Dataset S8. Dark respiration rates in eukaryotic microalgae

Notes to Table **S8**:

Data on dark respiration rates in unicellular, non-filamentous eukaryotic microalgae are presented. Taxonomic status (the **"Phylum: Class"** column) was determined for each genus following www.algaebase.org .

Abbreviations and universal conversions: DM – dry mass; WM – wet mass; N – nitrogen mass; Chl a – Chl a mass; C – carbon mass; Pr – protein mass; X/Y – X by Y mass ratio in the cell, e.g. DM/WM is the ratio of dry to wet cell mass; X/V – the ratio of variable X to volume, pg μm^3, e.g. N/V is how many pg nitrogen is contained in 1 μm^3 of cell volume; X/cell is the amount of X in one cell, pg; 1 W = 1 J s^{-1}; 1 mol O_2 = 32 g O_2; 1 mol C = 12 g C.

Column **"U"** (mass units of respiration rate measurements): D – dry mass or Chl a mass with known Chl a/DM ratio; W – wet mass without information on DM/WM ratio; Chl – chlorophyll mass without information on Chl a/DM ratio; Pr – protein mass; C – carbon mass.

"Original units" are the units of dark respiration rate measurements as given in the original publication (**"Source"**); **qou** is the numeric value of dark respiration rate in the original units. E.g., if it is "mg O_2 (g DM)$^{-1}$ hr^{-1}" in the column **"Original units"** and "1.1" in the column **"qou"**, this means that dark respiration rate of the corresponding species, as given in the original publication indicated in the column **"Source"**, is 1.1 mg O_2 (g DM)$^{-1}$ hr^{-1}.

qWkg is dark respiration rate converted to W (kg WM)$^{-1}$ (Watts per kg wet mass) using the following conversion factors: C/DM = 0.5 (Kratz & Myers 1955; Bratbak & Dundas 1984; Stal & Moezelaar 1997), Chl a/DM = 0.015 (APHA 1992), Pr/DM = 0.5 (Otte et al. 1999; Zubkov et al. 1999; Stal & Moezelaar 1997) and DM/WM = 0.3 as a crude mean for all taxa applied in the analysis (SI Methods, Table S12a). If the Chl a/DM ratio is known (shown in the **"Comments"** column), while **qou** is per unit Chl a mass, the dark respiration rate is first calculated per unit dry mass and then converted to **qWkg** using the reference DM/WM = 0.3. Energy conversion: 1 ml O_2 = 20 J. Where **qou** is calculated on cell basis, and carbon content of the cell is known, **qWkg** is first expressed per unit carbon mass and then per unit wet mass using the conversion factors above, rather than obtained by dividing by the known cell mass.

TC is ambient temperature during measurements, degrees Celsius.

q25Wkg is dark respiration rate converted to 25 °C using Q_{10} = 2, **q25Wkg** = **qWkg** $\times 2^{(25 - TC)/10}$, dimension W (kg WM)$^{-1}$. For each species rows are arranged in the order of increasing **q25Wkg**.

MIN – indicates the minimum **q25Wkg** value for each species, that was used in the analyses in the paper.

Mpg: estimated cell mass, pg (1 pg = 10^{-12} g). Square brackets around **Mpg** value indicate that this value was obtained from a different source than the source of dark respiration rate data. When converting cell volume to cell mass, cell density of 1 g ml^{-1} was assumed.

Source: the first, unbracketed reference in this column is where the value of **qou** is taken from; references and data in square brackets refer to cell size determination.

Growth rate, day^{-1}: this column contains available growth rates as well as other information on culture conditions, including illumination (it is given in braces, where available, e.g. 150 μmol m^{-2} s^{-1}); Log – logarithmic, exp – exponential, stat – stationary phase of cell cycle.

Comments: information on cell composition

qN: dark respiration rate per unit nitrogen mass, **100 W (kg N)$^{-1}$**. I.e., **qN** = 5 means that dark respiration rate is 500 W (kg N)$^{-1}$. Where available, values of **qN** corresponding to minimal **q25Wkg** values (those in MIN rows), were converted to 25 °C in the same manner as **qWkg** (using Q_{10} = 2) Analysis of these **directly available** nitrogen-based dark respiration rates (17 temperature-transformed values for 17 species) yielded a geometric mean value of $q_N = 4\times10^2$ W (kg N)$^{-1}$, in good agreement with the value of 3.7×10^2 W (kg N)$^{-1}$ in Table 1 of the paper, that was obtained by transforming mean data set **q25Wkg** value (8.8 W (kg WM)$^{-1}$, n = 47) with use of mean conversion coefficients as qN = **q25Wkg**/0.3/0.08, where 0.3 = DM/WM and 0.08 = N/DM. The value of N/DM = 0.08 was calculated for the studied species with the known N/C ratio assuming C/DM = 0.5 (SI Methods, Table S12b).

Log_{10}-transformed values of **q25Wkg** (W (kg WM)$^{-1}$), minimum for each species, were used in the analyses shown in Figures 1-2 and Table 1 in the paper (a total of 47 values for n = 47 species). These values are in rows marked **MIN** and highlighted in blue.

