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V. 1-3 Yale 1946-1947.

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LYOPHILIZED STOCKS Sept. 9, 1947

E. coli K-12 & 58 derivatives:

K-12	wild	✓
58	desthiobiotin	✓
58-161	" - methionine	✓
-178	Y.E.	
-278	Ph. alanine	
-309	cystine	
-336	isoleucine	
-580	thiamin	
- 593	thiazole	
-610	thiazole	
-741	histidine	
-2651	proline	
-3214	proline	
-3232	"	
-3356	meth	
4447	?	
4899	ph. alanine	
5030	tyrosine	
5255	proline	
5273	adenine	✓
5298	indole	to Harris
5417	uracil	✓
5450	proline	
5580	A.A.	
5631	adenine, a guanine	✓
5636	indole	
5898	methionine	
6049	proline	
6177	"	
6313	threonine	
6314	Ph. alanine	
6317	proline (glut.)	

E. coli 679 and derivatives:

679	threonine
" 183	?
440	?
447	?
455	?
662	glutamic acid
680	?
684	?

E.coli Lampen strain 15 derivatives:

SALMONELLA

L-1			
L-2			
L-3	arginine	S1 paratyphi A	meth, tryp
L-4	meth.	S4 cholera suis	meth
L-5	threonine	S20 typhi murium	monophasic μ^+
L-6	proline	(IV? V? i..)	phase 1 +
L-7	lysine	S36 gallinarum	B1
15 L-171	"	Su S 37 dublin	B1
18-15 L 171	methionine	S42 paratyphi A	tryp
66-489	lysine	S45 enteritidis	ornithine
		S-50	
		S-51	
		S-52 paratyphi B	req?
		S55 cholerae suis	tryp+cysti
		S-56 " "	tyrosine, biotin
		S-61 typhimurium	IV variant
			meth
		S70 "	SH --SH

E.coli B ~~A1~~

A-1
A-2 (7-415)
B/R
-R
T

E.coli Yale mutants :

all Y-

ACETOBACTER

M.A. 11 series:

1	(ATCC 6522)	proline	a	M.A. 6.1 (".')	+
2	" "	meth. SA -resistant	11.2	90	serine or gly
3	(L-15)	leucine or isoleucine	.4	236	glycine
4	" "	" " "	.5	318	leuc
5	" "	" " "			
9		threonine, leucine, pab			
10		" " B1			
...	For continuation of this list, see Y list)				

PHAGE

BOIVAN C1
C2

T-1
T-3
T-4
T-5
T-6
T- 7

B. subtilis

hist

Phytomonas tumefaciens *

Proteus D

# 14			
# 3 :	- 38	-57	-63
	39	58	65
	40	61	66
	44	62	74

Staph. flavocyanae

Shigella Hu (Hutner) uracil

79-30-2 (Weil) Flexner V
66-1-410 " " II

available at Yale

STANFORD NEUROSPORA BIOCHEMICALS:

1A	+	33050	valine	A	
25a	+	33757	leuc	A,a	
193A	pab	3x "-4637	A		
299	sitophila: B6	-15300		A	
605a	serine	34486	chol.	a	
830A	pab	"-15300		a	
1090	sitoph: thiazole	-34508		A,a	
1298 A	uracil	-37401		A,a	
1633 A	pab	34547	tryp	A	
"-15300	A,a	35307	pab	A	
-4894	a pab-meth	35420	tryp	a	
3416a	nic	35810	isoleuc, val.	A	
4540A?	nic	36115	pab	A	
-10575	nic-tryp a	36607	tryp	a	
4545 A,a	lysine	36703	arg.	a	
"-5531	"-pan	37401	inos	A,a	
-15300	A,a -al	-5531		A,a	
-37401	A,a -inositol	"-15300		A	
4637 A,a	alb-1 (transl)	37803	B6		A
4711 a	isoleuc, & valine	37906	tryp		A
4894 a	meth.	37907	"		A
-15300A,a		38113	pab		A
-34608	A,a aurescent	38704	valine ?		A
-37401	a inos	38722	tryp		a
5359 A,a	pab	39113	nic		A
5531 A,a	pan	39115	tryp		A
-4540 A	n ic	39303	nic		a
-15300 a		39501-1452	val, tryp?		a
-37401 A		39701	tryp		A
5801 A	scumbo	39705	isoleuc, val		a
8839-4637A	leucine	39709-4637	" "		A
9185 A	B1	39801	tryp		a
10575 A	tryp	40008	"		A
-37401	"-mic	43302	nic		A
15300 A,a		44008	tryp		a
16117 A,a	isoleuc, val.	44008-65001	"		a
17084 a	pyrimidine & thiazole	44020	"		a
-37803 a	- B6	4420			
-44602 a	- "	44210	"		a
150 18558 A	thiazole	44602	B6		A
-34486	-choline	"-37401A,a			
21848 A	pab	44706	tryp		A
21850 A	"	44707	"		A
21863 A	proline	44801	nic		a
27947 a	arginine	44802	"		a
29997 a	"	45210	tryp		A
300 30300 a	"	45217	"		A
33026 a	valine	45219	"		a
		45302	"		a
		45303	"		a
		45304	"		a
		45503	"		a
		45			

