

CHARACTERIS



Bacillariophyta

Bacillariophyceae

Coscinodiscophyceae

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PROVASOLI-GUILLARD CCMP#

Cell Length um

Cell Width um

Low Temp C

High Temp C

Initial Source

Habitat

Axenic

TOXIC

Culture Medium

FATTY ACIDS (%)

Saturated

Myristic 14:0

	<i>Cylindrotheca closterium</i>	<i>Navicula cf. perminuta</i>	<i>Nitzschia cf. ovalis</i>	<i>Phaeodactylum tricornutum</i>
CCMP#	340	1117	1118	633
Cell Length um	20-24	6-8	5-8	13-25
Cell Width um	3-4	4-5	3-4	3-5
Low Temp C	22	22	18	22
High Temp C	26	26	26	26
Initial Source	Sargasso Sea	Gulf of Maine	Baja Ca., Mexico	Mariana Is., Guam
Habitat	open ocean, 120 meter	Pidgeon Hill Bay	Magdalena Bay	near shore
Axenic	No	Yes	No	Yes
Culture Medium	L1+, f/2, f/20	f/2+10%NPM, f/2p, f/2	f/2:	f/2, f/2agar

5.0

CHARACTERISTICS OF PROSPECTIVE ALGAE

Chrysophyceae										
Chrysophyta										
<i>Stichococcus minor</i>	819	4-6	2-3	0	36	Caribbean Sea	Lagoon, Key Largo, FL.	No	f/2-si, f/2	
Trebouxiophyceae										
<i>Tetraselmis</i> sp.	929	6-7	5-7	22	26	Falmouth, Ma.	Oyster Pond	Yes	f/2-si, f/2agar	2.3
<i>cf_Pyramimonas</i> sp.	1239	5-10	4-6	22	26	La Jolla, Ca.	SIO pier	No	Prov100, Prov100 sloppy	
<i>Pycnococcus provasolii</i>	1203	2-4	2-4	22	26	North Atlantic	30 meter	Yes	f/2-si, K, ASP8a,	
<i>Nephroselmis pyriformis</i>	549	4-8	3-5	22	26	Sonora, Mexico	Gulf of California	No	f/2-si, Prov, L/20	1.7
<i>Micromonas pusilla</i>	487	1-2	1-2	22	26	Sargasso Sea	open ocean 20-25 meter	No	f/2-si, K, ASM2	
<i>Mantoniella squamata</i>	480	3-5	3-5	22	26	Brancaster, UK	salt marsh	No	K, Prov50	
Prasinophyceae										
<i>cf_Nannochloris</i> sp.	530	2-4	2-4	22	26	Caribbean Sea	mangrove pool	No	f/2-si, f/2	
<i>Dunaliella</i> sp.	366	13-15	4-5	22	26	Unknown	unknown	No	f/2, f/2agar, +50um NH4Cl	0.4
<i>cf_Chlorella</i> sp.	253	1-4	1-4	22	26	Narragansett Bay, R.I.	rock pool	Yes	f/2-si, f/2	
<i>Chlamydomonas</i> sp.	231	5-6	5-6	22	26	North Atlantic	25 meter	Yes	h/2, Prov100, K	
<i>Asteromonas gracilis</i>	140	19-23	12-19	22	26	San Quintin, Mexico	outer coast	No	Prov100, Prov100 agar	
Chlorophyceae										
Chlorophyta										
<i>Thalassiosira oceanica</i>	1003	5-8	4-6	22	26	Sargasso Sea	open ocean	No	f/2, f/2agar	5.5
<i>Skeletonema tropicum</i>	789	6-19	6-10	22	26	Caribbean Sea	Surinam	No	f/2:	24.9
<i>Chaetoceros</i> sp.	199	3-6	3-4	22	26	Sargasso Sea	open ocean	Yes	f/2, AlgaGro	18.9
Coscinodiscophyceae										
<i>Phaeodactylum tricornutum</i>	633	13-25	3-5	22	26	Mariana Is., Guam	near shore	Yes	f/2, f/2agar	5.0

