APPENDIX A

Growth studies

Table A.1 *Chlorella* UMACC 234

Day	OD (620 nm)			Average
	Replicate 1	Replicate 2	Replicate 3	
0	0.020	0.021	0.029	0.023±0.005
2	0.023	0.031	0.030	0.028±0.004
4	0.046	0.044	0.045	0.045±0.001
6	0.054	0.051	0.051	0.052±0.002
8	0.079	0.080	0.079	0.079±0.001
10	0.095	0.104	0.097	0.099±0.005
12	0.104	0.126	0.112	0.114±0.011
14	0.231	0.212	0.196	0.203±0.018

Table A.2 *Chlorella* UMACC 001

Day	OD (620 nm)			Average
	Replicate 1	Replicate 2	Replicate 3	
0	0.022	0.024	0.026	0.024±0.002
2	0.072	0.070	0.080	0.074±0.005
4	0.133	0.134	0.149	0.139±0.009
6	0.171	0.150	0.165	0.162±0.011
8	0.390	0.358	0.371	0.373±0.016
10	0.489	0.516	0.497	0.501±0.014
12	0.565	0.596	0.548	0.570±0.024
14	0.629	0.659	0.659	0.649±0.017

Table A.3 *Chlorella* UMACC 237

Day	OD (620 nm)			Average
	Replicate 1	**Replicate 2**	**Replicate 3**	
0	0.022	0.023	0.024	0.023±0.001
2	0.04	0.035	0.034	0.036±0.003
4	0.046	0.042	0.045	0.044±0.002
6	0.057	0.058	0.06	0.058±0.002
8	0.08	0.083	0.079	0.081±0.002
10	0.104	0.108	0.099	0.104±0.005
12	0.12	0.13	0.129	0.126±0.006
14	0.239	0.23	0.24	0.236±0.006

Table A.4 *Chlorella* UMACC 187

Day	OD (620 nm)			Average
	Replicate 1	**Replicate 2**	**Replicate 3**	
0	0.023	0.019	0.020	0.021±0.002
2	0.083	0.087	0.080	0.083±0.004
4	0.169	0.182	0.190	0.180±0.011
6	0.261	0.274	0.230	0.255±0.023
8	0.472	0.471	0.365	0.436±0.061
10	0.635	0.619	0.504	0.586±0.071
12	0.741	0.748	0.688	0.726±0.033
14	0.776	0.775	0.747	0.766±0.016

Table A.5 *Chlorella* UMACC 103

Day	OD (620 nm)			Average
	Replicate 1	Replicate 2	Replicate 3	
0	0.022	0.024	0.022	0.023±0.001
2	0.089	0.106	0.109	0.101±0.011
4	0.173	0.205	0.206	0.195±0.019
6	0.251	0.252	0.220	0.241±0.018
8	0.408	0.527	0.539	0.491±0.072
10	0.477	0.632	0.655	0.588±0.097
12	0.639	0.705	0.687	0.677±0.034
14	0.683	0.744	0.741	0.723±0.034

Table A.6 *Chlorella* UMACC 193

Day	OD (620 nm)			Average
	Replicate 1	**Replicate 2**	**Replicate 3**	
0	0.031	0.022	0.030	0.028±0.005
2	0.089	0.086	0.089	0.088±0.002
4	0.168	0.164	0.149	0.160±0.010
6	0.246	0.252	0.220	0.239±0.017
8	0.394	0.362	0.363	0.373±0.018
10	0.551	0.518	0.500	0.523±0.026
12	0.620	0.593	0.580	0.598±0.020
14	0.654	0.636	0.628	0.639±0.013

Table A.7 *Chlorella* UMACC 104

Day	**OD (620 nm)**			**Average**
	Replicate 1	**Replicate 2**	**Replicate 3**	
0	0.023	0.024	0.028	0.025±0.003
2	0.059	0.015	0.086	0.053±0.036
4	0.103	0.088	0.156	0.116±0.036
6	0.160	0.113	0.222	0.165±0.055
8	0.450	0.342	0.415	0.402±0.055
10	0.490	0.538	0.547	0.525±0.031
12	0.639	0.705	0.687	0.677±0.034
14	0.727	0.757	0.747	0.744±0.015

Table A.8 *Chlorella* UMACC 050

Day	OD (620 nm)			Average
	Replicate 1	Replicate 2	Replicate 3	
0	0.019	0.018	0.021	0.019±0.002
2	0.077	0.051	0.055	0.061±0.014
4	0.125	0.093	0.093	0.104±0.018
6	0.091	0.227	0.287	0.202±0.100
8	0.311	0.364	0.420	0.365±0.055
10	0.525	0.544	0.567	0.545±0.021
12	0.556	0.577	0.612	0.582±0.028
14	0.587	0.592	0.622	0.600±0.019

Table A.9 *Chlorella* UMACC 251

Day	OD (620 nm)			Average
	Replicate 1	Replicate 2	Replicate 3	
0	0.031	0.029	0.027	0.029±0.002
2	0.090	0.093	0.097	0.093±0.004
4	0.188	0.185	0.186	0.186±0.002
6	0.262	0.256	0.250	0.256±0.006
8	0.391	0.389	0.350	0.377±0.023
10	0.562	0.545	0.512	0.540±0.025
12	0.692	0.693	0.669	0.685±0.014
14	0.697	0.697	0.693	0.696±0.002

Table A.10 *Chlorella* UMACC 245

Day	OD (620 nm)			Average
	Replicate 1	**Replicate 2**	**Replicate 3**	
0	0.024	0.022	0.021	0.022±0.001
2	0.079	0.08	0.081	0.080±0.002
4	0.148	0.144	0.149	0.147±0.002
6	0.246	0.252	0.22	0.239±0.004
8	0.39	0.388	0.393	0.390±0.003
10	0.512	0.52	0.518	0.517±0.005
12	0.622	0.62	0.621	0.621±0.005
14	0.625	0.625	0.626	0.625±0.005

Table A.11 *Chlorella* UMACC 250

Day	OD (620 nm)			Average
	Replicate 1	**Replicate 2**	**Replicate 3**	
0	0.024	0.022	0.021	0.022±0.002
2	0.079	0.080	0.081	0.080±0.001
4	0.148	0.144	0.149	0.147±0.003
6	0.246	0.252	0.220	0.239±0.017
8	0.390	0.388	0.393	0.390±0.003
10	0.512	0.520	0.518	0.517±0.004
12	0.622	0.620	0.621	0.621±0.001
14	0.625	0.625	0.626	0.625±0.001

APPENDIX B

Medium

B.1 Composition of Bold's Basal Medium (BBM) (Nichols and Bold, 1965)

Stocks	**per 400mL**
1. $NaNO_3$	10.0g
2. $MgSO_4.7H_2O$	3.0g
3. K_2HPO_4	4.0g
4. KH_2PO_4	6.0g
5. $CaCl_2$	1.0g
6. NaCl	1.0g
7. Trace element solution	per L
$ZnSO_4$	8.82 g
MoO_3	0.71 g
$Co(NO_3)_2.6H_2O$	0.49 g
$MnCl_2$	1.44 g
$CuSO_4.5H_2O$	1.57 g
Autoclave to dissolve	
	per 100mL
8. H_3BO_4	1.14 g
9.EDTA-KOH solution	
EDTA.Na_2	5.0 g
KOH	3.1 g
	per L
10. $FeSO_4.7H_2O$	4.98 g
Concentrated HCl	1.0mL

Medium

Stock solutions 1-6	10.0mL each
Stock solutions 7-10	1.0mL each

- Make up to 1L with deionized water. Adjust pH with 1 N KOH to 6.8

B.2 Composition of Prov Medium (CCMP, 1996)

$NaNO_3$	75.0 gL^{-1}
$NaH_2PO_4.H_2O$	5.0 gL^{-1}
f/2 trace metal solution $Na_2EDTA.2H_2O$	4.36 g
$FeCl_3.6H_2O$	3.15 g
$CoCl_2.6H_2O$	1.0mL (from 10.0 gL^{-1})
$ZnSO_4.7H_2O$	1.0mL (from 22.0 gL^{-1})
$MnCl_2.4H_2O$	1.0mL (from 180.0 gL^{-1})
$CuSO_4.5H_2O$	1.0mL (from 9.8 gL^{-1})
$Na_2MoO_4.2H_2O$	

0.7 mg

Make up to 1.0L with deionized water

Vitamin solution

Vitamin B12	1.0mL (from 1.0 gL^{-1})
Biotin	10.0mL (from 0.1 gL^{-1})
Thiamine HCl	100.0mg

