September 18, 1948.

(H x N)

(1) W477 x W351 (Lac-, Xyl-) (2). W477 x W466 (H x H)

(1). No yield! A few Lac- only! (2) v. low yield. Pick +'s & streak out on Lac EMB.

Following appear to be segregating. S.O. EMS Lac.

4 ✓

6 ?

10 ?

12 ?

13 ✓✓

16. ✓✓ = H50

Recover only 16, as the point is well proven with a single culture.

Also cf. H2 (W479 from 477 x 478).

Complementary heterozygotes
Continue 298.

Sept. 18, 1948.

32, 35, 36, 43

[H27 -, H28 -, H29 -, H30 +]

Pick destructive Mal type to ~~MalEMS~~ MalEMS, LacEMB.

	EMBlac	EMSMal.	
305-43.	++	— occ +	
H30	Segr.	+, occ —	Purify!
H29	Segr.	++	
-36.	++	—	Cosegregant!
H28	Segr	—	
-35	Segr.	—	No diffuence
H-27	Segr.	++	
-32	Segr.	++	No diffuence.

H27+28
Mal reactions
had evidently been
confused

Sept. 18, '48. 13.51

Streaked out on Lac EMS, varying lac conc. suspensions of 299- for normal, and 7, 29, 34 and 65 for heterozygotic Lac+ prototrophs.

Lac EMS.

1 —

2 Smooth, flat, uniform surface
small margin, not indented

3 sl. rough colony, rough but narrow
margin.

51 Large colonies like 3; smaller like 2

7 roughish colony, appr. rough margin

29 like 7, somewhat smoother

34 indistinguishable from 3.

65 like 7.

No more distinguishable, everything progressively more faded on lower concentrations of lactose (1/2% or 1/4%, .1%)

No consistent difference can be found between "normal" and heterozygous prototrophs in colony morphology on Lac EMS.

Sept. 21, 1948. Lac-!

(1) W477 x Y40 on Lac EMS.

(2) (W466 x W483) (5 ferm factors heterozygous?) on Lac EMS, also other sugars

1. Low yield. Lac+ colonies only noted. 50 colonies from 20 plates picked for streaking on EMB Lac. 26 tested all pure +.

2. Xyl 5 plates
1-
10-
2-
+, -? difficult to score on Xyl EMB.

1 stays +! = 308-2-5 Later 4 others.

Arab. 5 plates.

+	−
1	1
1	11
1	4
1	4
−	4
4.	24

(1-4)

S.O. plus on EMB Arab.

Gal 4 plates.

2+ mostly −. 6, 7, 8

Mal 6 plates. 9+

Lac 25 plates.
v. low yield all apparently scoring −! (Of course W466 is Lac,−!!)

1-4 Arabinose
5-9 Xylose
10, 11 Galactose
21-34 Maltose.

All ++.

Sept. 21, 1948 + prec.

Streak out 5 single van. colonies from 262-0. and isolate from each 1 pure - and 1 pure + for nutritional tests.

1-5 are - ; 11-15 correlated +'s.

1	MT	11	M(T)
2	MTL	12	MT
3	M B?	13	MT
4	TLB$_1$	14	MT
5	MTL	15	MT

Save 3 as B?M -

4 as TLB$_1$ -

11 as B?M -

Sept. 22

(1) W478 x W583 (2) W478 x W584. on Lac EMS.

Many Lac - colonies appeared in 20 hours on (2). Probably contaminants.

(2).

(1). ~~20~~ 34 tests. All Lac +. No variety.

multi factor heterozygotes

Sept 25, 1948

1. W477 x Y470.
2. W478 x W483 25 plates only 15 lac+ colonies + 2 Lac-.
3. W126 x W466 Mostly + colonies.
4. W126 x Y87 ca. ½% +; Pick 2

(1) 100+ colonies tested. None Lac heterozygotes (Recheck 13, 41).

(2). 15 tested. (9 maybe variegated. — H51.

(3). See 323.

(4). 2 tested. Both ++.

→ streak out on EMB media. Gal ++
Mal ++
Sucr ++
Xyl +/-
Lac +/-

→ Both are Lac heterozygotes. H68, 69.

Sept 30, 1948.

W583 × W478

92 Lac+ colonies streaked out on Lac EMB.

from 17., 53, 54, 48 Streaks thereon EMS Lac. as 1-4. and test on Lac, Xyl, Mal, Arab.

(4) not heterog. 1-3 OK. ~~H~~70 – ~~H~~72.

1 Mal – colony noted on 3. S.O. Lac EMS and Mal EMB.

Sept 25, 1948 ff.

See 313.

40 lac+ prototrophs tested from W126 (Lac$_4$-) x W466 (Lac$_1$-)
Most of these are clearly heterozygotic for lac as seen on lac EMB plates.
Pure ++ (?): 34. 19, 20 (unavailable). At least 36/40 = 90% are heterozygotic.

#3, 8, 25, 28, 40 seem predominantly + & only small - sectors.

11 has colonies & moderately dark centers, mostly light margins with v. dark sectors (lac$_1$ + lac$_4$ + ? combinants ?).

36 has - colonies & dark centers. } Pick single colonies from the
26 shows fairly typical sectoring. } EMB and streak out on EMB.

Save 1-10, 11, 25, 26, 28, 36, 40 for H-series. Streak out suspensions on EMB and EMB-Mal.

H- 52-67.

P2. 4+ colonies from each tested.
36: mostly -, frequent ⊛ types.
26. the same. No pure + noted. Probably all Lac$_1$- Lac$_4$+ / Lac$_1$+ Lac$_4$-