Species	U	MIN	Original units	qou	qWkg	TC	q25Wkg	Mpg	Phylum: Class	Source	Growth rate, day^{-1}	Comments	qN
1. Asterionella formosa	W	MIN	mg O_2 (10^9 cells)$^{-1}$ hr^{-1}	0.17	1.613	10	4.562	410	Bacillariophyta: Fragilariophyceae	Talling 1957			
2. Asterionella formosa	W		mg O_2 (10^9 cells)$^{-1}$ hr^{-1}	0.23	2.182	14	4.677	410	Bacillariophyta: Fragilariophyceae	Talling 1957			
3. Asterionella formosa	W		mg O_2 (10^9 cells)$^{-1}$ hr^{-1}	0.21	1.992	11	5.257	410	Bacillariophyta: Fragilariophyceae	Talling 1957			
4. Asterionella formosa	W		mg O_2 (10^9 cells)$^{-1}$ hr^{-1}	0.24	2.276	11	6.006	410	Bacillariophyta: Fragilariophyceae	Talling 1957			
5. Asterionella formosa	W		mg O_2 (10^9 cells)$^{-1}$ hr^{-1}	0.35	3.320	16	6.195	410	Bacillariophyta: Fragilariophyceae	Talling 1957			

6. Asterionella formosa	W		mg O_2 (10^9 cells)$^{-1}$ hr^{-1}	0.21	2.094	7	7.292	390	Bacillariophyta: Fragilariophyceae	Talling 1957			
7. Asterionella formosa	W		mg O_2 (10^9 cells)$^{-1}$ hr^{-1}	0.21	1.992	6	7.434	410	Bacillariophyta: Fragilariophyceae	Talling 1957			
8. Asterionella formosa	W		mg O_2 (10^9 cells)$^{-1}$ hr^{-1}	0.20	1.897	5	7.588	410	Bacillariophyta: Fragilariophyceae	Talling 1957			
9. Asterionella formosa	W		mg O_2 (10^9 cells)$^{-1}$ hr^{-1}	0.41	3.889	10	11.000	410	Bacillariophyta: Fragilariophyceae	Talling 1957			
10. Asterionella formosa	W		mg O_2 (10^9 cells)$^{-1}$ hr^{-1}	0.85	8.063	16	15.046	410	Bacillariophyta: Fragilariophyceae	Talling 1957			
11. Asterionella formosa	W		mg O_2 (10^9 cells)$^{-1}$ hr^{-1}	0.45	4.268	5	17.072	410	Bacillariophyta: Fragilariophyceae	Talling 1957			
12. Chaetoceros furcellatus	C	MIN	g C (g cell C)$^{-1}$ hr^{-1}	0.00048	0.75	0.5	4.098	[150]	Bacillariophyta: Coscinodiscophyceae	Sakshaug et al. 1991 [calculated assuming C/V=0.15 pg/μm^3]	0.09	N/cell=3.8 pg C/cell=22 pg Chl a/cell=0.79 pg	0.2
13. Chaetoceros furcellatus	C		g C (g cell C)$^{-1}$ hr^{-1}	0.0017	2.6	0.5	14.207	[300]	Bacillariophyta: Coscinodiscophyceae	Sakshaug et al. 1991 [calculated assuming C/V=0.15 pg/μm^3]	0.12	N/cell=8.9 pg C/cell=47 pg Chl a/cell=0.94 pg	0.9
14. Chaetoceros furcellatus	C		g C (g cell C)$^{-1}$ hr^{-1}	0.0028	4.4	0.5	24.042	[130]	Bacillariophyta: Coscinodiscophyceae	Sakshaug et al. 1991 [calculated assuming C/V=0.15 pg/μm^3]	0.32	N/cell=2.9 pg C/cell=19 pg Chl a/cell=0.39 pg	1.9
15. Chaetoceros furcellatus	C		g C (g cell C)$^{-1}$ hr^{-1}	0.0036	5.6	0.5	30.599	[200]	Bacillariophyta: Coscinodiscophyceae	Sakshaug et al. 1991 [calculated assuming C/V=0.15 pg/μm^3]	0.30	N/cell=4.9 pg C/cell=32 pg Chl a/cell=0.23 pg	2.4
16. Chlamydomonas reinhardtii	Chl	MIN	mmol O_2 (mol Chl)$^{-1}$ s^{-1}	4	9	22	11.080	[2000]	Chlorophyta: Chlorophyceae	Polle et al. 2001 [http://protist.i.hosei.ac.jp]		1 mol Chl=893.5 g Chl/cell=3.9 pg	
17. Chlamydomonas reinhardtii	Chl		mmol O_2 (mol Chl)$^{-1}$ s^{-1}	26.7	15	25	15.000	[2000]	Chlorophyta: Chlorophyceae	Coleman & Colman 1980 [http://protist.i.hosei.ac.jp]			
18. Chlamydomonas reinhardtii	Chl		mmol O_2 (mol Chl)$^{-1}$ s^{-1}	54.9	31	35	15.500	[2000]	Chlorophyta: Chlorophyceae	Coleman & Colman 1980 [http://protist.i.hosei.ac.jp]			
19. Chlamydomonas reinhardtii	Chl		mmol O_2 (mol Chl)$^{-1}$ s^{-1}	17.3	9.7	15	19.400	[2000]	Chlorophyta: Chlorophyceae	Coleman & Colman 1980 [http://protist.i.hosei.ac.jp]			
20. Chlorella kessleri	Chl	MIN	μmol O_2 (mg Chl)$^{-1}$ hr^{-1}	25	14	27	12.188	[90]	Chlorophyta: Trebouxiophyceae	Hammouda & El-Sheekh 1994 [Lee & Lee 2001, Fig. 1b; Krienitz et al. 2004, Fig. 8, diam 5-6 μm]			
21. Chlorella pyrenoidosa	Chl	MIN	μmol O_2 (mg Chl a)$^{-1}$ hr^{-1}	9.9/9.0	0.6	24	0.643		Chlorophyta: Trebouxiophyceae	Burris 1977	late exp/ early stat		