Misc. Neurospora:

S6201 val ? A
~~XXXX~~ 25 * *
 Abbot 4 + A
 A" 12 + A
 Chilton + a
 sy. + A,a
 E 5297 a
 977 R L a
 N. sit: Sands PC A
 H.SS F.28 PG a
 56.7 PC a
 N. tetra. S9
 4545-5531-15300
 51602-4545-37401-15300
 " -5531- " "
 10575-37401-15300
 G 27 A al-pan-inos-B2-tryp
 G 37 a

New Yale mutants:

Y-14927 lys a
 -16050 col. A
 16059 lys A
 16424 aden a
 16329 pa alan A
 16349 cyst,meth a,A
 16351 aden, hypox. A
 163 67 cyst,meth A
 16479 pab A
 16446 inos A
 16603 meth, ~~xxxx~~ A
 16631 adenine A
 16744 meth A
 16470 leuc. A
 16641 meth A
 16695 pan A
 16644 A
 16747 meth A
 16730 aden, hypox A
 16796 pab

Penicillium

3169 proline
 4769 histidine
 6155 arginine
 6549 hist
 7286 unknown
 7288 "
 7307 hist
 9756 arg
 9929 prol
 10099 pa alan.
 10259 unknown
 10283 hist
 11117 "
 32044 unknown
 32179 arg
 40102 hist
 41272 arg
 47017 hist
 50265 isoleuc
 51775 c - m ? (i-v?)
 52204 pab
 52997 lys
 60297 choline
 69441 hist
 81414 "
 84248 unknown
~~xxxx~~
 84886 hist
~~85880~~ "
~~86k~~
 86842 "
~~89172~~ "
 96730 "
 97054 "

Absidia glauca (Giles)

1
 10 hist
 50 "
 1200
 167 †
 1571 pan-ye.
 1643 "-aden
 1891 "-
 2775 lys
 2790 hist
 2828 tryp
 196 pan

STANFORD / NEUROSPORA (con't)

46109	tryp	A
46404	"	a
46405	"	a
46406	"	A
46415	"	A
46423	isoleuc, val	A
46807	"	"
46808	"	a
47101	"	a
47203	trypto	A
47317	"	A
47711	i-v	a
47808	tryp?	a
48009	"	A
48306	"	A
48501	valine	A
48613	tryp	A
48614	"	A
48615	"	"
50005-5231	pyrim&thiaz.	a
51602	B2-temp	A, a
"-37401		A
56501	B1	a
55 65001	nic, tryp	a
65001-2198	?	A
-3416		A
65205	tryp	A
65612	"	"
66110	"	a
67601	val	A
70307	tryp	A
71103	isoleuc	A
71301	pab	a
75001	tryp	A, a
-39401		A
75102	"	a
80801	"	A
81001	"	a
85902	thiazole ?	A

YALE BIOCHEMICALS:

602	albino	a
1093	lys	A
1866	"	a
1870	"	a
1879	"	a
1937	YE	a
1943	YE	a
2170	al	A
2171	al	a
2198	tryp	a
2298	B6	?
2299	ye	a
2329	B6	a
2364	leucine	A
2492	ye	a