Medium

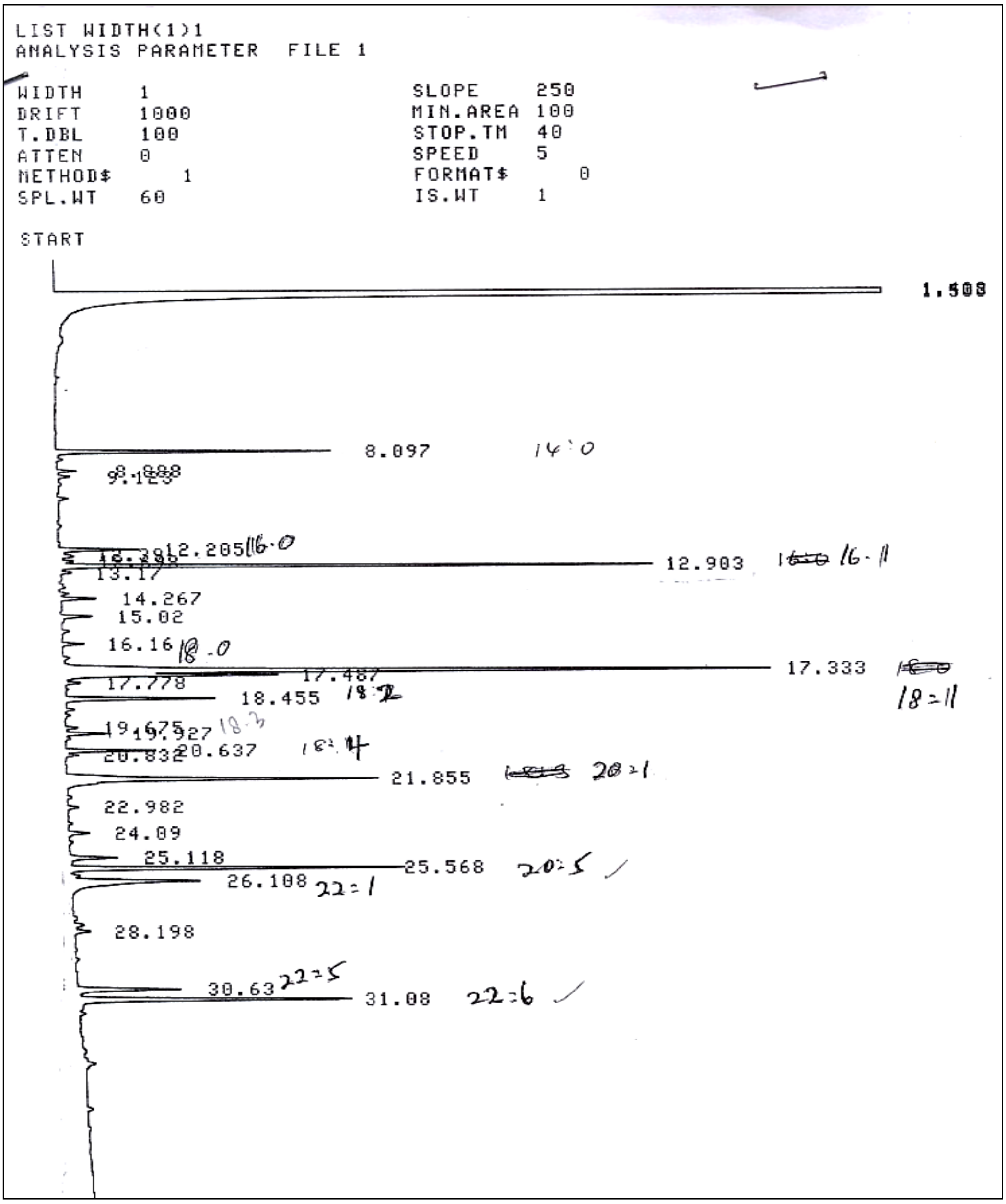
To 950 mL filtered seawater add: 30g sea salt in 950mL of distilled water

$NaNO_3$ stock solution	1.0mL
$NaH_2PO_4.H_2O$ stock solution	1.0 mL
f/2 trace metal solution	1.0 mL
f/2 vitamin solution	0.5 mL

Make final volume up to 1.0L with filtered seawater.

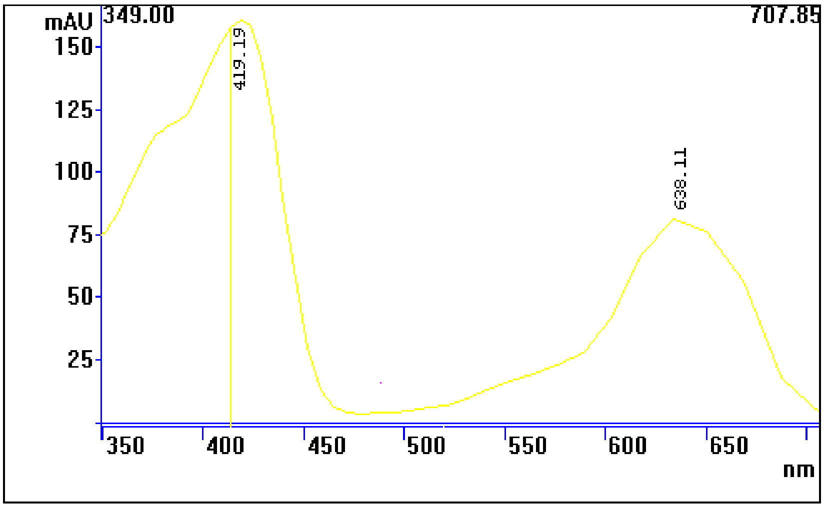
APPENDIX C

Fig C.1 Standard curve of fatty acid composition

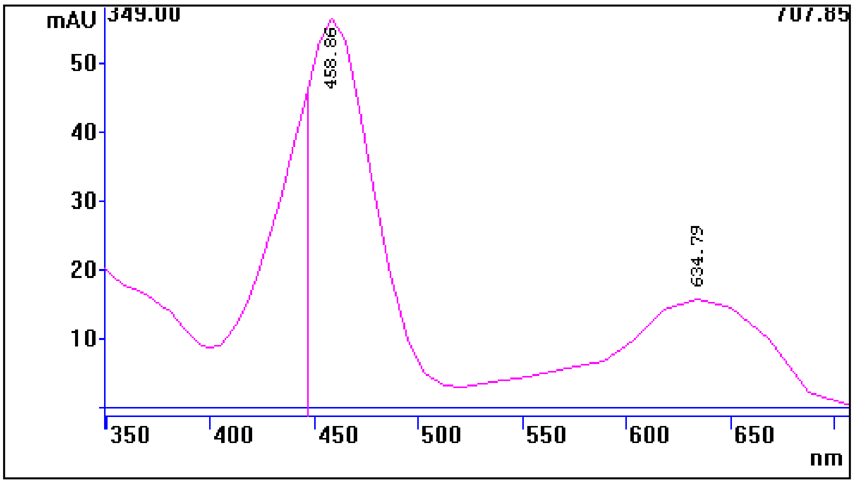


APPENDIX D

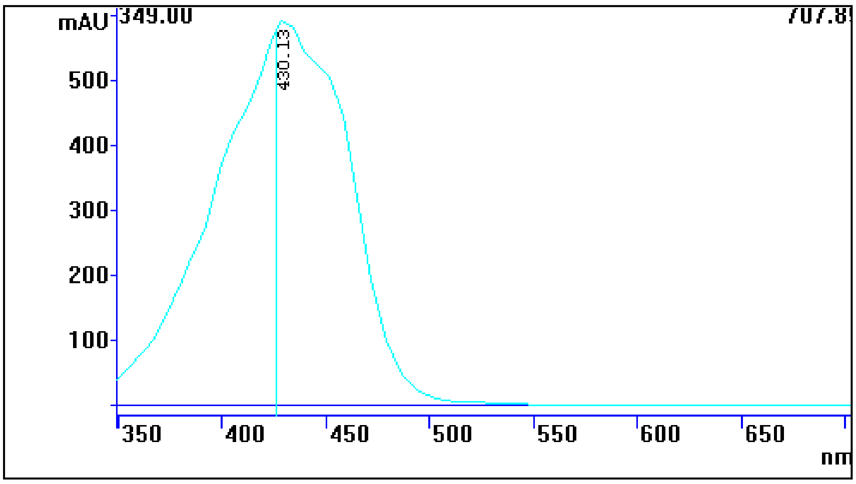
(a)



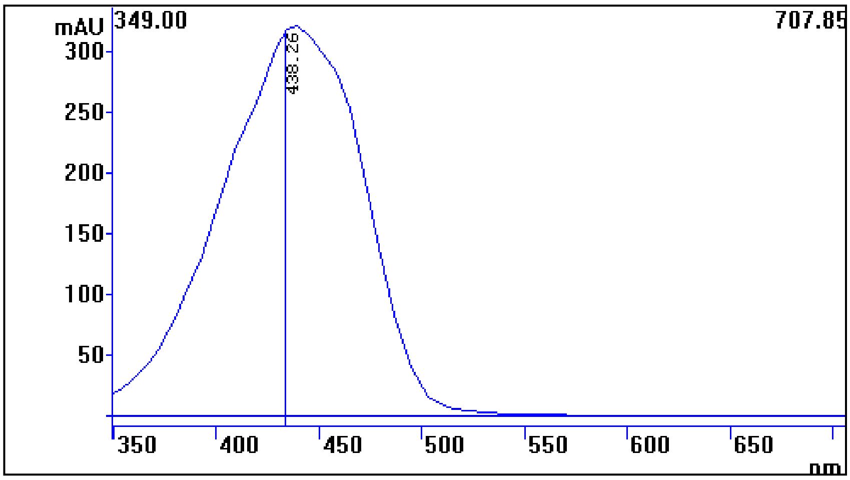
(b)



(c)



(d)



(e)