22. Chlorella pyrenoidosa	W		μl O_2 (0.2 g WM)$^{-1}$ (30 min)$^{-1}$	20	1	25	1.000		Chlorophyta: Trebouxiophyceae	Gest & Kamen 1948			
23. Chlorella pyrenoidosa	D		μl O_2 (mg DM)$^{-1}$ hr^{-1}	4.6	7.7	25	7.700	30	Chlorophyta: Trebouxiophyceae	Myers & Graham 1971	0.35	DM/V=0.179 pg/μm^3 Chl/DM=5.19%	
24. Chlorella pyrenoidosa	D		μmol O_2 (g DM)$^{-1}$ min^{-1}	4.14	9.3	25	9.300		Chlorophyta: Trebouxiophyceae	Pickett 1975	0.282		
25. Chlorella pyrenoidosa	D		μl O_2 (mg DM)$^{-1}$ hr^{-1}	5.9	9.8	25	9.800	32	Chlorophyta: Trebouxiophyceae	Myers & Graham 1971	0.78	DM/V=0.197 pg/μm^3 Chl/DM=4.52%	
26. Chlorella pyrenoidosa	D		μmol O_2 (g DM)$^{-1}$ min^{-1}	5.00	11.2	25	11.200		Chlorophyta: Trebouxiophyceae	Pickett 1975	0.361		
27. Chlorella pyrenoidosa	D		μmol O_2 (g DM)$^{-1}$ min^{-1}	5.16	11.6	25	11.600		Chlorophyta: Trebouxiophyceae	Pickett 1975	0.439		
28. Chlorella pyrenoidosa	D		μl O_2 (mg DM)$^{-1}$ hr^{-1}	8.7	15	25	15.000	34	Chlorophyta: Trebouxiophyceae	Myers & Graham 1971	1.3	DM/V=0.215 pg/μm^3 Chl/DM=3.92%	
29. Chlorella pyrenoidosa	D		μmol O_2 (g DM)$^{-1}$ min^{-1}	7.43	16.6	25	16.600		Chlorophyta: Trebouxiophyceae	Pickett 1975	0.613		
30. Chlorella pyrenoidosa	D		μl O_2 (mg DM)$^{-1}$ hr^{-1}	11.2	19	25	19.000	49	Chlorophyta: Trebouxiophyceae	Myers & Graham 1971	1.8	DM/V=0.252 pg/μm^3 Chl/DM=3.10%	
31. Chlorella pyrenoidosa	D		μl O_2 (mg DM)$^{-1}$ hr^{-1}	11.9	20	25	20.000	92	Chlorophyta: Trebouxiophyceae	Myers & Graham 1971	2.3	DM/V=0.256 pg/μm^3 Chl/DM=1.53%	
32. Chlorella pyrenoidosa	D		μl O_2 (mg DM)$^{-1}$ hr^{-1}	13.8	23	25	23.000	75	Chlorophyta: Trebouxiophyceae	Myers & Graham 1971	2.4	DM/V=0.242 pg/μm^3 Chl/DM=1.14%	
33. Coscinodiscus sp. C38B	C	MIN	g C (g cell C)$^{-1}$ hr^{-1}	0.0038	5.9	18	9.585	275000	Bacillariophyta: Coscinodiscophyceae	Blasco et al. 1982	0.62; Log	C/V=0.044 pg/μm^3 C/N=7.9 Chl a/C=0.93%	3.1
34. Coscinodiscus sp. CoA	C	MIN	g C (g cell C)$^{-1}$ hr^{-1}	0.0035	5.4	18	8.772	6200000	Bacillariophyta: Coscinodiscophyceae	Blasco et al. 1982	0.55; Log	C/V=0.026 pg/μm^3 C/N=6.7 Chl a/C=1.33%	2.4
35. Ditylum brightwellii	C	MIN	g C (g cell C)$^{-1}$ hr^{-1}	0.0019	3.0	18	4.874	118000	Bacillariophyta: Coscinodiscophyceae	Blasco et al. 1982	1.0; one division away from stationary phase	C/V=0.023 pg/μm^3 C/N=5.9 Chl a/C=1.41%	1.2
36. Dunaliella salina	W	MIN	ml O_2 (10^8 cells)$^{-1}$ hr^{-1}	1.08	4	20	5.657	1570	Chlorophyta: Chlorophyceae	Vladimirova & Zotin 1983, 1985 (data of Mironyuk & Einor 1968)			
37. Dunaliella salina	Chl		μmol O_2 (mg Chl)$^{-1}$ hr^{-1}	33.5	18	24	19.292		Chlorophyta: Chlorophyceae	Liska 2004			
38. Dunaliella tertiolecta	C	MIN	10^{-5} mol O_2 (mol C)$^{-1}$ s^{-1}	0.17	9.5	18	15.433	[120]	Chlorophyta: Chlorophyceae	Quigg & Beardall 2003 [Sciandra et al. 1997, Fig. 1]	0.2	Chl a/C=6.9% Pr/cell=15.8 pg C/N=4.4	2.8
39. Dunaliella tertiolecta	C		μmol O_2 cell^{-1} min^{-1} × 10^{10} at 40 pg C per cell	3.1	8.7	15	17.400	69	Chlorophyta: Chlorophyceae	Falkowski & Owens 1980	0; Log	C/V=0.580 pg/μm^3 C/N=3.1	1.8
40. Dunaliella tertiolecta	C		μmol O_2 cell^{-1} min^{-1} × 10^{10} at 41 pg C per cell	4.0	11	15	22.000	73	Chlorophyta: Chlorophyceae	Falkowski & Owens 1980	0; Log	C/V=0.562 pg/μm^3 C/N=3.0	2.2