OF MARINE ORGANISMS

<i>Porphyridium cruentum</i>	675	0-6	0-0	22	26	La Jolla, Ca.	SIO pier	No	TOXIC	t/zagar, Prov, f/2-si,	5.3
Rhodophyceae											
Rhodophyta											
<i>Protoцерatum reticulatum</i>	1720	35-60	0-0	22	26	Miami, Fl.	Biscayne Bay	No	TOXIC	K, L1	
<i>Proceratum mexicanum</i>	1370	0-0	0-0	17	26	Caribbean Sea	Knight Key, Fl.	No	TOXIC	K	
<i>Proceratum lima</i>	1368	0-0	0-0	18	26	Caribbean Sea	Knight Key, Fl.	No	TOXIC	K	
<i>Gymnodinium sp.</i>	426	10-15	8-12	22	26	Caribbean Sea	Florida Everglades	No	TOXIC	f/2-si, L1, Prov, K	
<i>Gonyaulax cf. cochlea</i>	1592	0-0	0-0	18	22	Narragansett Bay, R.I.	Narragansett Bay	No	TOXIC	K	
<i>Amphidinium operculatum</i>	1342	0-0	0-0	18	26	Caribbean Sea	Knight Key, Fl.	No	TOXIC	K	
Dinophyceae											
Pyrrrophyta											
<i>Prymnesium sp. (toxic to fish)</i>	711	8-12	5-8	22	26	Gouldsboro Bay, Me.	water edge	No	TOXIC	f/2-si	6
<i>Phaeocystis sp.</i>	629	3-8	3-8	18	26	Gulf of Mexico	Gulf Stream	No		K, L/20, K/20	21
<i>Pavlova pinguis</i>	609	5-6	5-6	22	26	Sargasso Sea	open ocean 20-25 meter	No		f/2-si, K, ASM2,	8.8
<i>Isochrysis sp.</i>	463	4-8	4-6	22	30	Turks and Caicos, BWI	channel	Yes		f/2, K	18.9
<i>Emiliana huxleyi</i>	372	3-6	1-2	22	26	Sargasso Sea	open ocean 40 meter	Yes		f/50	14
<i>Chrysochromulina ericina (not toxic to fish)</i>	283	4-8	3-8	11	26	Gulf of Maine	12 meter	No	TOXIC	L1, K	7.6
Prymnesiophyceae											
Haptophyta											
<i>Nannochloropsis salina</i>	537	2-8	1-4	22	26	Narragansett Bay, R.I.	rock pool	Yes		f/2-si, f/2	5.43
Eustigmatophyceae											
Eustigmatophyta											
<i>Eutreptia sp.</i>	389	29-80	8-12	22	26	Sargasso Sea	open ocean 50 meter	No		L1, L/20, K, Prov100,	

<i>Rhodosorus marinus</i>	769	5-8	5-8	11	16	Hawaii	open ocean	No	Prov, f/2-si	0.4
<i>Rhodosorus sp.</i>	1530	0-0	0-0	18	22	Isabella I., Galapagos I.	Elizabeth Bay surface	No	f/2-si	0.4
<i>Rhodella maculata</i>	736	7-16	7-16	22	26	Essex, England, UK	beach sand	Yes	K, f/2-si, L/20	
<i>Porphyridium cruentum</i>	675	0-6	0-0	22	26	La Jolla, Ca.	SIO pier	No	f/2agar, Prov, f/2-si,	5.3

Dhordanhuraga

FATTY ACIDS (%)

Saturated					
Myristic 14:0		5.0			
iso 15:0					
15:0					
Palmitic 16:0		21.6			
Stearic 18:0		0.6			
Arachidic 20:0					
22:0					
Lignoceric 24:0					
Monoenoic					
16:1n-7		37.2			
t16:1n-13					
18:1n-11					
Oleic 18:1n-9		1.2			
18:1n-7		0.8 0.9			
20:1n-11					
20:1n-9					
22:1n-11					
22:1n-9					
24:1n-9					
Polyenoic					
16:2n-7		4.6			
16:2n-4					
16:3n-6					
16:3n-4		7.0			
16:4n-3		3.2			
18:2n-7					
18:2n-6		0.8			
18:3n-6		0.6			
18:3n-3		0.2			
18:4n-3		0.5 0.9			
18:5n-3					
20:2n-6					
20:3n-9					
20:3n-6					
20:3n-3					
AA 20:4n-6		1-5	0.2-1	1-5	
20:4n-3					
EPA 20:5n-3		>20	>20	>20	
22:4n-6		15.1			
DPA 22:5n-6					
22:5n-3		0.2			
DHA 22:6n-3		1-5	1-5	1-5	1.8
CAROTENOID					
Carotene					
α -carotene - β, ϵ		YES YES YES YES			
β -carotene - β, β					
e-carotene - ϵ, ϵ					
γ -carotene - β, ψ					
Lycopene - ψ, ψ					
Xanthophylls					
Alloxanthin					
Antheraxanthin					
Astaxanthin					
Auroxanthin					
19'-Butanoyloxyfucoxanthin					
Canthaxanthin					
Crocoxanthin					
Dehdrouriolide					