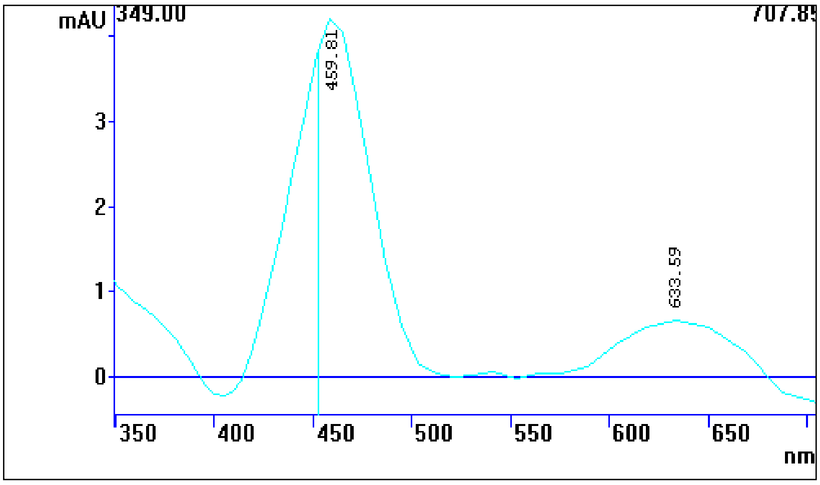


Fig D.1 Absorption spectra of the pigments separated by HPLC, (a) chlorophyll *a*, (b) lutein, (c) cis-neoxanthin and (d) violaxanthin, (e) chlorophyll *b*

APPENDIX E

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                      ....|....| ....|....| ....|....| ....|....|
....|....|
                              10         20         30         40         50
Chlorella UMACC187 TGCTTTATAC TGTGAAACTG CGAATGGCTC ATTAAATCAG TTATAGTTTA
Chlorella UMACC103 TGCTTTATAC TGTGAAACTG CGAATGGCTC ATTAAATCAG TTATAGTTTA
Chlorella UMACC104 TGCTTTATAC TGTGAAACTG CGAATGGCTC ATTAAATCAG TTATAGTTTA
Chlorella UMACC245 TGCTTTATAC TGTGAAACTG CGAATGGCTC ATTAAATCAG TTATAGTTTA
Chlorella UMACC001 TGCTTTATAC TGTGAAACTG CGAATGGCTC ATTAAATCAG TTATAGTTTA
Chlorella UMACC234 TGCTTTATAC TGTGAAACTG CGAATGGCTC ATTAAATCAG TTATAGTTTA
Chlorella UMACC250 TGCTTTATAC TGTGAAACTG CGAATGGCTC ATTAAATCAG TTATAGTTTA
Chlorella UMACC193 TGCTTTATAC TGTGAAACTG CGAATGGCTC ATTAAATCAG TTATAGTTTA
Chlorella UMACC237 TGCTTTATAC TGTGAAACTG CGAATGGCTC ATTAAATCAG TTATAGTTTA
Chlorella UMACC050 TGCTTTATAC TGTGAAACTG CGAATGGCTC ATTAAATCAG TTATAGTTTA
Chlorella UMACC251 TGCTTTATAC TGTGAAACTG CGAATGGCTC ATTAAATCAG TTATAGTTTA

               ....|....| ....|....| ....|....| ....|....| ....|....|
                            60         70         80         90        100
Chlorella UMACC187 TTTGATGGTA CCTACTACTC GGATACCCGT AGTAAATCTA GAGCTAATAC
Chlorella UMACC103 TTTGATGGTA CCTACTACTC GGATACCCGT AGTAAATCTA GAGCTAATAC
Chlorella UMACC104 TTTGATGGTA CCTACTACTC GGATACCCGT AGTAAATCTA GAGCTAATAC
Chlorella UMACC245 TTTGATGGTA CCTACTACTC GGATACCCGT AGTAAATCTA GAGCTAATAC
Chlorella UMACC001 TTTGATGGTA CCTACTACTC GGATACCCGT AGTAAATCTA GAGCTAATAC
Chlorella UMACC234 TTTGATGGTA CCTACTACTC GGATACCCGT AGTAAATCTA GAGCTAATAC
Chlorella UMACC250 TTTGATGGTA CCTACTACTC GGATACCCGT AGTAAATCTA GAGCTAATAC
Chlorella UMACC193 TTTGATGGTA CCTACTACTC GGATACCCGT AGTAAATCTA GAGCTAATAC
Chlorella UMACC237 TTTGATGGTA CCTACTACTC GGATACCCGT AGTAAATCTA GAGCTAATAC
Chlorella UMACC050 TTTGATGGTA CCTACTACTC GGATACCCGT AGTAAATCTA GAGCTAATAC
Chlorella UMACC251 TTTGATGGTA CCTACTACTC GGATACCCGT AGTAAATCTA GAGCTAATAC

                      ....|....| ....|....| ....|....| ....|....| ....|....|
                        110        120        130        140        150
Chlorella UMACC187 GTGCGTAAAT CCCGACTTCT GGAAGGGACG TATTTATTAG ATAAAAGGCC
Chlorella UMACC103 GTGCGTAAAT CCCGACTTCT GGAAGGGACG TATTTATTAG ATAAAAGGCC
Chlorella UMACC104 GTGCGTAAAT CCCGACTTCT GGAAGGGACG TATTTATTAG ATAAAAGGCC
Chlorella UMACC245 GTGCGTAAAT CCCGACTTCT GGAAGGGACG TATTTATTAG ATAAAAGGCC
Chlorella UMACC001 GTGCGTAAAT CCCGACTTCT GGAAGGGACG TATTTATTAG ATAAAAGGCC
Chlorella UMACC234 GTGCGTAAAT CCCGACTTCT GGAAGGGACG TATTTATTAG ATAAAAGGCC
Chlorella UMACC250 GTGCGTAAAT CCCGACTTCT GGAAGGGACG TATTTATTAG ATAAAAGGCC
Chlorella UMACC193 GTGCGTAAAT CCCGACTTCT GGAAGGGACG TATTTATTAG ATAAAAGGCC
Chlorella UMACC237 GTGCGTAAAT CCCGACTTCT GGAAGGGACG TATTTATTAG ATAAAAGGCC
Chlorella UMACC050 GTGCGTAAAT CCCGACTTCT GGAAGGGACG TATTTATTAG ATAAAAGGCC
Chlorella UMACC251 GTGCGTAAAT CCCGACTTCT GGAAGGGACG TATTTATTAG ATAAAAGGCC

               ....|....| ....|....| ....|....| ....|....| ....|....|
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Chlorella UMACC103 GACCGGGCTC TGCCCGACTC GCGGTGAATC ATGATAACTT CACGAATCGC
Chlorella UMACC104 GACCGGGCTC TGCCCGACTC GCGGTGAATC ATGATAACTT CACGAATCGC
Chlorella UMACC245 GACCGGGCTC TGCCCGACTC GCGGTGAATC ATGATAACTT CACGAATCGC
Chlorella UMACC001 GACCGGGCTC TGCCCGACTC GCGGTGAATC ATGATAACTT CACGAATCGC
Chlorella UMACC234 GACCGGGCTC TGCCCGACTC GCGGTGAATC ATGATAACTT CACGAATCGC
Chlorella UMACC250 GACCGGGCTC TGCCCGACTC GCGGTGAATC ATGATAACTT CACGAATCGC
Chlorella UMACC193 GACCGGGCTC TGCCCGACTC GCGGTGAATC ATGATAACTT CACGAATCGC
Chlorella UMACC237 GACCGGGCTC TGCCCGACTC GCGGTGAATC ATGATAACTT CACGAATCGC
Chlorella UMACC050 GACCGGGCTC TGCCCGACTC GCGGTGAATC ATGATAACTT CACGAATCGC
Chlorella UMACC251 GACCGGGCTC TGCCCGACTC GCGGTGAATC ATGATAACTT CACGAATCGC

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                        210        220        230        240        250
Chlorella UMACC187 ATGGCCTTGC GCCGGCGATG TTTCATTCAA ATTTCTGCCC TATCAACTTT
Chlorella UMACC103 ATGGCCTTGC GCCGGCGATG TTTCATTCAA ATTTCTGCCC TATCAACTTT
Chlorella UMACC104 ATGGCCTTGC GCCGGCGATG TTTCATTCAA ATTTCTGCCC TATCAACTTT
Chlorella UMACC245 ATGGCCTTGC GCCGGCGATG TTTCATTCAA ATTTCTGCCC TATCAACTTT
Chlorella UMACC001 ATGGCCTTGC GCCGGCGATG TTTCATTCAA ATTTCTGCCC TATCAACTTT
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Chlorella UMACC234 ATGGCCTTGC GCCGGCGATG TTTCATTCAA ATTTCTGCCC TATCAACTTT
Chlorella UMACC250 ATGGCCTTGC GCCGGCGATG TTTCATTCAA ATTTCTGCCC TATCAACTTT
Chlorella UMACC193 ATGGCCTTGC GCCGGCGATG TTTCATTCAA ATTTCTGCCC TATCAACTTT
Chlorella UMACC237 ATGGCCTTGC GCCGGCGATG TTTCATTCAA ATTTCTGCCC TATCAACTTT
Chlorella UMACC050 ATGGCCTTGC GCCGGCGATG TTTCATTCAA ATTTCTGCCC TATCAACTTT
Chlorella UMACC251 ATGGCCTTGC GCCGGCGATG TTTCATTCAA ATTTCTGCCC TATCAACTTT


