					
			partly correlated							
207	E1 10	→			G4. sic.				note C1	
		E2 3 A2 A3			0 D6 G6 G5				♀	⊗
	1/4.				1/4					

In practice, cannot rely on prolonged correlation of joined pairs c̄ fatalized subclone

Transmission of fragments.

1208

Hfr (Gal+ –x–) x F–(Gal–)
(W2730)

Dec. 21 ff. 1954

Objective: test for transmission of fragments

EML Gal+( ) –x W2344M1 (for Gal+ fragm/Gal2–.)
p.800:1-7 7 isolates.

Plan: a) SR+ crossing tests b) pedigree analysis of
(Gal+ –x♂) x W2405 (Gal4–).
+/Gal2–

A. In 1st prel. run, 800-1 x W2405 (24-48 h. cultures) (10:1 ratio ca 3 hours in Penassay)
12/21. cross
EMB Gal, Lac + >> –
Lac sm. No+ in 18 hours. Probable slow + thereafter.
after 36 h. some probable Lac± ∅

Parent: 800-1 is mostly Gal+ or Galv, ca 15% –.
∴ presumably still Hfr. (on Ara). No Lac++ or Gal+ SR
implies no transmission of fragment. of probably Lac "+" SR, {15 Ara+ / 13 Ara–}

B 12/23 as above, all 7 isolates, streak x on Gal sm. to screen.
x 4⁰⁵–5⁴⁵ PM
PM– all Gal SR.
N25– ditto. #1 on Lac sm. again shows SR weak +.
Conclude: at least #1 is certainly Hfr but is not transmitting the Gal fragment with appreciable frequency. Should be repeated under conditions selecting Gal+ prototrophs. Label 800-1 as W-2730

c). 4 papillae in thick streak of #1 above. (over)

D. Should check Gal character of recombinants above, but probably not best suited material if Md– Lp2 R±

c)

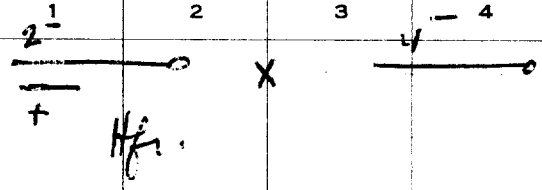
4 papillae streaked out, each gave Gal+. On repurification, 3 apparently segregating occasional (1-3) Gal−, # 4 pure Gal+. None were Lac+ (nor were crude papillae) and ∴ unlikely to be related to recombination. Might be direct transductions from sp. lysis of W2730 parent. In view of possible complications, abandon expt. (Save for test on Thal, Mal−, Arg. (stab?). Might still be done c prototroph selection and Lp^s ~~recipient~~ F−

Transmission of allotype fragment
Hfr × F prototrophs.

1208

DATE: 12/29/54. REF:

Design 2^- —o × 4^- —o
+
Hfr.



Isolate Gal+ prototrophs and, if segregating, determine whether they are 2^- or 4^-.

This will reveal correlation of segment when fragment is selected. Since the cross is so strongly orthotypic, recurrence of 2^- segregants will indicate close association.

E, F W2405 × W2730^E, W^{F}1895. (latter as control for paratype incidence). 1:1:7 ca 10AM – 5PM. Then plate 10^{-3} ml, 10^{-4}, 10^{-5} resp. on EMS Gal

A2: Fertility was very low – ca 1-2 per plate at 10^{-3}! probably low recombination of $M_1^- \times M_2^- H^-$.

A3 Use old susp. for inoculation, recross as above 9^{30} – 5^{10} PM
Wash, plate 0.1 ml samples on S Gal.

A5-6. Count E: 8 plates 12+/722 F: 3 plates 3+/204 (41, 75, 88)
(about 1/2 + are sectored)

→ (81, 73, 112, 95, 99, 89, 108, 75)

E1 both Gal ✓
E2 Lac+

F1, F2 } pure Gal+

test segregants

	Gal	Lac
3	+ −	+ −
5	✓?	+ ✓
6	+ −	−
7	+(−)	−
8	+ −	−
9	+ −	−
10	+ −	−
11	+ , −	−
12	+ −	−
4	n.g.	