<1.0

8.07 8.07

6.4

2.84

1.6 1.6
10.63 10.63

13.7

<1.0

2.5 2.5

2.5

2.57

<1.0

2.77

1.66 1.66

3.5

1.06 1.06

0.82 0.82

7.37

1.51 1.51

2.4

1.86 1.86

4.7

3.88

0.5 0.5

2.12

<1.0

4.63

27.25
% 27.25

1.9

3.28 3.28

1.8

12.19

14.19
% 14.19

25.2

15.91

9.36 9.36

22.6

5.53

12.16

8.13

2.69 0.2-1

0.2-1

1.6 1.6

6.7 5-20

5-20

0.61 0.61

2.9 2.9

22.2 22.2

5-20

YES

YES YES
YES

YES YES

YES
YES

YES YES

5.43
0.3
0.36
21.23
0.6

7.6 14 18.9 8.8 21 6
trace 0.1
0.28 0.2
27.5 5 14.2 17.3 25 16
0.6 0.1 0.3 2
trace

1.13

23.13
%
0.2

1 9.54 14.1 4 10
trace

2.25
0.48

5.4 4 6.9 0.6 30 25
1.1 2.4

1.1

0.27
0.48
0.6

0.8 2.1
1.2
0.36

4.57
0.34

5.7 4 2.5 0.6 1 18
1.0 2.1 .5
0.5 5 5.51 2.1 1 11
2.8 11 16.35 10.9 1 2
%

YES

0.31
0.3

0.35
0.62 0.7

5.89
29.9

1.0 12.4 1 0.63 27.6 4

5.3 10.7 28 1.61 9.5 2.4 0.2 5-20

YES

YES

YES

5.3
28.5
7

17.1
2.7

3.5

0.6

0.6

17

9.6

5.3 0.4 0.4

28.5 24.5 24.5
7 1.6 1.6

1.6 1.6

17.1 13.9 13.9
2.7 2.8 2.8

2.8 2.8

3.5 9.8 9.8

20.7 20.7

0.6

0.6

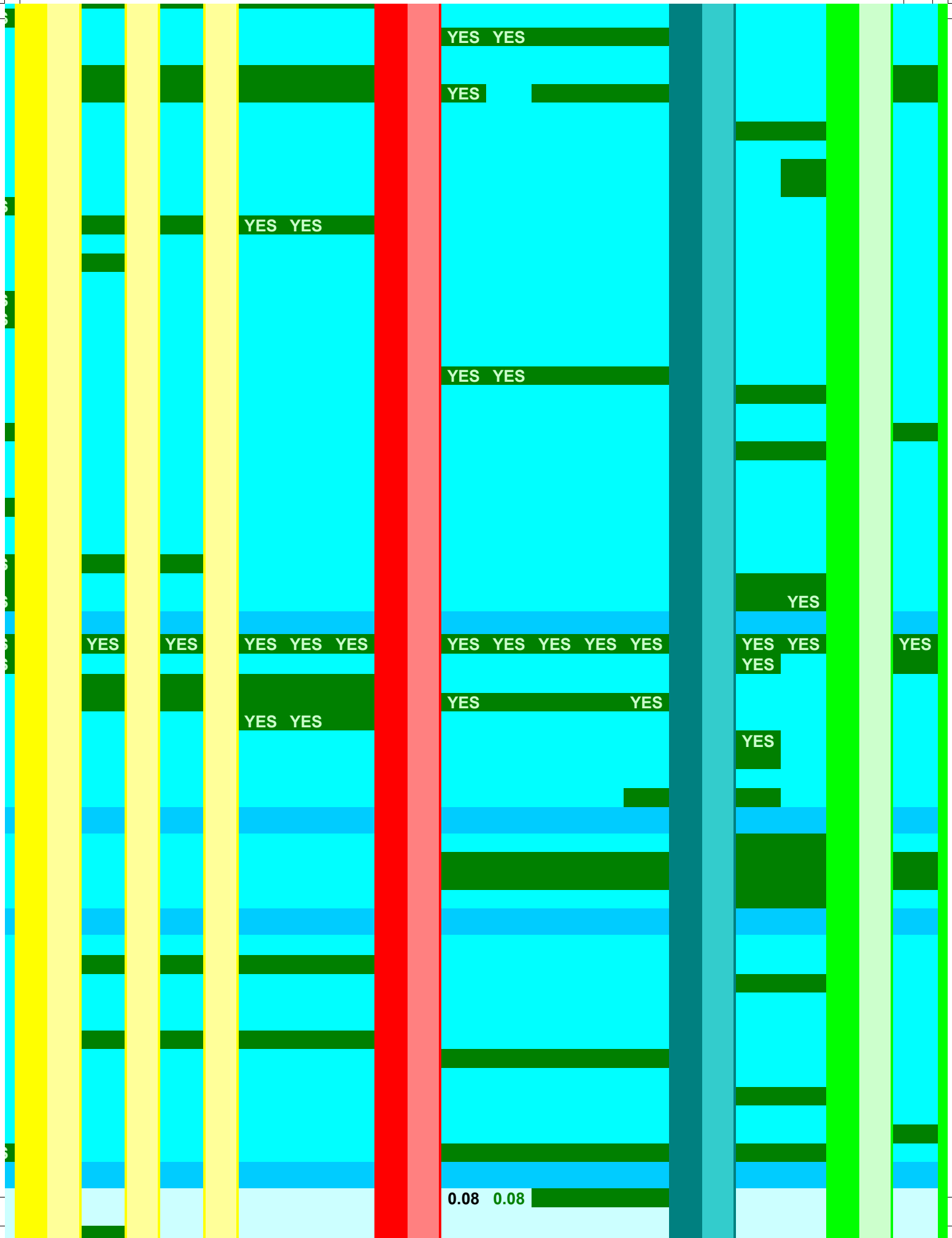
17 2.5 2.5

9.6 7.8 7.8

0.4 0.4

	Canthaxanthin				
	Crocoxanthin				
	Dehydrouriolide				
	Diadinoxanthin			YES	