               ....|....| ....|....| ....|....| ....|....| ....|....|
                        260        270        280        290        300
Chlorella UMACC187 CGATGGTAGG ATAGAGGCCT ACCATGGTGG TAACGGGTGA CGGAGGATTA
Chlorella UMACC103 CGATGGTAGG ATAGAGGCCT ACCATGGTGG TAACGGGTGA CGGAGGATTA
Chlorella UMACC104 CGATGGTAGG ATAGAGGCCT ACCATGGTGG TAACGGGTGA CGGAGGATTA
Chlorella UMACC245 CGATGGTAGG ATAGAGGCCT ACCATGGTGG TAACGGGTGA CGGAGGATTA
Chlorella UMACC001 CGATGGTAGG ATAGAGGCCT ACCATGGTGG TAACGGGTGA CGGAGGATTA
Chlorella UMACC234 CGATGGTAGG ATAGAGGCCT ACCATGGTGG TAACGGGTGA CGGAGGATTA
Chlorella UMACC250 CGATGGTAGG ATAGAGGCCT ACCATGGTGG TAACGGGTGA CGGAGGATTA
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Chlorella UMACC237 CGATGGTAGG ATAGAGGCCT ACCATGGTGG TAACGGGTGA CGGAGGATTA
Chlorella UMACC050 CGATGGTAGG ATAGAGGCCT ACCATGGTGG TAACGGGTGA CGGAGGATTA
Chlorella UMACC251 CGATGGTAGG ATAGAGGCCT ACCATGGTGG TAACGGGTGA CGGAGGATTA

                   ....|....| ....|....| ....|....| ....|....| ....|....|
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Chlorella UMACC103 GGGTTCGATT CCGGAGAGGG AGCCTGAGAA ACGGCTACCA CATCCAAGGA
Chlorella UMACC104 GGGTTCGATT CCGGAGAGGG AGCCTGAGAA ACGGCTACCA CATCCAAGGA
Chlorella UMACC245 GGGTTCGATT CCGGAGAGGG AGCCTGAGAA ACGGCTACCA CATCCAAGGA
Chlorella UMACC001 GGGTTCGATT CCGGAGAGGG AGCCTGAGAA ACGGCTACCA CATCCAAGGA
Chlorella UMACC234 GGGTTCGATT CCGGAGAGGG AGCCTGAGAA ACGGCTACCA CATCCAAGGA
Chlorella UMACC250 GGGTTCGATT CCGGAGAGGG AGCCTGAGAA ACGGCTACCA CATCCAAGGA
Chlorella UMACC193 GGGTTCGATT CCGGAGAGGG AGCCTGAGAA ACGGCTACCA CATCCAAGGA
Chlorella UMACC237 GGGTTCGATT CCGGAGAGGG AGCCTGAGAA ACGGCTACCA CATCCAAGGA
Chlorella UMACC050 GGGTTCGATT CCGGAGAGGG AGCCTGAGAA ACGGCTACCA CATCCAAGGA
Chlorella UMACC251 GGGTTCGATT CCGGAGAGGG AGCCTGAGAA ACGGCTACCA CATCCAAGGA

                   ....|....| ....|....| ....|....| ....|....| ....|....|
                          360        370        380        390        400
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Chlorella UMACC103 AGGCAGCAGG CGCGCAAATT ACCCAATCCT GACACAGGGA GGTAGTGACA
Chlorella UMACC104 AGGCAGCAGG CGCGCAAATT ACCCAATCCT GACACAGGGA GGTAGTGACA
Chlorella UMACC245 AGGCAGCAGG CGCGCAAATT ACCCAATCCT GACACAGGGA GGTAGTGACA
Chlorella UMACC001 AGGCAGCAGG CGCGCAAATT ACCCAATCCT GACACAGGGA GGTAGTGACA
Chlorella UMACC234 AGGCAGCAGG CGCGCAAATT ACCCAATCCT GACACAGGGA GGTAGTGACA
Chlorella UMACC250 AGGCAGCAGG CGCGCAAATT ACCCAATCCT GACACAGGGA GGTAGTGACA
Chlorella UMACC193 AGGCAGCAGG CGCGCAAATT ACCCAATCCT GACACAGGGA GGTAGTGACA
Chlorella UMACC237 AGGCAGCAGG CGCGCAAATT ACCCAATCCT GACACAGGGA GGTAGTGACA
Chlorella UMACC050 AGGCAGCAGG CGCGCAAATT ACCCAATCCT GACACAGGGA GGTAGTGACA
Chlorella UMACC251 AGGCAGCAGG CGCGCAAATT ACCCAATCCT GACACAGGGA GGTAGTGACA

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Chlorella UMACC103 ATAAATAACA ATACTGGGCC TTTTCAGGTC TGGTAATTGG AATGAGTACA
Chlorella UMACC104 ATAAATAACA ATACTGGGCC TTTTCAGGTC TGGTAATTGG AATGAGTACA
Chlorella UMACC245 ATAAATAACA ATACTGGGCC TTTTCAGGTC TGGTAATTGG AATGAGTACA
Chlorella UMACC001 ATAAATAACA ATACTGGGCC TTTTCAGGTC TGGTAATTGG AATGAGTACA
Chlorella UMACC234 ATAAATAACA ATACTGGGCC TTTTCAGGTC TGGTAATTGG AATGAGTACA
Chlorella UMACC250 ATAAATAACA ATACTGGGCC TTTTCAGGTC TGGTAATTGG AATGAGTACA
Chlorella UMACC193 ATAAATAACA ATACTGGGCC TTTTCAGGTC TGGTAATTGG AATGAGTACA
Chlorella UMACC237 ATAAATAACA ATACTGGGCC TTTTCAGGTC TGGTAATTGG AATGAGTACA
Chlorella UMACC050 ATAAATAACA ATACTGGGCC TTTTCAGGTC TGGTAATTGG AATGAGTACA
Chlorella UMACC251 ATAAATAACA ATACTGGGCC TTTTCAGGTC TGGTAATTGG AATGAGTACA

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Chlorella UMACC104 ATCTAAACCC CTTAACGAGG ATCAATTGGA GGGCAAGTCT GGTGCCAGCA
Chlorella UMACC245 ATCTAAACCC CTTAACGAGG ATCAATTGGA GGGCAAGTCT GGTGCCAGCA
Chlorella UMACC001 ATCTAAACCC CTTAACGAGG ATCAATTGGA GGGCAAGTCT GGTGCCAGCA
Chlorella UMACC234 ATCTAAACCC CTTAACGAGG ATCAATTGGA GGGCAAGTCT GGTGCCAGCA
Chlorella UMACC250 ATCTAAACCC CTTAACGAGG ATCAATTGGA GGGCAAGTCT GGTGCCAGCA
Chlorella UMACC193 ATCTAAACCC CTTAACGAGG ATCAATTGGA GGGCAAGTCT GGTGCCAGCA
Chlorella UMACC237 ATCTAAACCC CTTAACGAGG ATCAATTGGA GGGCAAGTCT GGTGCCAGCA
Chlorella UMACC050 ATCTAAACCC CTTAACGAGG ATCAATTGGA GGGCAAGTCT GGTGCCAGCA
Chlorella UMACC251 ATCTAAACCC CTTAACGAGG ATCAATTGGA GGGCAAGTCT GGTGCCAGCA

                   ....|....| ....|....| ....|....| ....|....| ....|....|
                          510        520        530        540        550
Chlorella UMACC187 GCCGCGGTAA TTCCAGCTCC AATAGCGTAT ATTTAAGTTG CTGCAGTTAA
Chlorella UMACC103 GCCGCGGTAA TTCCAGCTCC AATAGCGTAT ATTTAAGTTG CTGCAGTTAA
Chlorella UMACC104 GCCGCGGTAA TTCCAGCTCC AATAGCGTAT ATTTAAGTTG CTGCAGTTAA
Chlorella UMACC245 GCCGCGGTAA TTCCAGCTCC AATAGCGTAT ATTTAAGTTG CTGCAGTTAA
Chlorella UMACC001 GCCGCGGTAA TTCCAGCTCC AATAGCGTAT ATTTAAGTTG CTGCAGTTAA
Chlorella UMACC234 GCCGCGGTAA TTCCAGCTCC AATAGCGTAT ATTTAAGTTG CTGCAGTTAA
Chlorella UMACC250 GCCGCGGTAA TTCCAGCTCC AATAGCGTAT ATTTAAGTTG CTGCAGTTAA
Chlorella UMACC193 GCCGCGGTAA TTCCAGCTCC AATAGCGTAT ATTTAAGTTG CTGCAGTTAA
Chlorella UMACC237 GCCGCGGTAA TTCCAGCTCC AATAGCGTAT ATTTAAGTTG CTGCAGTTAA
Chlorella UMACC050 GCCGCGGTAA TTCCAGCTCC AATAGCGTAT ATTTAAGTTG CTGCAGTTAA
Chlorella UMACC 251GCCGCGGTAA TTCCAGCTCC AATAGCGTAT ATTTAAGTTG CTGCAGTTAA