Reduce 4 cols: pure ++

3 +, +

Lac
or

∴ all pure + when purified.
5 maybe pure Gal +

Tests on segregants.

1208

DATE: REF:

		1	2	3	4	5	6	7	8	9	10
		Hft:	+	1	2⁻	4	diagnosis				
E1	1		+	+	+	−	all Gal$_4^-$	(ortho)			
	2		+	+	+	−					
	3		+	+	+	−					
E2	1		+	+	−	+	all Gal$_2^-$	(para)			
	2		+	+	−	+					
	3		+	+	−	+					
	4		+	+	−	+					
	10		+	+	−	+					
	6		+	+	−	+					
leakback	3		+		−	+	2⁻				
	5		+		−	+	2⁻				
	6		+		−	+	2⁻				
	7		+		−	+	2⁻				
	8		+		−	+	2⁻				
	9		+		−	+	2⁻				
	10		+		+	−	4⁻				
	11		+		+	−	4⁻				
	12		+		+	−	4⁻				

should test for Hft!

(EML finds in a comparable situation

2⁻	4⁻	?
~~IIII~~ ~~IIII~~ 10	III	I
~~7~~	~~2~~	

∴ when fragment appears it is usually associated with parental locus (not always), i.e., fragment is "linked" to locus.

~~7~~ 2⁻ 4 4⁻

should cross × Lp^s to examine Lp situation of the fragment.

~~4-5 being checked~~

It remains possible that some 4⁻ are transductions.

Stl − of W2401.

1209

DATE: ~~Nov.~~ Dec. 28, 1954. REF: see 1207

also prob. temp. sens.

In tests for Stl reaction (see p. 1207) exconjugant clones varied.
On one plate, only 2 clones were negative, remaining ♀♀ being variable.
P27 restreak ♂, ♀, ~~FD~~ 206-11 and 206-12 on EMB Stl.

P28 ↙: ♂ is weak + ♀ is − (5) c̄ occasional + (6) or v colonies.

206-12 appears to be − (1)
206-11 is mostly − (2), has ± (3) and + (4) colonies!

B. P28 Restreak as indicated → ○ on Stl, Eler.

P29 all Eler+. though 1 and 5 are weaker.
On Stl: 1 and 2 are pure −
3 is −, + (still segregating?)
4 is +, − (" " ?)
5 is pure − (some spotting in thick portions)
6 is +, − may still be segregating!
Hold over weekend for further study: moc. small broths also.

~~A2: F~~

On replating from colonies, read by REW
~~#3~~ scored as − #4 as +, − #6 as + and −.

P3 Conclusion is that W2401 is a mixture of unstable + and more stable −. Time stock culture is predominantly Stl − while most clones from pairs in that experiment were v there may be some selective difference with reanalyzing. For further analysis, replate B5 and B6 broths; discard the others.

DATE: Jan 4, 1955 REF:

= C1 = W2401 pur. Stl⁻

P4: B5 now seems pure. save stock and replate
(1? colony on plate)

C) B6. 90+% Stl "+", remainder −.
Replate these = C2 = C3 = Stl⁻ "segregant"
= Stlv ✓

D) Selectivity? Streak out W2401 (D1) parent of cross this date, and also the cross on EMB lac sm, Stl. for later comparison of cross with parent (D2). D1 is ca 0.1% + D2 is mixed.

On testing SR+, 0/14 were Stl+, ∴ no evidence of selectivity. How account for [206]? Note [207] seemed all − while [207] was mostly +. Without ~~fut~~ further data, must assume that ♀ parent of [206] had simply accumulated high incidence of ~~...~~ Stlv type. But why would this not be apparent in [207] which was same susp. the next day?

A11 On replating, 9C1 shows ca .1% +. Reprep to test stability: C4 ✓ shows Stlv on two restreakings.