	Diatoxanthin	YES	YES	YES	YES
	Dinoxanthin				
	Echinenone				
	Epoxide				
	Flavacene				
	Flavicin				
	Flavoxanthin				
	Fucoxanthin	YES	YES	YES	YES
	Furanoxide				
	Heteroxanthin				
	19'-Hexanoyloxyfucoxanthin				
	Loraxanthin				
	Lutein	YES	YES	YES	YES
	Luteoxanthin				
	Micromonal				
	Monadoxanthin				
	Myxoxanthin				
	Neochrome				
	Neoxanthin				
	Oscillaxanthin				
	Peridin				
	Prasinoxanthin				
	Siphonaxanthin				
	Uriolide				
	Vaucheriaxanthin ester				
	Violaxanthin				
	Xeaxanthin				
	Zeaxanthin				
CHLOROPHYLL					
	Chlorophyll α	YES	YES	YES	YES
	Chlorophyll β				
	Chlorophyll c1	YES	YES	YES	YES
	Chlorophyll c2	YES	YES	YES	YES
	Chlorophyll c3				
	Divinyl Chlorophyll α				
	Divinyl Chlorophyll β				
	Phylated Chlorophyll c-like				
	MgDVP				
PHYCOBILINS					
	Allophycocyanin				
	Phycocyanin				
	Phycoerythrin				
	Phycoerythrocyanin				
STORED FOOD					
	β -1, 3-Glucopyranoside				
	Chrysolaminaran	YES	YES	YES	YES
	Cyanophycin starch				
	Floridean starch				
	Laminaran				
	Lipids				
	Oil				
	Mannitol				
	Polyglucan				
	Polyglucose				
	Paramylon				
	Starch				
SUGARS (%)					
	Arabinose			2.4	0.15
	Floridoside				
	iso-Floridoside				