YALE BIOCHEMICALS:

2840	meth	A
2887	meth	a
3261	chol	a
3317	cyst/meth	A
3494	" & "	a
3522	meth	a
3786	hc	A
3791	meth or +	A?
4195	meth	a
4246	hc	A
4518	hc	
4617	hc	
4750	B1	A
4815	meth	a
4840	ye	A
4905	vit	a
4927	vit	a
5015	hc	
6073	meth	A
6279	"	a
6516	ye	A
6516	pab	a
6603	cyst, meth	A
7110	hc	
7142	xxe	
7548	vit, color	A
7582	lys	a
8228	al?	
8552	ye	a
10626	yx	a
10654	yx	a
12239	meth	
12504		
12964	yna	
14927	lys	
16329	Pa	A
16331	trypt	a
16424	aden	a
30005	'	
30010	?	
30013	?	
30017	?	
30251	?	

Misc. Neurospora :

S6201 val? A
 Abbot 4 + M A
 12 + A
 Chilton + a
 Sy F8 + isogen A,a
 E 5297 a
 977 R L a
 N.sit. Sands PC A
 HSSF . 28 =PC a
 56.7 PC a
 N. tetra S9 ?
 4545-5531-15300
 51602-4545-37401-15300
 " -5531- " "
 10575-37401 -15300
 G27 A al-pan-inos-B2-tryp
 G37a " " " " "

New Yale Mutants;

K
 14927 lys a
 16050 colonial A
 16059 lys A
 16424 aden a
 16329 ph.alan A
 16349 cyst, meth a,A
 16351 aden, hypox A
 16367 cyst, meth A
 16479 pab A
 16446 inos A
 16603 meth, cyst A
 16631 aden A
 16744 meth A
 16470 leuc A
 16641 meth
 16695 pan A
 16644 A
 16747 meth A
 16730 aden, hypox A
 16796 pab

Penicillium

3169	proline	41272	arg
4769	hist	47017	hist
6155	arg	50265	isoleuc
6549	hist	51775	c-m? (k-v)?
7286	unknown	52204	pab
7288	"	52997	lys
7307	hist	69297	choline
9756	arg	76	
9929	prol	69441	hist
10099	ph. alan.	81414	"
10259	unknown	84248	unknown
10283	hist	84886	hist
11117	"	85880	"
32044	unknown	86842	"
32179	lx arg	89172	"
40102	hist	96730	"
		97054	#

Absidia glauca (Giles)

1	+	2775	lys
196	pan	2790	hist
10	hist	2828	tryp
50	"		
1200			
167			
1571	pan-YE		
1643	" aden		
1891	"-?		
2728	lys		
2798			

YEAST

Eremothecium Ashbyii # 2
59

Sacch. cerevisiae (Lindegren)

93- 1 C	haploid	
Y-Yo (93-1C)	orig. biotin, pan, pab	33
"	x 5 r	40
	15	41
	19	42
	22	46
	24	50
	30	51
	35	52
	37	53
	39	54
	43	56
	48	57
	49	58
	115	64
	115	66
	122	75
	2	78
	5	79
	8	83
	26	90
	28	103
	29	108
	31	99 W
	125	99 R
	133	