Conclusion: W2401 carries an Stl⁻ $\xrightarrow[\text{ca } 1/1000]{}$ Stlv $\xrightarrow[\text{ca } 20\%]{}$ Stl−

♂ × ♀ 12[10]

DATE: Jan 4 1955 REF 208 – 218

36 hour mor. 10:1: ~~#~~ 7 10[HY] – ca 12–12[30] total.

DCG pilot clones

Summary of results: (Tested on Lac±sm, Gal, MXM, ara, stl).

208: 21–31 are ♂, but 22, 31 probably mixed with ♀ (S[R] Gal[+]...)

1–13 all ♀ except: #7 Lac[+] (S[R]) #2 MXM+, ... Lac[−]

218: 1–20, 31 all ♀ exc: 3, 10, 20 Lac[+]...
+|−
: 21 ♂

Stl reactions parental (i.e., ♀♀ are – papillate) but 208–1, 12 and 218–19 are more strongly +! cf. with W2401.

Interesting pedigrees then are:

) = 208 –
— = 218

D4 – O → O O (1 1) D4 (28) ♂

g 1–4: 5, 10, x, 18

h 1–4: 6, 11, 15, 19

pure Lac[+]....

Note only 1/8 but g3 might have made 2.

No longer segregating.

C1 – O' → – O O → C1 (22) ♂ ♂+♀?

C2 (2) C1 (3) C2 x C3 x O'

Lac[−] MXM+ ♀ ... not!

save for later identity checks.

D1 × O → (111) x O

(1111) D2 (27) d6 ♂ 21 d5 20 D3 (7) d2 8 d3 14 d4 17 d1 3 Lac[+], −

Lac[+], − ← d5 D3 d2 d3 Lac[+]...

pedigree reconstructed. pure+

note ≮ 3/8 and not yet purified.

Yields:

(over)

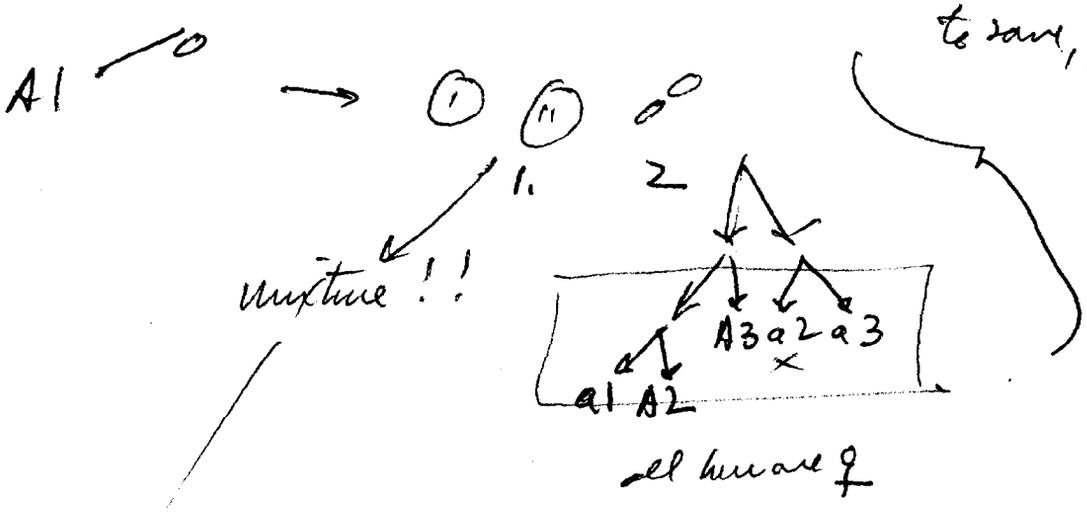
Mixed clones. In deeps,

218-31 is listed as N+M but ♀♀ only formed on plates.

208-22 (C1) listed as M, few cells. ♂ and ♀ app. form.

208-31 A1 is listed as N+M and behaves as mixture. This is not accountable in pedigree unless a cell was overlooked which is ~~not~~ neither likely nor incontrovertible.

to save, pool as A2.



1210 → B57.