			YES YES YES	YES YES YES YES YES	YES
YES YES	YES YES YES				
			YES		
YES	YES YES YES		YES YES YES YES	YES YES YES YES YES YES	YES
YES	YES YES YES		YES YES YES YES YES	YES YES YES YES YES YES YES YES YES YES	YES YES
			YES YES	YES YES YES YES YES YES	
				YES YES YES	
			YES YES YES	YES YES YES YES YES YES	YES
			YES YES YES	YES YES YES YES YES YES	YES
YES	YES YES YES		YES YES YES YES YES YES YES YES	YES YES YES YES YES YES YES YES YES YES YES YES	YES YES
YES YES	YES YES YES				
				YES YES YES	
YES	YES YES YES				
			YES YES YES	YES YES YES YES YES	YES
0.15	0.27 1.4 0.19		1.3 0.65 0.16	1.3 0.04 1.3 0.5	1.6



YES YES

YES

YES YES

YES YES

YES

YES

YES YES YES

YES YES YES YES YES

YES

YES YES
YES

YES

YES YES

YES YES

YES

0.08 0.08

YES YES
YES YES

YES
YES
YES

YES YES

YES YES YES YES YES YES

YES

YES

YES

YES YES YES YES YES YES

YES YES YES YES YES YES

Depends on Symbiont (Endo- or Exo-)

YES YES
YES YES YES YES
YES YES

YES

Depends on Symbiont

6.4 6.7

YES

YES

YES YES YES YES

YES

Arabinose		2.4	0.15
Floridoside			
iso-Floridoside			
Fructose			
Fucose		12.8	4.3
Galactose		18.4	8.9
Glucose	YES YES	32.6	21.0
Maltose			
Mannitol			
Mannoglyceric acid			
Mannose		16.8	45.9
Rhamnose		7.7	8.6
Rhbose		2.1	3.7
Sucrose			
Trehalose			
Xylose		7.0	7.5