Schizosaccharomyces Pombe (Wickerham)
" octosporus

Phycomyces +
4B

Summary of Y- stocks

* 51	274-4	Y39	UV	II	Histidine, serine
* 52	256-1	224-1	UV	II	Niacin (EMB)
* 53	335-2	Y10	UV	EMB-Lac	Lactose-negative; Threonin, leucine, B ₁
* 54	TRUFFERS 58-161		selection		penicillin-resistant (?)
* 55	Y40 X	Y53	recombination		lactose- prototroph
* 57	Y53		selection with T3 (sic)		resistant to T1, T3, T5 !
* 58-62	360		discarded		
* 63	discarded				
* 64	360	Y53	selection with T1		resistant to T1, T5
* 65	360	discarded; probably a contaminant			
* 66	360	Y53	selection with T3		resistant to T1, T3, T5 probably fallacious
* 67	360	Y53	selection with T7		mucoid; sensitive
* 68	366	58-161	UV	inspection	mucoid (no recomb: 414)
* 69	395	Y40	UV	inspection	mucoid
* 70	396	Y53	UV	inspection on EMB	less revertible at Lac- locus
* 71	396	Y53	UV	inspection	less revertible at Lac- locus
* 72	405-1	Y53 X Y40	recombination		B ₁ -Lac-V ₁ ^F
* 73	405-3	do.	do		B ₁ -Lac-V ₁ ^B
* 74	405-4	do.	do.		B ₁ -Lac+V ₁ ^B
* 75	405-2	discard			
* 76	-	Y53	spontaneous; selection		Lac-reverted
* 77	430	Y64	sp.	selection	resistant to malachite green 100u/ml
* 78	430	58-161	sp	selection	resistant to streptomycin, 5 u/ml
* 79	436	Y77	sp	sel	resist. brilliant green 50u/ml
* 80	434	Y40	HN2	sel on EMB	glycerol-negative
* 81	discard 436:glycerol enrichment				
* 82	443	Y53	sp	sel	resist streptothricin 5u
* 83	443	Y78	sp	sel	resist streptothricin 10 u
* 84	443	like 83			
* 85	Y40 X	Y53	recombination		B-Lac-V ^F
* 86	456	Y53	selection with T1		resist T1; T5 unstable mucoid
* 87	463	Y40	HN2	sel EMB	lactose-negative
* 88	466	Y53	sp	selection	resist to Chloroacetate 2 mg/ml
* 89	Y88 x	Y40	recombination		prototroph; Cla ^F
90	481	Y40	sel		resist iodoacetate Ia ^F
91	481	do. Y40	sel		Cla ^F
92	481	Y40	sel		resistant to azide (As ^F)
93	481	Y53	sel		Ia ^F
94	511	Y53	sel	T6	V ₆ ^F
95					
96	511	Y53	sel	T3	V ₃ ^B (also res. T4, T7, T6)
97	-	Y53	sp.	inspect	less revertible at Lac-
98		Y53	sel		V ₃ ^F (V ₆ ^B)
99		Y53	sel	(T1 + T6)	resist to T1; T5-sens.
100	521	Y53	sel	(T1:sm col)	do.
101	521	Y53 Y40	sel		V ₆ ^F (already res. T1, T5) [S.C.] X
102	521	Y53	sel	(T1+T4)	resist T1, T4... X

Aneutrophic Salmonellas

S type requirements

L 1 ✓	para A	methionine	tryptophane.	
4 ✓	cholerae suis	tryptophane	methionine	lost!
12 ✓	pullorum		leucine, cystine	
13 ✓			leucine, cystine	
14 ✓			leucine, methionine, cystine (arginine)	
15 ✓			leucine, SH	
16 ✓			leucine, cystine	
17 ✓			leucine, cystine	
L 36 ✓	gallinarum		thiamine	
L 37 ✓	dublin		thiamine	
L 42 ✓	para A.	typhi murium	tryptophane ✓	(uses indole; not anthran.)
45 ✓	enteritidis		ornithine	(uses arg; citr also)
50 ✓	para A		tryptophane	. BIOTIN;
L 52 -	para B			
L 55 ✓	cholerae suis		tyrosine ; (still cystine)	TRYPTOPHANE; cystine (adapts)
L 56 ✓	cholerae suis		tyrosine, OR BIOTIN!	
57 -	typhi suis			
53 -	abortus ovis			
59	sendai	_____	slow prototroph.	
60	sendai	_____	20.	
31 - 69.	typhi-murium		SE METHIONINE.	
51 ✓	para B		PROLINE	
L 70	typhi murium		SH.	u.v. mutant of S20.