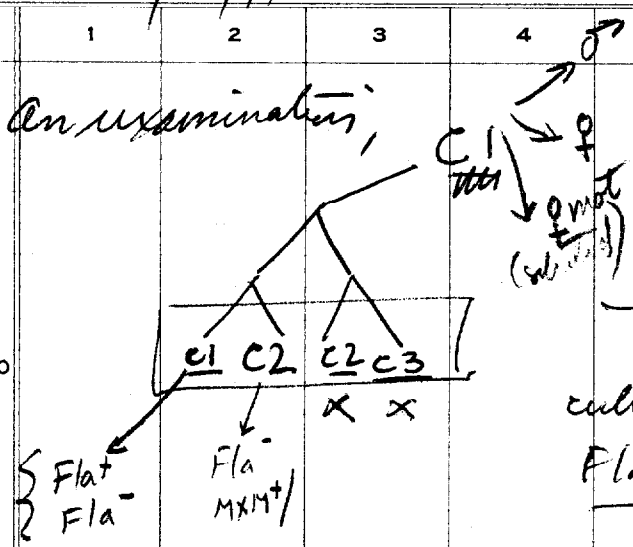
88	A	~~218C1~~	208C1
	B	~~208C2~~	208C2
	C	~~218~~	218 C1

presumably one of these cells was a motile ♀! (abortive phenotype?)

208-C1 analysis 1210
(motile recombinant) (W2732)

DATE: ~~[illegible]~~ 1/9/55. REF:

An examination,



C1 has ♀♀ marlous but some motile cells. Gal+, - mixed. ~~From sun may have some motile & maxture may mean merely that 2 cells of diff. kinds were inoculated.~~

C2 has (MXM)+. An reexamination of culture and in motility agar, no Fla+ were found. Pure Gal+ -

C2 and C3 were inviable. C3 was recorded as ♂? where ? may have been motile wg28. No record of separation.

218C1 is equally motile (in agar) ± from sun agar. ∴ probably all still S^R. ~~Also~~ also pure Gal+ ∴ Fla+... is presumably the only recombined character. Note: there was no suggestion that this cell was motile at time of isolation. Isolate W2732 from agar passage.

218C1 streaked on Gal EMB. >10 s.c., and gross streak: no motility seen when directly transferred. Inhibition by temperature ?, medium ?

pass single colony again through motility. Stock W2732 is selected for high motility, refer to $\boxed{218}$C1 for original

8 s.c. all motile (flares) in mot agar

208C1 is listed as ♂ + ♀. Look for ♀ Fla+ component via S^R selection, then mot agar. (Not seen in both directions)

rvr

218C1 Total of 28 colonies tested: (≐ W2732)
27 motile
1 nonmotile $\boxed{218\text{-}C1A}$

∴ still segregating

208C1 – from spot on lac sm, select through motility agar to recover a motile, Gal+ isolate.

Most colonies (e.g. from EMBGal Sm) are Fla⁻. Raises possibility: ① had been inoculated with ♂+ ♀ heterobarzotic for Fla⁺/Fla⁻ or ② new recombinations from ♂ × ♀ (This should be tried further.) or ③ ♂ × ♀ (motile chain?)

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motile isolated (see 1210B) save as $\boxed{208}$C1A.

1210B

DATE: JAN 13 1955 REF:

1 2 3 4 5 6 7 8 9 10

Earlier attempts (7/54) no motile SR recombinants were observed. In view of this last experiment, renew search.

P13 – inoculate motility tubes from 1108E plated on EMBlac sm. Heavy inocula. P15 Motility noticed in 2/10 tubes.

10

20

30

40

50

Hfr xF only

Isolations to 9/23

~~Isol. Intact~~

Isol.	Incl-	Zygotes
229	144	37

JAN 26 1955

1185	8	7	1	
1186	16	9	7	
1190	3	3	0	
1192				not clear
1200	"	"	2	
1201				
1203		14	1	
1204	10	9	1	
1205		9	2	
1206		12	7	
1207		12	6	
1210			3	

Incomplete 324; 230; 67

67/230 rough datum.