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                          560        570        580        590        600
Chlorella UMACC187 AAAGCTCGTA GTTGGATTTC GGGTGGGGCC TGCCGGTCCG CCGTTTCGGT
Chlorella UMACC103 AAAGCTCGTA GTTGGATTTC GGGTGGGGCC TGCCGGTCCG CCGTTTCGGT
Chlorella UMACC104 AAAGCTCGTA GTTGGATTTC GGGTGGGGCC TGCCGGTCCG CCGTTTCGGT
Chlorella UMACC245 AAAGCTCGTA GTTGGATTTC GGGTGGGGCC TGCCGGTCCG CCGTTTCGGT
Chlorella UMACC001 AAAGCTCGTA GTTGGATTTC GGGTGGGGCC TGCCGGTCCG CCGTTTCGGT
Chlorella UMACC234 AAAGCTCGTA GTTGGATTTC GGGTGGGGCC TGCCGGTCCG CCGTTTCGGT
Chlorella UMACC250 AAAGCTCGTA GTTGGATTTC GGGTGGGGCC TGCCGGTCCG CCGTTTCGGT
Chlorella UMACC193 AAAGCTCGTA GTTGGATTTC GGGTGGGGCC TGCCGGTCCG CCGTTTCGGT
Chlorella UMACC237 AAAGCTCGTA GTTGGATTTC GGGTGGGGCC TGCCGGTCCG CCGTTTCGGT
Chlorella UMACC050 AAAGCTCGTA GTTGGATTTC GGGTGGGGCC TGCCGGTCCG CCGTTTCGGT
Chlorella UMACC251 AAAGCTCGTA GTTGGATTTC GGGTGGGGCC TGCCGGTCCG CCGTTTCGGT

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                          610        620        630        640        650
Chlorella UMACC187 GTGCACTGGC AGGGCCCACC TTGTTGCCGG GGACGGGCTC CTGGGCTTCA
Chlorella UMACC103 GTGCACTGGC AGGGCCCACC TTGTTGCCGG GGACGGGCTC CTGGGCTTCA
Chlorella UMACC104 GTGCACTGGC AGGGCCCACC TTGTTGCCGG GGACGGGCTC CTGGGCTTCA
Chlorella UMACC245 GTGCACTGGC AGGGCCCACC TTGTTGCCGG GGACGGGCTC CTGGGCTTCA
Chlorella UMACC001 GTGCACTGGC AGGGCCCACC TTGTTGCCGG GGACGGGCTC CTGGGCTTCA
Chlorella UMACC234 GTGCACTGGC AGGGCCCACC TTGTTGCCGG GGACGGGCTC CTGGGCTTCA
Chlorella UMACC250 GTGCACTGGC AGGGCCCACC TTGTTGCCGG GGACGGGCTC CTGGGCTTCA
Chlorella UMACC193 GTGCACTGGC AGGGCCCACC TTGTTGCCGG GGACGGGCTC CTGGGCTTCA
Chlorella UMACC237 GTGCACTGGC AGGGCCCACC TTGTTGCCGG GGACGGGCTC CTGGGCTTCA
Chlorella UMACC050 GTGCACTGGC AGGGCCCACC TTGTTGCCGG GGACGGGCTC CTGGGCTTCA
Chlorella UMACC251 GTGCACTGGC AGGGCCCACC TTGTTGCCGG GGACGGGCTC CTGGGCTTCA

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                          660        670        680        690        700
Chlorella UMACC187 CTGTCCGGGA CTCGGAGTCG GCGCTGTTAC TTTGAGTAAA TTAGAGTGTT
Chlorella UMACC103 CTGTCCGGGA CTCGGAGTCG GCGCTGTTAC TTTGAGTAAA TTAGAGTGTT
Chlorella UMACC104 CTGTCCGGGA CTCGGAGTCG GCGCTGTTAC TTTGAGTAAA TTAGAGTGTT
Chlorella UMACC245 CTGTCCGGGA CTCGGAGTCG GCGCTGTTAC TTTGAGTAAA TTAGAGTGTT
Chlorella UMACC001 CTGTCCGGGA CTCGGAGTCG GCGCTGTTAC TTTGAGTAAA TTAGAGTGTT
Chlorella UMACC234 CTGTCCGGGA CTCGGAGTCG GCGCTGTTAC TTTGAGTAAA TTAGAGTGTT
Chlorella UMACC250 CTGTCCGGGA CTCGGAGTCG GCGCTGTTAC TTTGAGTAAA TTAGAGTGTT
Chlorella UMACC193 CTGTCCGGGA CTCGGAGTCG GCGCTGTTAC TTTGAGTAAA TTAGAGTGTT
Chlorella UMACC237 CTGTCCGGGA CTCGGAGTCG GCGCTGTTAC TTTGAGTAAA TTAGAGTGTT
Chlorella UMACC050 CTGTCCGGGA CTCGGAGTCG GCGCTGTTAC TTTGAGTAAA TTAGAGTGTT
Chlorella UMACC251 CTGTCCGGGA CTCGGAGTCG GCGCTGTTAC TTTGAGTAAA TTAGAGTGTT

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                          710        720        730        740        750
Chlorella UMACC187 CAAAGCAGGC CTACGCTCTG AATACATTAG CATGGAATAA CACGATAGGA
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Chlorella UMACC103 CAAAGCAGGC CTACGCTCTG AATACATTAG CATGGAATAA CACGATAGGA
Chlorella UMACC104 CAAAGCAGGC CTACGCTCTG AATACATTAG CATGGAATAA CACGATAGGA
Chlorella UMACC245 CAAAGCAGGC CTACGCTCTG AATACATTAG CATGGAATAA CACGATAGGA
Chlorella UMACC001 CAAAGCAGGC CTACGCTCTG AATACATTAG CATGGAATAA CACGATAGGA
Chlorella UMACC234 CAAAGCAGGC CTACGCTCTG AATACATTAG CATGGAATAA CACGATAGGA
Chlorella UMACC250 CAAAGCAGGC CTACGCTCTG AATACATTAG CATGGAATAA CACGATAGGA
Chlorella UMACC193 CAAAGCAGGC CTACGCTCTG AATACATTAG CATGGAATAA CACGATAGGA
Chlorella UMACC237 CAAAGCAGGC CTACGCTCTG AATACATTAG CATGGAATAA CACGATAGGA
Chlorella UMACC050 CAAAGCAGGC CTACGCTCTG AATACATTAG CATGGAATAA CACGATAGGA
Chlorella UMACC251 CAAAGCAGGC CTACGCTCTG AATACATTAG CATGGAATAA CACGATAGGA

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                          760        770        780        790        800
Chlorella UMACC187 CTCTGGCCTA TCCTGTTGGT CTGTAGGACC GGAGTAATGA TTAAGAGGGA
Chlorella UMACC103 CTCTGGCCTA TCCTGTTGGT CTGTAGGACC GGAGTAATGA TTAAGAGGGA
Chlorella UMACC104 CTCTGGCCTA TCCTGTTGGT CTGTAGGACC GGAGTAATGA TTAAGAGGGA
Chlorella UMACC245 CTCTGGCCTA TCCTGTTGGT CTGTAGGACC GGAGTAATGA TTAAGAGGGA
Chlorella UMACC001 CTCTGGCCTA TCCTGTTGGT CTGTAGGACC GGAGTAATGA TTAAGAGGGA
Chlorella UMACC234 CTCTGGCCTA TCCTGTTGGT CTGTAGGACC GGAGTAATGA TTAAGAGGGA
Chlorella UMACC250 CTCTGGCCTA TCCTGTTGGT CTGTAGGACC GGAGTAATGA TTAAGAGGGA
Chlorella UMACC193 CTCTGGCCTA TCCTGTTGGT CTGTAGGACC GGAGTAATGA TTAAGAGGGA
Chlorella UMACC237 CTCTGGCCTA TCCTGTTGGT CTGTAGGACC GGAGTAATGA TTAAGAGGGA
Chlorella UMACC050 CTCTGGCCTA TCCTGTTGGT CTGTAGGACC GGAGTAATGA TTAAGAGGGA
Chlorella UMACC251 CTCTGGCCTA TCCTGTTGGT CTGTAGGACC GGAGTAATGA TTAAGAGGGA

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                          810        820        830        840        850
Chlorella UMACC187 CAGTCGGGGG CATTCGTATT TCATTGTCAG AGGTGAAATT CTTGGATTTA
Chlorella UMACC103 CAGTCGGGGG CATTCGTATT TCATTGTCAG AGGTGAAATT CTTGGATTTA
Chlorella UMACC104 CAGTCGGGGG CATTCGTATT TCATTGTCAG AGGTGAAATT CTTGGATTTA
Chlorella UMACC245 CAGTCGGGGG CATTCGTATT TCATTGTCAG AGGTGAAATT CTTGGATTTA
Chlorella UMACC001 CAGTCGGGGG CATTCGTATT TCATTGTCAG AGGTGAAATT CTTGGATTTA
Chlorella UMACC234 CAGTCGGGGG CATTCGTATT TCATTGTCAG AGGTGAAATT CTTGGATTTA
Chlorella UMACC250 CAGTCGGGGG CATTCGTATT TCATTGTCAG AGGTGAAATT CTTGGATTTA
Chlorella UMACC193 CAGTCGGGGG CATTCGTATT TCATTGTCAG AGGTGAAATT CTTGGATTTA
Chlorella UMACC237 CAGTCGGGGG CATTCGTATT TCATTGTCAG AGGTGAAATT CTTGGATTTA
Chlorella UMACC050 CAGTCGGGGG CATTCGTATT TCATTGTCAG AGGTGAAATT CTTGGATTTA
Chlorella UMACC251 CAGTCGGGGG CATTCGTATT TCATTGTCAG AGGTGAAATT CTTGGATTTA