41. Dunaliella tertiolecta	C		μmol O_2 cell^{-1} min^{-1} × 10^{10} at 37 pg C per cell	5.2	16	15	32.000	84	Chlorophyta: Chlorophyceae	Falkowski & Owens 1980	0.09; Log	C/V=0.440 pg/μm^3 C/N=3.2	3.4
42. Dunaliella tertiolecta	C		10^{-5} mol O_2 (mol C)$^{-1}$ s^{-1}	0.48	27	18	43.862	[120]	Chlorophyta: Chlorophyceae	Quigg & Beardall 2003 [Sciandra et al. 1997, Fig. 1]	0.7	Chl a/C=8.4% Pr/cell=8.24 pg C/N=7.6	14
43. Dunaliella tertiolecta	C		μmol O_2 cell^{-1} min^{-1} × 10^{10} at 31 pg C per cell	7.2	26	15	52.000	90	Chlorophyta: Chlorophyceae	Falkowski & Owens 1980	0.42; Log	C/V=0.341 pg/μm^3 C/N=3.4	5.9
44. Dunaliella tertiolecta	C		10^{-5} mol O_2 (mol C)$^{-1}$ s^{-1}	0.61	34	18	55.233	[120]	Chlorophyta: Chlorophyceae	Quigg & Beardall 2003 [Sciandra et al. 1997, Fig. 1]	0.3	Chl a/C=6.6% Pr/cell=8.75 pg C/N=5.6	13
45. Dunaliella tertiolecta	C		μmol O_2 cell^{-1} min^{-1} × 10^{10} at 28 pg C per cell	7.3	29	15	58.000	104	Chlorophyta: Chlorophyceae	Falkowski & Owens 1980	0.66; Log	C/V=0.269 pg/μm^3 C/N=3.8	7.4
46. Dunaliella tertiolecta	C		μmol O_2 cell^{-1} min^{-1} × 10^{10} at 30 pg C per cell	8.4	31	15	62.000	112	Chlorophyta: Chlorophyceae	Falkowski & Owens 1980	0.87; Log	C/V=0.269 pg/μm^3 C/N=4.1	8.6
47. Dunaliella tertiolecta	C		10^{-5} mol O_2 (mol C)$^{-1}$ s^{-1}	0.72	40	18	64.980	[120]	Chlorophyta: Chlorophyceae	Quigg & Beardall 2003 [Sciandra et al. 1997, Fig. 1]	1.1	Chl a/C=7.2% Pr/cell=8.12 pg C/N=2.6	6.9
48. Dunaliella tertiolecta	C		μmol O_2 cell^{-1} min^{-1} × 10^{10} at 29 pg C per cell	8.9	34	15	68.000	115	Chlorophyta: Chlorophyceae	Falkowski & Owens 1980	1.25; Log	C/V=0.252 pg/μm^3 C/N=5.3	12
49. Dunaliella tertiolecta	C		10^{-5} mol O_2 (mol C)$^{-1}$ s^{-1}	1.6	90	18	146.205	[120]	Chlorophyta: Chlorophyceae	Quigg & Beardall 2003 [Sciandra et al. 1997, Fig. 1]	1.0	Chl a/C=10.3% C/N=4.2	25
50. Dunaliella tertiolecta	C		10^{-5} mol O_2 (mol C)$^{-1}$ s^{-1}	1.6	90	18	146.205	[120]	Chlorophyta: Chlorophyceae	Quigg & Beardall 2003 [Sciandra et al. 1997, Fig. 1]	1.2	Chl a/C=4.1% C/N=3.7	22
51. Dunaliella tertiolecta	C		10^{-5} mol O_2 (mol C)$^{-1}$ s^{-1}	1.7	95	18	154.328	[120]	Chlorophyta: Chlorophyceae	Quigg & Beardall 2003 [Sciandra et al. 1997, Fig. 1]	1.4	Chl a/C=3.3% C/N=4.3	27
52. Emiliania huxleyi	C	MIN	μmol O_2 (mg Chl a)$^{-1}$ hr^{-1} at Chl a/Corg = 0.031	14	8	15	16.000	[64]	Haptophyta: Prymnesiophyceae	Nielsen 1997 [Verity et al. 1992]	0.27	Chl a/Corg=3.1% Corg/Ctot=0.62 Corg/N=4.8	2.6
53. Emiliania huxleyi	C		μmol O_2 (mg Chl a)$^{-1}$ hr^{-1} at Chl a/Corg = 0.028	16	8.4	15	16.800	[64]	Haptophyta: Prymnesiophyceae	Nielsen 1997 [Verity et al. 1992]	0.30	Chl a/Corg=2.8% Corg/Ctot=0.62 Corg/N=6.0	3.3
54. Emiliania huxleyi	Chl		mg O_2 (mg Chl)$^{-1}$ hr^{-1}	0.60	10	17.5	16.818	[64]	Haptophyta: Prymnesiophyceae	Flameling & Kromkamp 1998 [Verity et al. 1992]	cells dark-adapted for 15 mins		
55. Emiliania huxleyi	C		μmol O_2 (mg Chl a)$^{-1}$ hr^{-1} at Chl a/Corg = 0.009	65	11	15	22.000	[64]	Haptophyta: Prymnesiophyceae	Nielsen 1997 [Verity et al. 1992]	0.87	Chl a/Corg=0.9% Corg/Ctot=0.62 Corg/N=5.1	3.7
56. Emiliania huxleyi	C		μmol O_2 (mg Chl a)$^{-1}$ hr^{-1} at Chl a/Corg = 0.029	22	12	15	24.000	[64]	Haptophyta: Prymnesiophyceae	Nielsen 1997 [Verity et al. 1992]	0.64	Chl a/Corg=2.9% Corg/Ctot=0.62 Corg/N=5.6	4.4