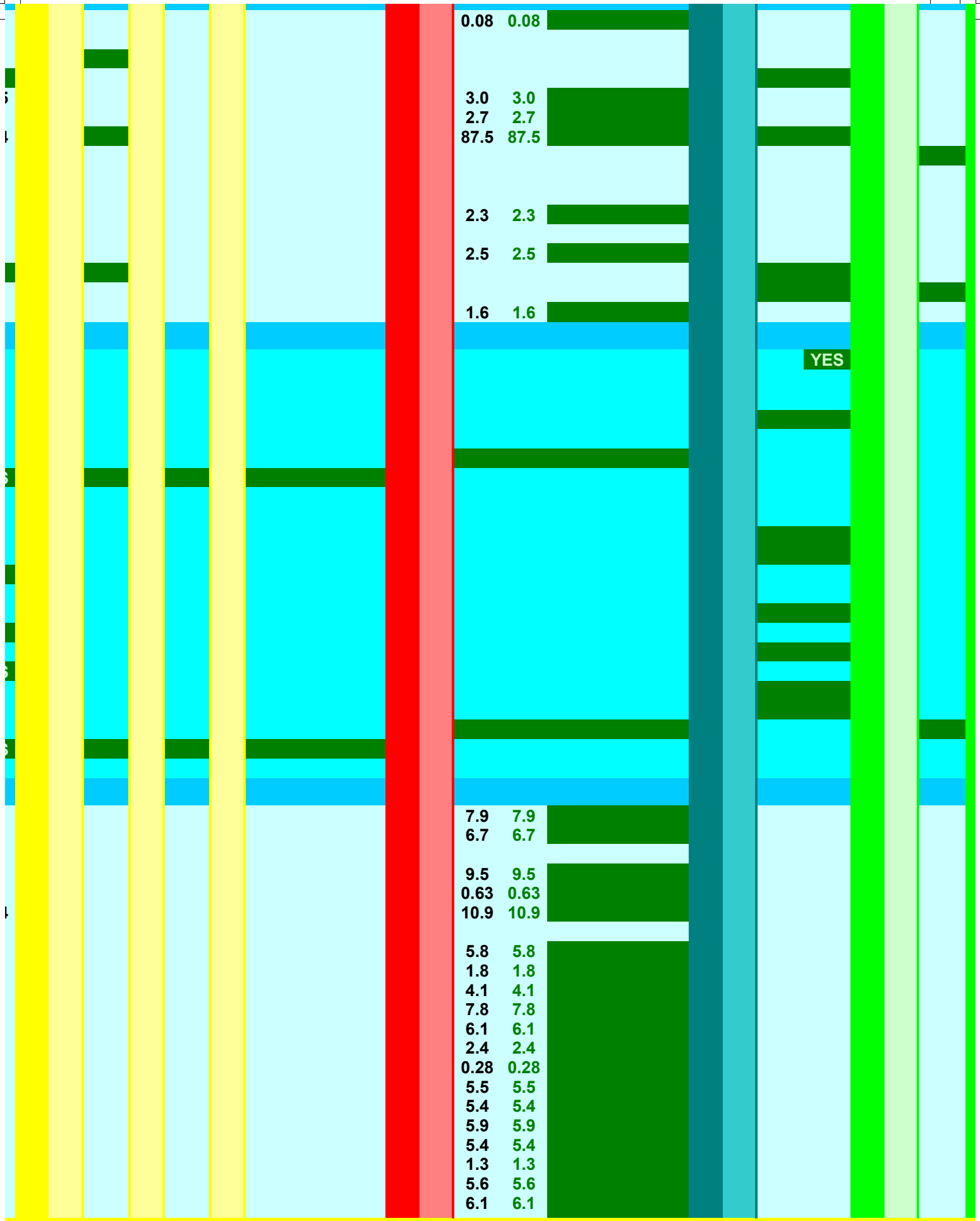
CELL WALL

α, e-Diaminopimelic acid			YES
β-1, 4-Glucopyranoside			
Absent or thin			
Alanine			
Alginic acid			
Calcium			
Cellulose			
Chitin			
Fucoidan			
Galactins			
Glucose amine			
Glycoproteins			
Hydroxyproline Glycosides			
Lipopolysaccharide			
Mannans			
Mucilaginous substances			
Pectins			
Peptidoglycan			
Protein			
Proteinaceous pellicle			
Silica	YES YES YES YES		
Xylans			

AMINO ACIDS

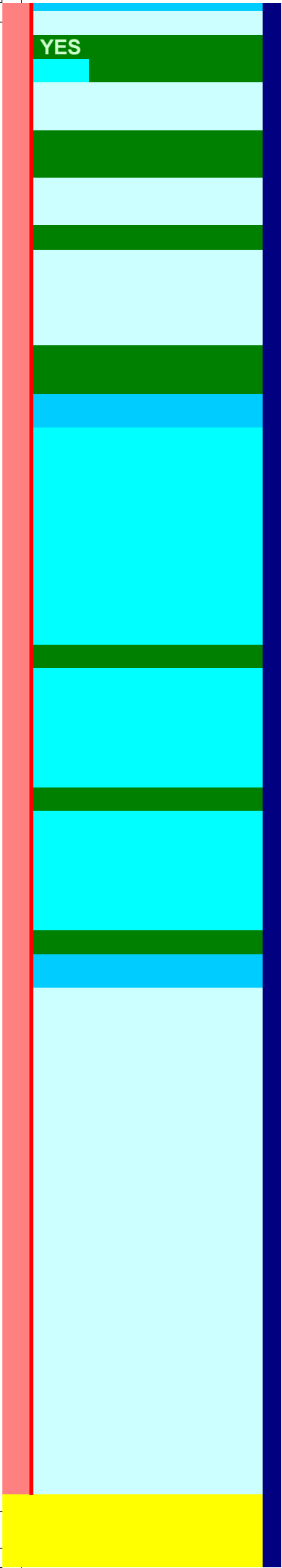
Alanine Ala		6.9	7.2
Arginine Arg		7.1	6.6
Asparagine Asn			
Aspartate Asp		8.8	8.6
Cysteine Cys		0.58	0.38
Glutamate Glu		10.6	11.2
Glutamine Gln			
Glycine Gly		6.0	5.8
Histidine His		1.4	1.7
Isoleucine Ile		5.0	4.9
Leucine Leu		8.1	7.7
Lysine Lys		5.7	5.6
Methionine Met		1.6	1.9
Ornithine		0.52	1.4
Phenylalanine Phe		6.9	6.6
Proline Pro		4.6	6.3
Serine Ser		6.6	5.9
Threonine Thr		5.5	5.4
Tryptophan Trp		1.4	1.6
Tyrosine Tyr		3.9	4.1
Valine Val		6.2	5.9