also S20 = typhi-murium

Salmonella stales

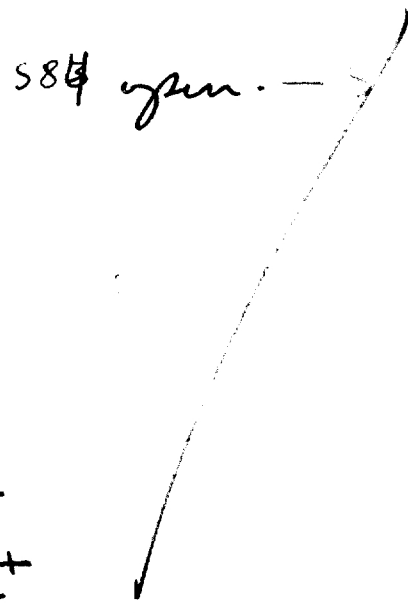
S	type	serotype	nutrition	
1	para A	I, II, XII a	-	* methionine, tryptophane
2	para B	I, IV, V b, 1, 2	+	-
3	leduensis	VI VII c, 1, 5	+	methionine.
4	"	"	-	
5	intitidis	I, IX, XII g, m	++	✓
6	"	"	++	✓
7	massachusetts	VI VII m, t	++	✓
8	montevideo	VI VII g, m, s	++	✓
9	newport	VI, VIII e, h	++	✓
10	"	"	++	✓
11	typhimur.	I, IV, V 1, 2, 3	++	✓
12	pullorum	"	-	E leucine, ^{cystine} isoleucine, histidine (meth.) LI# 4.9.
13	"	"	-	EN leucine, (arg., meth.,) cystine
14	"	"	-	EN leucine, arginine, methionine, (histidine) cyst.
15	"	IX, XII	-	E leucine, isoleucine, meth., hist. ✓ OK as leuc.
16	"	"	-	EN leucine; cystine
17	"	"	-	EN leucine (arg., meth.,) cystine (slow on LC)
18	aborus boris	II, XXIII b, enx	++	
19	"	"	++	
20	typhimur.	IV, V, c, 1, 2, 3	++	monophasic - phase 1
21	"	"	++	monophasic - phase 2.
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* + = phototroph.

SALMONELLA - "MUTANT" TYPES.

S	Ref.	"species"	
1	P+S	paratyphi A	methionine, tryptophane
4	P+S	cholerae	methionine
12	Reitger	pullorum	LEUCINE, ISOLEUCINE , HISTIDINE CYSTINE
13	"	"	LEUCINE, CYSTINE
14	"	"	LEUCINE, [ARGININE], METHIONINE, CYSTINE
15	"	"	LEUCINE, ≠S,
16	"	"	LEUCINE, CYSTINE
17	"	"	LEUCINE, CYSTINE

S	Ref.	"species"	
18	227	oraminburg	++
19	3575	oraminburg	±S ++
20	415	kentucky	++
21	421	typhi murium	++
22	3490	typhi murium	++
23	3542	typhi murium	++
24	422	abortus equi	++
25	426	newport	++
26	3491	newport	++
27	429	london	++
28	547	urbana	++
29	1681	budapest	++ R.
30	1916	inchness	++
31	1918	adekide	++
32	3486	montevideo	±S ++
33	3539	panama	++
34	3573	paratyphi	±S ++
35	3576	paratyphi	++
36	3045	gallinarum	→ - +late
37	1684	dublin	→ - +late
38	3481	newport	±S ++
Yale:			
39		typhi mur	++
40	28		++
41	27		++
42	32	para A.	-
43	25	intertextidis	++
44	23	"	++ +late
45	24	"	-
46		"	++
47	34	para A	++
48	33	"	++ R
49	18	"	++ R.
50	17	"	-
51	19	para B	±S ± V
52	20	"	-
53	21	"	++
54	22	"	++
55	31	cholerae	-
56	30		-



Thiamine
Thiamine. motile ✓

TRYPTOPHANE type corrected by Edward

ARGININE. ORNITHINE

Tyrosine;

[stim. but not ess.] ≠ cyst or meth (incl. SH)

Virus Strains

T-1. From Demerec.

- a. See 230 6/10/46. Found contaminated 7/14.
- b. Recover again from Demerec's suspension. Incubate @ 57°-183 °h., centrifuge and filter. Titer on Y9 = 16×10^6 Small + large plaques.
- c. Recover from lyophilization - excellent viability.

Substrains

679-680-A TL from Ryan, for better mutants (triple) 4/15/46.
Y10A Recisolate Y10 and test. (Separate from fluorescence conversion).

Y-40 = *S. servissae* - haploid clone from Lundquist -
Requires pat, pit, b, str. Use B(d).