57. Emiliania huxleyi	C		μmol O_2 (mg Chl a)$^{-1}$ hr^{-1} at Chl a/Corg = 0.024	28	12	15	24.000	[64]	Haptophyta: Prymnesiophyceae	Nielsen 1997 [Verity et al. 1992]	0.68	Chl a/Corg=2.4% Corg/Ctot=0.62 Corg/N=5.7	4.8
58. Emiliania huxleyi	C		μmol O_2 (mg Chl a)$^{-1}$ hr^{-1} at Chl a/Corg = 0.020	32	12	15	24.000	[64]	Haptophyta: Prymnesiophyceae	Nielsen 1997 [Verity et al. 1992]	0.66	Chl a/Corg=2.0% Corg/Ctot=0.62 Corg/N=6.3	5.0
59. Emiliania huxleyi	C		μmol O_2 (mg Chl a)$^{-1}$ hr^{-1} at Chl a/Corg = 0.015	48	14	15	28.000	[64]	Haptophyta: Prymnesiophyceae	Nielsen 1997 [Verity et al. 1992]	0.85	Chl a/Corg=1.5% Corg/Ctot=0.62 Corg/N=4.9	4.4
60. Emiliania huxleyi	C		μmol O_2 (mg Chl a)$^{-1}$ hr^{-1} at Chl a/Corg = 0.019	42	15	15	30.000	[64]	Haptophyta: Prymnesiophyceae	Nielsen 1997 [Verity et al. 1992]	0.80	Chl a/Corg=1.9% Corg/Ctot=0.62 Corg/N=6.8	6.8
61. Emiliania huxleyi	C		μmol O_2 (mg Chl a)$^{-1}$ hr^{-1} at Chl a/Corg = 0.019	43	15	15	30.000	[64]	Haptophyta: Prymnesiophyceae	Nielsen 1997 [Verity et al. 1992]	0.72	Chl a/Corg=1.9% Corg/Ctot=0.62 Corg/N=5.3	5.4
62. Emiliania huxleyi	C		μmol O_2 (mg Chl a)$^{-1}$ hr^{-1} at Chl a/Corg = 0.018	46	16	15	32.000	[64]	Haptophyta: Prymnesiophyceae	Nielsen 1997 [Verity et al. 1992]	0.75	Chl a/Corg=1.8% Corg/Ctot=0.62 Corg/N=6.0	6.2
63. Emiliania huxleyi	C		μmol O_2 (mg Chl a)$^{-1}$ hr^{-1} at Chl a/Corg = 0.022	40	17	15	34.000	[64]	Haptophyta: Prymnesiophyceae	Nielsen 1997 [Verity et al. 1992]	0.73	Chl a/Corg=2.2% Corg/Ctot=0.62 Corg/N=6.3	6.9
64. Emiliania huxleyi	Chl		mg O_2 (mg Chl)$^{-1}$ hr^{-1}	1.75	30	17.5	50.454	[64]	Haptophyta: Prymnesiophyceae	Flameling & Kromkamp 1998 [Verity et al. 1992]	cells dark-adapted for 15 mins		
65. Emiliania huxleyi	Chl		mg O_2 (mg Chl)$^{-1}$ hr^{-1}	1.92	33	17.5	55.499	[64]	Haptophyta: Prymnesiophyceae	Flameling & Kromkamp 1998 [Verity et al. 1992]	cells dark-adapted for 15 mins		
66. Euglena gracilis	W	MIN	ml O_2 (10^8 cells)$^{-1}$ hr^{-1}	12.8	7	20	9.899	10300	Euglenozoa: Euglenophyceae	Vladimirova & Zotin 1983, 1985 (data of Cook 1966)			
67. Euglena gracilis	W		ml O_2 (10^8 cells)$^{-1}$ hr^{-1}	16.0	9	20	12.728	9700	Euglenozoa: Euglenophyceae	Vladimirova & Zotin 1983, 1985 (data of Cook 1966)			
68. Fragilaria crotonensis	W	MIN	mg O_2 (10^9 cells)$^{-1}$ hr^{-1}	1.78	23	16	42.920	300	Bacillariophyta: Fragilariophyceae	Talling 1957			
69. Glenodinium sp.	Chl	MIN	μmol O_2 (mg Chl a)$^{-1}$ hr^{-1}	61.7/1.3	26	24	27.866		Myzozoa: Dinophyceae	Burris 1977	late exp/ early stat		
70. Gonyaulax polyedra	Pr	MIN	μmol O_2 (mg Chl)$^{-1}$ hr^{-1} at Chl a/Pr = 0.0048	64.1	5.7	20	8.061	21000	Myzozoa: Dinophyceae	Sweeney 1986	late log	Pr/cell=7100 pg Chl a/cell=33.9 pg	
71. Gonyaulax tamarensis	C	MIN	10^{-3} μmol O_2 (μg C)$^{-1}$ hr^{-1}	0.64	12.0	15	24.000	15150	Myzozoa: Dinophyceae	Langdon 1987	0.520	C/V=0.277 pg/μm^3 C/N=8.4 C/Chl a=87.0 C/cell=4190 pg	6.7
72. Gonyaulax tamarensis	C		10^{-3} μmol O_2 (μg C)$^{-1}$ hr^{-1}	0.82	15.3	15	30.600	14137	Myzozoa: Dinophyceae	Langdon 1987	0.310	C/V=0.218 pg/μm^3 C/N=7.5 C/Chl a=106.0 C/cell=3078 pg	7.7