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                          860        870        880        890        900
Chlorella UMACC187 TGAAAGACGA ACTACTGCGA AAGCATTTGC CAAGGATGTT TTCATTAATC
Chlorella UMACC103 TGAAAGACGA ACTACTGCGA AAGCATTTGC CAAGGATGTT TTCATTAATC
Chlorella UMACC104 TGAAAGACGA ACTACTGCGA AAGCATTTGC CAAGGATGTT TTCATTAATC
Chlorella UMACC245 TGAAAGACGA ACTACTGCGA AAGCATTTGC CAAGGATGTT TTCATTAATC
Chlorella UMACC001 TGAAAGACGA ACTACTGCGA AAGCATTTGC CAAGGATGTT TTCATTAATC
Chlorella UMACC234 TGAAAGACGA ACTACTGCGA AAGCATTTGC CAAGGATGTT TTCATTAATC
Chlorella UMACC250 TGAAAGACGA ACTACTGCGA AAGCATTTGC CAAGGATGTT TTCATTAATC
Chlorella UMACC193 TGAAAGACGA ACTACTGCGA AAGCATTTGC CAAGGATGTT TTCATTAATC
Chlorella UMACC237 TGAAAGACGA ACTACTGCGA AAGCATTTGC CAAGGATGTT TTCATTAATC
Chlorella UMACC050 TGAAAGACGA ACTACTGCGA AAGCATTTGC CAAGGATGTT TTCATTAATC
Chlorella UMACC251 TGAAAGACGA ACTACTGCGA AAGCATTTGC CAAGGATGTT TTCATTAATC

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                          910        920        930        940        950
Chlorella UMACC187 AAGAACGAAA GTTGGGGGCT CGAAGACGAT TAGATACCGT CCTAGTCTCA
Chlorella UMACC103 AAGAACGAAA GTTGGGGGCT CGAAGACGAT TAGATACCGT CCTAGTCTCA
Chlorella UMACC104 AAGAACGAAA GTTGGGGGCT CGAAGACGAT TAGATACCGT CCTAGTCTCA
Chlorella UMACC245 AAGAACGAAA GTTGGGGGCT CGAAGACGAT TAGATACCGT CCTAGTCTCA
Chlorella UMACC001 AAGAACGAAA GTTGGGGGCT CGAAGACGAT TAGATACCGT CCTAGTCTCA
Chlorella UMACC234 AAGAACGAAA GTTGGGGGCT CGAAGACGAT TAGATACCGT CCTAGTCTCA
Chlorella UMACC250 AAGAACGAAA GTTGGGGGCT CGAAGACGAT TAGATACCGT CCTAGTCTCA
Chlorella UMACC193 AAGAACGAAA GTTGGGGGCT CGAAGACGAT TAGATACCGT CCTAGTCTCA
Chlorella UMACC237 AAGAACGAAA GTTGGGGGCT CGAAGACGAT TAGATACCGT CCTAGTCTCA
Chlorella UMACC050 AAGAACGAAA GTTGGGGGCT CGAAGACGAT TAGATACCGT CCTAGTCTCA
Chlorella UMACC251 AAGAACGAAA GTTGGGGGCT CGAAGACGAT TAGATACCGT CCTAGTCTCA
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                    ....|....| ....|....| ....|....| ....|....| ....|....|
                           960        970        980        990       1000
Chlorella UMACC187 ACCATAAACG ATGCCGACTA GGGATCGGCG GATGTTTCTT CGATGACTCC
Chlorella UMACC103 ACCATAAACG ATGCCGACTA GGGATCGGCG GATGTTTCTT CGATGACTCC
Chlorella UMACC104 ACCATAAACG ATGCCGACTA GGGATCGGCG GATGTTTCTT CGATGACTCC
Chlorella UMACC245 ACCATAAACG ATGCCGACTA GGGATCGGCG GATGTTTCTT CGATGACTCC
Chlorella UMACC001 ACCATAAACG ATGCCGACTA GGGATCGGCG GATGTTTCTT CGATGACTCC
Chlorella UMACC234 ACCATAAACG ATGCCGACTA GGGATCGGCG GATGTTTCTT CGATGACTCC
Chlorella UMACC250 ACCATAAACG ATGCCGACTA GGGATCGGCG GATGTTTCTT CGATGACTCC
Chlorella UMACC193 ACCATAAACG ATGCCGACTA GGGATCGGCG GATGTTTCTT CGATGACTCC
Chlorella UMACC237 ACCATAAACG ATGCCGACTA GGGATCGGCG GATGTTTCTT CGATGACTCC
Chlorella UMACC050 ACCATAAACG ATGCCGACTA GGGATCGGCG GATGTTTCTT CGATGACTCC
Chlorella UMACC251 ACCATAAACG ATGCCGACTA GGGATCGGCG GATGTTTCTT CGATGACTCC

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                          1010       1020       1030       1040       1050
Chlorella UMACC187 GCCGGCACCT TATGAGAAAT CAAAGTTTTT GGGTTCCGGG GGGAGTATGG
Chlorella UMACC103 GCCGGCACCT TATGAGAAAT CAAAGTTTTT GGGTTCCGGG GGGAGTATGG
Chlorella UMACC104 GCCGGCACCT TATGAGAAAT CAAAGTTTTT GGGTTCCGGG GGGAGTATGG
Chlorella UMACC245 GCCGGCACCT TATGAGAAAT CAAAGTTTTT GGGTTCCGGG GGGAGTATGG
Chlorella UMACC001 GCCGGCACCT TATGAGAAAT CAAAGTTTTT GGGTTCCGGG GGGAGTATGG
Chlorella UMACC234 GCCGGCACCT TATGAGAAAT CAAAGTTTTT GGGTTCCGGG GGGAGTATGG
Chlorella UMACC250 GCCGGCACCT TATGAGAAAT CAAAGTTTTT GGGTTCCGGG GGGAGTATGG
Chlorella UMACC193 GCCGGCACCT TATGAGAAAT CAAAGTTTTT GGGTTCCGGG GGGAGTATGG
Chlorella UMACC237 GCCGGCACCT TATGAGAAAT CAAAGTTTTT GGGTTCCGGG GGGAGTATGG
Chlorella UMACC050 GCCGGCACCT TATGAGAAAT CAAAGTTTTT GGGTTCCGGG GGGAGTATGG
Chlorella UMACC251 GCCGGCACCT TATGAGAAAT CAAAGTTTTT GGGTTCCGGG GGGAGTATGG

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                          1060       1070       1080       1090       1100
Chlorella UMACC187 TCGCAAGGCT GAAACTTAAA GGAATTGACG GAAGGGCACC ACCAGGCGTG
Chlorella UMACC103 TCGCAAGGCT GAAACTTAAA GGAATTGACG GAAGGGCACC ACCAGGCGTG
Chlorella UMACC104 TCGCAAGGCT GAAACTTAAA GGAATTGACG GAAGGGCACC ACCAGGCGTG
Chlorella UMACC245 TCGCAAGGCT GAAACTTAAA GGAATTGACG GAAGGGCACC ACCAGGCGTG
Chlorella UMACC001 TCGCAAGGCT GAAACTTAAA GGAATTGACG GAAGGGCACC ACCAGGCGTG
Chlorella UMACC234 TCGCAAGGCT GAAACTTAAA GGAATTGACG GAAGGGCACC ACCAGGCGTG
Chlorella UMACC250 TCGCAAGGCT GAAACTTAAA GGAATTGACG GAAGGGCACC ACCAGGCGTG
Chlorella UMACC193 TCGCAAGGCT GAAACTTAAA GGAATTGACG GAAGGGCACC ACCAGGCGTG
Chlorella UMACC237 TCGCAAGGCT GAAACTTAAA GGAATTGACG GAAGGGCACC ACCAGGCGTG
Chlorella UMACC050 TCGCAAGGCT GAAACTTAAA GGAATTGACG GAAGGGCACC ACCAGGCGTG
Chlorella UMACC251 TCGCAAGGCT GAAACTTAAA GGAATTGACG GAAGGGCACC ACCAGGCGTG