0.15	0.27	1.4	0.19		1.3	0.65	0.16		1.3	0.04	1.3	0.5	1.6
4.3	10.6	3.4	2.8		7.9		7.9		2.5	0.3	2.4	0.6	16.5
8.9	17.7	7.0	5.4		15.2	1.1	10.6		5.7	3.8	5.1	6.1	8.7
21.0	56.3	62.0	82.4		50.1	85.3	55.2		78.6	81.4	78.4	88.3	55.4
45.9	3.8	11.4	5.0		10.1	4.5	5.0		2.0	11.5	2.0	2.3	5.8
8.6	4.7	6.6	1.3		8.1	5.5	13.3		4.4	0.3	4.4	0.4	4.7
3.7	3.4	5.4	1.4		3.5	2.0	1.0		2.0	2.0	2.0	1.4	3.3
7.5	4.3	2.8	1.6		3.9	1.0	6.6		3.6	0.7	2.9	0.4	3.9
YES													
					YES	YES	YES		YES	YES	YES	YES	YES
					YES	YES	YES		YES	YES	YES	YES	YES
YES	YES	YES	YES		YES	YES	YES		YES	YES	YES		YES
7.2	7.0	7.3	7.4		7.6	8.0	8.2		8.8	7.8	8.4	6.9	8.3
6.6	6.5	6.4	6.3		8.3	6.8	5.9		4.7	6.5	5.3	15.0	6.1
8.6	8.9	10.1	9.7		8.4	9.0	8.3		8.3	8.0	8.5	7.7	9.5
0.38	0.47	0.4	0.53		1.2	0.44	0.55		0.89	1.1	1.0	1.3	1.7
11.2	10.0	10.4	10.4		11.0	10.3	11.4		10.4	12.4	10.2	9.6	12.4
5.8	5.5	6.4	6.2		5.8	6.0	6.3		7.5	7.6	6.0	5.4	5.5
1.7	2.2	1.6	1.6		2.1	2.1	1.8		1.5	1.9	1.8	2.2	1.6
4.9	5.7	5.2	5.5		4.1	4.8	3.4		3.9	3.9	3.4	4.0	3.9
7.7	7.7	8.3	8.4		6.7	8.4	7.5		10.1	7.8	10.1	6.6	7.4
5.6	5.7	5.7	5.9		5.8	6.0	5.2		5.9	6.1	6.9	5.3	6.4
1.9	2.5	2.2	2.2		2.1	1.4	1.9		1.8	2.1	2.1	1.9	1.6
1.4	0.27	0.39	0.21			0.35	0.35					0.7	
6.6	6.9	6.4	6.8		5.8	6.7	5.5		7.0	4.9	7.6	6.1	5.1
6.3	6.0	4.9	4.8		7.9	6.5	13.1		5.5	5.7	6.1	5.1	8.2
5.9	6.2	6.1	6.8		4.9	5.2	4.8		5.9	6.4	4.4	4.7	4.9
5.4	5.2	5.1	5.2		5.2	4.7	4.0		5.1	5.5	5.0	5.3	5.2
1.6	1.5	1.3	0.87		0.8	1.5	1.1		1.0	1.3	1.8	1.5	1.3
4.1	5.0	4.5	4.2		4.4	5.0	3.9		4.3	4.1	5.0	4.4	3.8
5.9	6.1	6.3	6.1		5.7	6.2	5.9		4.4	5.4	5.0	5.4	5.3



Graphic Center - Dania Beach, Florida

YES



Data collected by **Richard L. Hubbard** rh@fisha

YES Present

SHOULD BE PRE-
SENT

NOT PRE-
SENT

VALUE UN-
KNOWN

1234

Graphic Center - Dania Beach, Florida

12345

VALUES for GENUS - SPECIES UNKNOWN

Numerical values are as per author. It should be no

It should be noted that these values may vary depending upon environmental and nutritional conditions in the culture

culture.