73. Gonyaulax tamarensis	C		10^{-3} µmol O_2 (µg C)$^{-1}$ hr^{-1}	1.13	21	15	42.000	13036	Myzozoa: Dinophyceae	Langdon 1987	0.023	C/V=0.195 pg/µm^3 C/N=7.2 C/Chl a=57.0 C/cell=2539 pg	10
74. Gonyaulax tamarensis	C		10^{-3} µmol O_2 (µg C)$^{-1}$ hr^{-1}	1.22	22.8	15	45.600	13306	Myzozoa: Dinophyceae	Langdon 1987	0.098	C/V=0.209 pg/µm^3 C/N=8.2 C/Chl a=90.0 C/cell=2776 pg	12
75. Gonyaulax tamarensis	C		10^{-3} µmol O_2 (µg C)$^{-1}$ hr^{-1}	1.52	28.4	15	56.800	16210	Myzozoa: Dinophyceae	Langdon 1987	0.600	C/V=0.249 pg/µm^3 C/N=9.0 C/Chl a=172.0 C/cell=4035 pg	17
76. Gonyaulax tamarensis	C		10^{-3} µmol O_2 (µg C)$^{-1}$ hr^{-1}	1.58	29.5	15	59.000	10653	Myzozoa: Dinophyceae	Langdon 1987	0.580	C/V=0.184 pg/µm^3 C/N=8.2 C/Chl a=171.0 C/cell=1957 pg	16
77. Gymnodinium nelsoni	W	MIN	ml O_2 (10^8 cells)$^{-1}$ hr^{-1}	28.5	1.1	20	1.556	148000	Myzozoa: Dinophyceae	Vladimirova & Zotin 1983, 1985 (data of Hochachka & Teal 1964)			
78. Isochrysis galbana	C	MIN	g C (g cell C)$^{-1}$ hr^{-1}	0.09	5.8	18	9.422	30	Haptophyta: Prymnesiophyceae	Herzig & Falkowski 1989	growth rate 0.18 day^{-1}	C/cell=18pg N/cell=1pg C/V=0.6 pg/µm^3 Chl a/cell=0.07pg	7.0
79. Isochrysis galbana	C		g C (g cell C)$^{-1}$ hr^{-1}	0.09	5.8	18	9.422	30	Haptophyta: Prymnesiophyceae	Herzig & Falkowski 1989	growth rate 0.25 day^{-1}	C/cell=16pg N/cell=1.2pg C/V=0.54 pg/µm^3 Chl a/cell=0.08pg	5.2
80. Isochrysis galbana	C		g C (g cell C)$^{-1}$ hr^{-1}	0.10	6.5	18	10.559	30	Haptophyta: Prymnesiophyceae	Herzig & Falkowski 1989	growth rate 0.37 day^{-1}	C/cell=15pg N/cell=1.3pg C/V=0.5pg/µm^3 Chl a/cell=0.1pg	5.0
81. Isochrysis galbana	C		g C (g cell C)$^{-1}$ hr^{-1}	0.12	7.8	18	12.671	32	Haptophyta: Prymnesiophyceae	Herzig & Falkowski 1989	growth rate 0.48 day^{-1}	C/cell=15pg N/cell=1.4pg C/V=0.44 pg/µm^3 Chl a/cell=0.11pg	5.6
82. Isochrysis galbana	C		g C (g cell C)$^{-1}$ hr^{-1}	0.12	7.8	18	12.671	33	Haptophyta: Prymnesiophyceae	Herzig & Falkowski 1989	growth rate 0.53 day^{-1}	C/cell=14pg N/cell=1.4pg C/V=0.43 pg/µm^3 Chl a/cell=0.11pg	5.2
83. Isochrysis galbana	C		g C (g cell C)$^{-1}$ hr^{-1}	0.12	7.8	18	12.671	31	Haptophyta: Prymnesiophyceae	Herzig & Falkowski 1989	growth rate 0.59 day^{-1}	C/cell=13pg N/cell=1.4pg C/V=0.42 pg/µm^3 Chl a/cell=0.12pg	4.8
84. Isochrysis galbana	C		g C (g cell C)$^{-1}$ hr^{-1}	0.15	9.7	18	15.758	34	Haptophyta: Prymnesiophyceae	Herzig & Falkowski 1989	growth rate 0.72 day^{-1}	C/cell=13pg N/cell=1.5pg C/V=0.38 pg/µm^3 Chl a/cell=0.13pg	5.6