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                          1110       1120       1130       1140       1150
Chlorella UMACC187 GAGCCTGCGG CTTAATTTGA CTCAACACGG GAAAACTTAC CAGGTCCAGA
Chlorella UMACC103 GAGCCTGCGG CTTAATTTGA CTCAACACGG GAAAACTTAC CAGGTCCAGA
Chlorella UMACC104 GAGCCTGCGG CTTAATTTGA CTCAACACGG GAAAACTTAC CAGGTCCAGA
Chlorella UMACC245 GAGCCTGCGG CTTAATTTGA CTCAACACGG GAAAACTTAC CAGGTCCAGA
Chlorella UMACC001 GAGCCTGCGG CTTAATTTGA CTCAACACGG GAAAACTTAC CAGGTCCAGA
Chlorella UMACC234 GAGCCTGCGG CTTAATTTGA CTCAACACGG GAAAACTTAC CAGGTCCAGA
Chlorella UMACC250 GAGCCTGCGG CTTAATTTGA CTCAACACGG GAAAACTTAC CAGGTCCAGA
Chlorella UMACC193 GAGCCTGCGG CTTAATTTGA CTCAACACGG GAAAACTTAC CAGGTCCAGA
Chlorella UMACC237 GAGCCTGCGG CTTAATTTGA CTCAACACGG GAAAACTTAC CAGGTCCAGA
Chlorella UMACC050 GAGCCTGCGG CTTAATTTGA CTCAACACGG GAAAACTTAC CAGGTCCAGA
Chlorella UMACC251 GAGCCTGCGG CTTAATTTGA CTCAACACGG GAAAACTTAC CAGGTCCAGA

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                          1160       1170       1180       1190       1200
Chlorella UMACC187 CATAGTGAGG ATTGACAGAT TGAGAGCTCT TTCTTGATTC TATGGGTGGT
Chlorella UMACC103 CATAGTGAGG ATTGACAGAT TGAGAGCTCT TTCTTGATTC TATGGGTGGT
Chlorella UMACC104 CATAGTGAGG ATTGACAGAT TGAGAGCTCT TTCTTGATTC TATGGGTGGT
Chlorella UMACC245 CATAGTGAGG ATTGACAGAT TGAGAGCTCT TTCTTGATTC TATGGGTGGT
Chlorella UMACC001 CATAGTGAGG ATTGACAGAT TGAGAGCTCT TTCTTGATTC TATGGGTGGT
Chlorella UMACC234 CATAGTGAGG ATTGACAGAT TGAGAGCTCT TTCTTGATTC TATGGGTGGT
Chlorella UMACC250 CATAGTGAGG ATTGACAGAT TGAGAGCTCT TTCTTGATTC TATGGGTGGT
Chlorella UMACC193 CATAGTGAGG ATTGACAGAT TGAGAGCTCT TTCTTGATTC TATGGGTGGT
Chlorella UMACC237 CATAGTGAGG ATTGACAGAT TGAGAGCTCT TTCTTGATTC TATGGGTGGT
Chlorella UMACC050 CATAGTGAGG ATTGACAGAT TGAGAGCTCT TTCTTGATTC TATGGGTGGT
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Chlorella UMACC251 CATAGTGAGG ATTGACAGAT TGAGAGCTCT TTCTTGATTC TATGGGTGGT

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                   1210       1220       1230       1240       1250
Chlorella UMACC187 GGTGCATGGC CGTTCTTAGT TGGTGGGTTG CCTTGTCAGG TTGATTCCGG
Chlorella UMACC103 GGTGCATGGC CGTTCTTAGT TGGTGGGTTG CCTTGTCAGG TTGATTCCGG
Chlorella UMACC104 GGTGCATGGC CGTTCTTAGT TGGTGGGTTG CCTTGTCAGG TTGATTCCGG
Chlorella UMACC245 GGTGCATGGC CGTTCTTAGT TGGTGGGTTG CCTTGTCAGG TTGATTCCGG
Chlorella UMACC001 GGTGCATGGC CGTTCTTAGT TGGTGGGTTG CCTTGTCAGG TTGATTCCGG
Chlorella UMACC234 GGTGCATGGC CGTTCTTAGT TGGTGGGTTG CCTTGTCAGG TTGATTCCGG
Chlorella UMACC250 GGTGCATGGC CGTTCTTAGT TGGTGGGTTG CCTTGTCAGG TTGATTCCGG
Chlorella UMACC193 GGTGCATGGC CGTTCTTAGT TGGTGGGTTG CCTTGTCAGG TTGATTCCGG
Chlorella UMACC237 GGTGCATGGC CGTTCTTAGT TGGTGGGTTG CCTTGTCAGG TTGATTCCGG
Chlorella UMACC050 GGTGCATGGC CGTTCTTAGT TGGTGGGTTG CCTTGTCAGG TTGATTCCGG
Chlorella UMACC251 GGTGCATGGC CGTTCTTAGT TGGTGGGTTG CCTTGTCAGG TTGATTCCGG

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                 1260       1270       1280       1290       1300
Chlorella UMACC187 TAACGAACGA GACCTCAGCC TGCTAAATAG TCACGGTTGG CTCGCCAGCC
Chlorella UMACC103 TAACGAACGA GACCTCAGCC TGCTAAATAG TCACGGTTGG CTCGCCAGCC
Chlorella UMACC104 TAACGAACGA GACCTCAGCC TGCTAAATAG TCACGGTTGG CTCGCCAGCC
Chlorella UMACC245 TAACGAACGA GACCTCAGCC TGCTAAATAG TCACGGTTGG CTCGCCAGCC
Chlorella UMACC001 TAACGAACGA GACCTCAGCC TGCTAAATAG TCACGGTTGG CTCGCCAGCC
Chlorella UMACC234 TAACGAACGA GACCTCAGCC TGCTAAATAG TCACGATTGG CTCGCCAGCC
Chlorella UMACC250 TAACGAACGA GACCTCAGCC TGCTAAATAG TCACGGTTGG CTCGCCAGCC
Chlorella UMACC193 TAACGAACGA GACCTCAGCC TGCTAAATAG TCACGGTTGG CTCGCCAGCC
Chlorella UMACC237 TAACGAACGA GACCTCAGCC TGCTAAATAG TCACGATTGG CTCGCCAGCC
Chlorella UMACC050 TAACGAACGA GACCTCAGCC TGCTAAATAG TCACGGTTGG CTCGCCAGCC
Chlorella UMACC251 TAACGAACGA GACCTCAGCC TGCTAAATAG TCACGGTTGG CTCGCCAGCC

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                   1310       1320       1330       1340       1350
Chlorella UMACC187 GGCGGACTTC TTAGAGGGAC TATTGGCGAC TAGCCAATGG AAGCATGAGG
Chlorella UMACC103 GGCGGACTTC TTAGAGGGAC TATTGGCGAC TAGCCAATGG AAGCATGAGG
Chlorella UMACC104 GGCGGACTTC TTAGAGGGAC TATTGGCGAC TAGCCAATGG AAGCATGAGG
Chlorella UMACC245 GGCGGACTTC TTAGAGGGAC TATTGGCGAC TAGCCAATGG AAGCATGAGG
Chlorella UMACC001 GGCGGACTTC TTAGAGGGAC TATTGGCGAC TAGCCAATGG AAGCATGAGG
Chlorella UMACC234 GGCGGACTTC TTAGAGGGAC TATTGGCGAC TAGCCAATGG AAGCATGAGG
Chlorella UMACC250 GGCGGACTTC TTAGAGGGAC TATTGGCGAC TAGCCAATGG AAGCATGAGG
Chlorella UMACC193 GGCGGACTTC TTAGAGGGAC TATTGGCGAC TAGCCAATGG AAGCATGAGG
Chlorella UMACC237 GGCGGACTTC TTAGAGGGAC TATTGGCGAC TAGCCAATGG AAGCATGAGG
Chlorella UMACC050 GGCGGACTTC TTAGAGGGAC TATTGGCGAC TAGCCAATGG AAGCATGAGG
Chlorella UMACC251 GGCGGACTTC TTAGAGGGAC TATTGGCGAC TAGCCAATGG AAGCATGAGG

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                   1360       1370       1380       1390       1400
Chlorella UMACC187 CAATAACAGG TCTGTGATGC CCTTAGATGT TCTGGGCCGC ACGCGCGCTA
Chlorella UMACC103 CAATAACAGG TCTGTGATGC CCTTAGATGT TCTGGGCCGC ACGCGCGCTA
Chlorella UMACC104 CAATAACAGG TCTGTGATGC CCTTAGATGT TCTGGGCCGC ACGCSCGCTA
Chlorella UMACC245 CAATAACAGG TCTGTGATGC CCTTAGATGT TCTGGGCCGC ACGCGCGCTA
Chlorella UMACC001 CAATAACAGG TCTGTGATGC CCTTAGATGT TCTGGGCCGC ACGCGCGCTA
Chlorella UMACC234 CAATAACAGG TCTGTGATGC CCTTAGATGT TCTGGGCCGC ACGCGCGCTA
Chlorella UMACC250 CAATAACAGG TCTGTGATGC CCTTAGATGT TCTGGGCCGC ACGCGCGCTA
Chlorella UMACC193 CAATAACAGG TCTGTGATGC CCTTAGATGT TCTGGGCCGC ACGCGCGCTA
Chlorella UMACC237 CAATAACAGG TCTGTGATGC CCTTAGATGT TCTGGGCCGC ACGCGCGCTA
Chlorella UMACC050 CAATAACAGG TCTGTGATGC CCTTAGATGT TCTGGGCCGC ACGCGCGCTA
Chlorella UMACC251 CAATAACAGG TCTGTGATGC CCTTAGATGT TCTGGGCCGC ACGCGCGCTA