85.	Isochrysis galbana	C		g C (g cell C)$^{-1}$ hr^{-1}	0.18	11.7	18	19.007	34	Haptophyta: Prymnesiophyceae	Herzig & Falkowski 1989	growth rate 0.87 day^{-1}	C/cell=11pg N/cell=1.5pg C/V=0.32 pg/μm^3 Chl a/cell=0.13	5.7
86.	Isochrysis galbana	C		μmol O_2 cell^{-1} min^{-1} $\times$ 10^{10} at 10.3 pg C per cell	1.1	12	18	19.494	37	Haptophyta: Prymnesiophyceae	Falkowski et al. 1985	0.30 (30 μmol m^{-2} s^{-1}); steady growth	C/cell=10.3 pg C/V=0.278 pg/μm^3 C/N=6.3 Chl/C=2.38%	5.0
87.	Isochrysis galbana	C		μmol O_2 cell^{-1} min^{-1} $\times$ 10^{10} at 12.4 pg C per cell	1.3	12	18	19.494	50	Haptophyta: Prymnesiophyceae	Falkowski et al. 1985	0.70 (70 μmol m^{-2} s^{-1}) ; steady growth	C/cell=12.4 pg C/V=0.248 pg/μm^3 C/N=5.5 Chl/C=1.72%	4.3
88.	Isochrysis galbana	C		μmol O_2 cell^{-1} min^{-1} $\times$ 10^{10} at 20.0 pg C per cell	2.3	13	18	21.119	57	Haptophyta: Prymnesiophyceae	Falkowski et al. 1985	1.2 (600 μmol m^{-2} s^{-1}) ; steady growth	C/cell=20.0 pg C/V=0.351 pg/μm^3 C/N=7.5 Chl/C=0.58%	6.4
89.	Isochrysis galbana	C		g C (g cell C)$^{-1}$ hr^{-1} at 10 pg C per cell	0.20	13	18	21.119	33	Haptophyta: Prymnesiophyceae	Herzig & Falkowski 1989	growth rate 0.96 day^{-1}	C/cell=10pg N/cell=1.5pg C/V=0.3pg/μm^3 Chl a/cell=0.13pg	5.8
90.	Isochrysis galbana	C		μmol O_2 cell^{-1} min^{-1} $\times$ 10^{10} at 15 pg C per cell	2.0	15	18	24.368	55	Haptophyta: Prymnesiophyceae	Falkowski et al. 1985	1.10 (150 μmol m^{-2} s^{-1}) ; steady growth	C/cell=15.0 pg C/V=0.273 pg/μm^3 C/N=5.7 Chl/C=1.37%	5.7
91.	Isochrysis galbana	C		μmol O_2 cell^{-1} min^{-1} $\times$ 10^{10} at 16.5 pg C per cell	2.2	20	18	32.490	52	Haptophyta: Prymnesiophyceae	Falkowski et al. 1985	1.2 (320 μmol m^{-2} s^{-1}) ; steady growth	C/cell=16.5 pg C/V=0.317 pg/μm^3 C/N=3.7 Chl/C=0.88%	4.9
92.	Leptocylindrus danicus	C	MIN	pg C (pg cell C)$^{-1}$ hr^{-1}	0.0025	4	15	8.000	1158	Bacillariophyta: Coscinodiscophyceae	Verity 1981, 1982a,b	mean minimum value among 49 combinations of temperature, daylenght and irradiance, growth rates from 0.1 to 3.0 day^{-1}	log C(pg)=0.707 log V(μm^3) −0.225 log N(pg)=0.718 log V(μm^3) −1.024 C/Chl a=20-100 depending on temperature and day length C/N=5.8	1.5