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                  1410       1420       1430       1440       1450
Chlorella UMACC187 CACTGATGCA TTCAACGAGC CTAGCCTTGG CCGAGAGGCC CGGGTAATCT
Chlorella UMACC103 CACTGATGCA TTCAACGAGC CTAGCCTTGG CCGAGAGGCC CGGGTAATCT
Chlorella UMACC104 CACTGATGCA TTCAACGAGC CTAGCCTTGG CCGAGAGGCC CGGGTAATCT
Chlorella UMACC245 CACTGATGCA TTCAACGAGC CTAGCCTTGG CCGAGAGGCC CGGGTAATCT
Chlorella UMACC001 CACTGATGCA TTCAACGAGC CTAGCCTTGG CCGAGAGGCC CGGGTAATCT
Chlorella UMACC234 CACTGATGCA TTCAACGAGC TTAGCCTTGG CCGAGAGGCC CGGGTAATCT
Chlorella UMACC250 CACTGATGCA TTCAACGAGC CTAGCCTTGG CCGAGAGGCC CGGGTAATCT
Chlorella UMACC193 CACTGATGCA TTCAACGAGC CTAGCCTTGG CCGAGAGGCC CGGGTAATCT
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Chlorella UMACC237 CACTGATGCA TTCAACGAGC TTAGCCTTGG CCGAGAGGCC CGGGTAATCT
Chlorella UMACC050 CACTGATGCA TTCAACGAGC CTAGCCTTGG CCGAGAGGCC CGGGTAATCT
Chlorella UMACC251 CACTGATGCA TTCAACGAGC CTAGCCTTGG CCGAGAGGCC CGGGTAATCT

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                          1460       1470       1480       1490       1500
Chlorella UMACC187 TTGAAACTGC ATCGTGATGG GGATAGATTA TTGCAATTAT TAATCTTCAA
Chlorella UMACC103 TTGAAACTGC ATCGTGATGG GGATAGATTA TTGCAATTAT TAATCTTCAA
Chlorella UMACC104 TTGAAACTGC ATCGTGATGG GGATAGATTA TTGCAATTAT TAATCTTCAA
Chlorella UMACC245 TTGAAACTGC ATCGTGATGG GGATAGATTA TTGCAATTAT TAATCTTCAA
Chlorella UMACC001 TTGAAACTGC ATCGTGATGG GGATAGATTA TTGCAATTAT TAATCTTCAA
Chlorella UMACC234 TTGAAACTGC ATCGTGATGG GGATAGATTA TTGCAATTAT TAATCTTCAA
Chlorella UMACC250 TTGAAACTGC ATCGTGATGG GGATAGATTA TTGCAATTAT TAATCTTCAA
Chlorella UMACC193 TTGAAACTGC ATCGTGATGG GGATAGATTA TTGCAATTAT TAATCTTCAA
Chlorella UMACC237 TTGAAACTGC ATCGTGATGG GGATAGATTA TTGCAATTAT TAATCTTCAA
Chlorella UMACC050 TTGAAACTGC ATCGTGATGG GGATAGATTA TTGCAATTAT TAATCTTCAA
Chlorella UMACC251 TTGAAACTGC ATCGTGATGG GGATAGATTA TTGCAATTAA TAATCTTCAA

                   ....|....| ....|....| ....|....| ....|....| ....|...
                          1510       1520       1530       1540       1550
Chlorella UMACC187 CGAGGAATGC CTAGTAAGCG CAAGTCATCA GCTTGCGTTG ATTACGTCCC
Chlorella UMACC103 CGAGGAATGC CTAGTAAGCG CAAGTCATCA GCTTGCGTTG ATTACGTCCC
Chlorella UMACC104 CGAGGAATGC CTAGTAAGCG CAAGTCATCA GCTTGCGTTG ATTACGTCCC
Chlorella UMACC245 CGAGGAATGC CTAGTAAGCG CAAGTCATCA GCTTGCGTTG ATTACGTCCC
Chlorella UMACC001 CGAGGAATGC CTAGTAAGCG CAAGTCATCA GCTTGCGTTG ATTACGTCCC
Chlorella UMACC234 CGAGGAATGC CTAGTAAGCG CAAGTCATCA GCTTGCGTTG ATTACGTCCC
Chlorella UMACC250 CGAGGAATGC CTAGTAAGCG CAAGTCATCA GCTTGCGTTG ATTACGTCCC
Chlorella UMACC193 CGAGGAATGC CTAGTAAGCG CAAGTCATCA GCTTGCGTTG ATTACGTCCC
Chlorella UMACC237 CGAGGAATGC CTAGTAAGCG CAAGTCATCA GCTTGCGTTG ATTACGTCCC
Chlorella UMACC050 CGAGGAATGC CTAGTAAGCG CAAGTCATCA GCTTGCGTTG ATTACGTCCC
Chlorella UMACC251 CGAGGAATGC CTAGTAAGCG CAAGTCATCA GCTTGCGTTG ATTACGTCCC

                   ....|....| ....|....| ....|....| ....|....| ....|....|
                          1560       1570       1580       1590       1600
Chlorella UMACC187 TGCCCTTTGT ACACACCGCC CGTCGCTCCT ACCGATTGGG TGTGCTGGTG
Chlorella UMACC103 TGCCCTTTGT ACACACCGCC CGTCGCTCCT ACCGATTGGG TGTGCTGGTG
Chlorella UMACC104 TGCCCTTTGT ACACACCGCC CGTCGCTCCT ACCGATTGGG TGTGCTGGTG
Chlorella UMACC245 TGCCCTTTGT ACACACCGCC CGTCGCTCCT ACCGATTGGG TGTGCTGGTG
Chlorella UMACC001 TGCCCTTTGT ACACACCGCC CGTCGCTCCT ACCGATTGGG TGTGCTGGTG
Chlorella UMACC234 TGCCCTTTGT ACACACCGCC CGTCGCTCCT ACCGATTGGG TGTGCTGGTG
Chlorella UMACC250 TGCCCTTTGT ACACACCGCC CGTCGCTCCT ACCGATTGGG TGTGCTGGTG
Chlorella UMACC193 TGCCCTTTGT ACACACCGCC CGTCGCTCCT ACCGATTGGG TGTGCTGGTG
Chlorella UMACC237 TGCCCTTTGT ACACACCGCC CGTCGCTCCT ACCGATTGGG TGTGCTGGTG
Chlorella UMACC050 TGCCCTTTGT ACACACCGCC CGTCGCTCCT ACCGATTGGG TGTGCTGGTG
Chlorella UMACC251 TGCCCTTTGT ACACACCGCC CGTCGCTCCT ACCGATTGGG TGTGCTGGTG

                   ....|....| ....|....| ....|....| ....|....| ....|....|
                          1610       1620       1630       1640       1650
Chlorella UMACC187 AAGTGTTCGG ATTGGCGACC GGGGGCGGTC TCCGCTCTCG GCCGCCGAGA
Chlorella UMACC103 AAGTGTTCGG ATTGGCGACC GGGGGCGGTC TCCGCTCTCG GCCGCCGAGA
Chlorella UMACC104 AAGTGTTCGG ATTGGCGACC GGGGGCGGTC TCCGCTCTCG GCCGCCGAGA
Chlorella UMACC245 AAGTGTTCGG ATTGGCGACC GGGGGCGGTC TCCGCTCTCG GCCGCCGAGA
Chlorella UMACC001 AAGTGTTCGG ATTGGCGACC GGGGGCGGTC TCCGCTCTCG GCCGCCGAGA
Chlorella UMACC234 AAGTGTTCGG ATTGGCGACT GGGGGCGGTC TCCGCTCTCA GCCGCCGAAA
Chlorella UMACC250 AAGTGTTCGG ATTGGCGACC GGGGGCGGTC TCCGCTCTCG GCCGCCGAGA
Chlorella UMACC193 AAGTGTTCGG ATTGGCGACC GGGGGCGGTC TCCGCTCTCG GCCGCCGAGA
Chlorella UMACC237 AAGTGTTCGG ATTGGCGACT GGGGGCGGTC TCCGCTCTCA GCCGCCGAGA
Chlorella UMACC050 AAGTGTTCGG ATTGGCGACC GGGGGCGGTC TCCGCTCTCG GCCGCCGAGA
Chlorella UMACC251 AAGTGTTCGG ATTGGCGACC GGGGGCGGTC TCCGCTCTCG GCCGCCGAGA

                   ....|....| ....|....| ....|....| ....|....| ....|....|
                          1660       1670       1680       1690       1700
Chlorella UMACC187 AGTTC..... .......... .......... .......... ..........
Chlorella UMACC103 AGTTC..... .......... .......... .......... ..........
Chlorella UMACC104 AGTTC..... .......... .......... .......... ..........
Chlorella UMACC245 AGTTC..... .......... .......... .......... ..........
Chlorella UMACC001 AGTTC..... .......... .......... .......... ..........
Chlorella UMACC234 AGTTC..... .......... .......... .......... ..........
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Chlorella UMACC250 AGTTC..... .......... .......... .......... ..........
Chlorella UMACC193 AGTTC..... .......... .......... .......... ..........
Chlorella UMACC237 AGTTC..... .......... .......... .......... ..........
Chlorella UMACC050 AGTTC..... .......... .......... .......... ..........
Chlorella UMACC251 AGTTC..... .......... .......... .......... ..........
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