93. Monochrysis lutheri	C	MIN	g C (g cell C)$^{-1}$ hr^{-1}	0.0052	8	20	11.314	[40]	Haptophyta: Prymnesiophyceae?	Laws & Caperon 1976 [estimated from C content using the formula of Verity et al. 1992 for non-diatomous algae]	0.19	C/cell=11.3 pg N/cell=0.885 pg [Verity et al. 1992: C/V (pg//μm^3)= =0.545×V$^{-0.181}$]	6.9
94. Monochrysis lutheri	C		g C (g cell C)$^{-1}$ hr^{-1}	0.0054	8.4	20	11.879	[25]	Haptophyta: Prymnesiophyceae?	Laws & Caperon 1976 [estimated from C content using the formula of Verity et al. 1992 for non-diatomous algae]	0.38	C/cell=7.58 pg N/cell=0.854 pg [Verity et al. 1992: C/V (pg//μm^3)= =0.545×V$^{-0.181}$]	5.0
95. Monochrysis lutheri	C		g C (g cell C)$^{-1}$ hr^{-1}	0.0082	13	20	18.385	[26]	Haptophyta: Prymnesiophyceae?	Laws & Caperon 1976 [estimated from C content using the formula of Verity et al. 1992 for non-diatomous algae]	0.60	C/cell=7.87 pg N/cell=1.058 pg [Verity et al. 1992: C/V (pg//μm^3)= =0.545×V$^{-0.181}$]	6.4
96. Monochrysis lutheri	C		g C (g cell C)$^{-1}$ hr^{-1}	0.0091	14	20	19.799	[29]	Haptophyta: Prymnesiophyceae?	Laws & Caperon 1976 [estimated from C content using the formula of Verity et al. 1992 for non-diatomous algae]	0.77	C/cell=8.62 pg N/cell=1.289 pg [Verity et al. 1992: C/V (pg//μm^3)= =0.545×V$^{-0.181}$]	6.2
97. Nannochloris atomus	C	MIN	pg C (pg cell C)$^{-1}$ day^{-1}	0.14	9	23	10.338	[6]	Chlorophyta: Chlorophyceae	Geider & Osborne 1989 [Sobrino et al. 2005, diam 2 μm, 0.025 pg Chl a/cell]			
98. Navicula pelliculosa	D	MIN	μmol O_2 (10^8 cells)$^{-1}$ hr^{-1} at 28.6 pg DM (cell)$^{-1}$	2	13	20	18.385	[95]	Bacillariophyta: Bacillariophyceae	Coombs et al. 1967a,b [calculated from dry mass]		Pr/DM=0.393 C/DM=0.412 Carbohydr./DM=0.154 Lipids/DM=0.338	
99. Ochromonas malhamensis	D	MIN	μl O_2 (mg DM)$^{-1}$ hr^{-1}	15	25	28	20.306		Ochrophyta: Chrysophyceae	Weiss & Brown 1959	starved 24 hr in the dark		
100. Ochromonas sp.	W	MIN	nl O_2 (cell)$^{-1}$ hr^{-1}	7.0×10^{-5}	5.6	20	7.920	70	Ochrophyta: Chrysophyceae	Fenchel & Finlay 1983	starved		
101. Olisthodiscus luteus	C		10^{-3} μmol O_2 (μg C)$^{-1}$ hr^{-1}	0.26	4.9	15	9.800	1023	Ochrophyta: Raphidophyceae	Langdon 1987	0.340	C/V=0.199 pg/μm^3 C/N=7.9 C/Chl a=46.0 C/cell=204 pg	2.6
102. Olisthodiscus luteus	C		10^{-3} μmol O_2 (μg C)$^{-1}$ hr^{-1}	0.34	6.4	15	12.800	905	Ochrophyta: Raphidophyceae	Langdon 1987	0.610	C/V=0.229 pg/μm^3 C/N=8.3 C/Chl a=46.0 C/cell=207 pg	3.5
103. Olisthodiscus luteus	C		10^{-3} μmol O_2 (μg C)$^{-1}$ hr^{-1}	0.38	7.1	15	14.200	945	Ochrophyta: Raphidophyceae	Langdon 1987	0.174	C/V=0.194 pg/μm^3 C/N=7.5 C/Chl a=33.0 C/cell=183 pg	3.6

104. Olisthodiscus luteus	C		10^{-3} µmol O_2 (µg C)$^{-1}$ hr^{-1}	0.47	8.8	15	17.600	833	Ochrophyta: Raphidophyceae	Langdon 1987	0.056	C/V=0.202 pg/µm^3 C/N=7.5 C/Chl a=38.0 C/cell=168 pg	4.4
105. Olisthodiscus luteus	C		10^{-3} µmol O_2 (µg C)$^{-1}$ hr^{-1}	0.56	10.5	15	21.000	1124	Ochrophyta: Raphidophyceae	Langdon 1987	0.880	C/V=0.266 pg/µm^3 C/N=9.5 C/Chl a=73.5 C/cell=299 pg	6.7
106. Olisthodiscus luteus	C		10^{-3} µmol O_2 (µg C)$^{-1}$ hr^{-1}	0.70	13.1	15	26.200	1150	Ochrophyta: Raphidophyceae	Langdon 1987	0.810	C/V=0.273 pg/µm^3 C/N=9.7 C/Chl a=62.0 C/cell=314 pg	8.5
107. Peridinium gatunense	Chl	MIN	µmol O_2 (5 mg Chl)$^{-1}$ min^{-1}	5	33	22	40.628	[10000]	Myzozoa: Dinophyceae	Sukenik et al. 2002, Fig. 5 [Berman-Frank & Erez 1996]			
108. Phaeocystis globosa	Chl	MIN	mg O_2 (mg Chl)$^{-1}$ hr^{-1}	1.49	26	17.5	43.727	[106]	Haptophyta: Prymnesiophyceae	Flameling & Kromkamp 1998 [Olenina et al. 2006]	cells dark-adapted for 15 mins		
109. Phaeocystis globosa	Chl		mg O_2 (mg Chl)$^{-1}$ hr^{-1}	1.83	32	17.5	53.817	[106]	Haptophyta: Prymnesiophyceae	Flameling & Kromkamp 1998 [Olenina et al. 2006]	cells dark-adapted for 15 mins		
110. Phaeocystis globosa	Chl		mg O_2 (mg Chl)$^{-1}$ hr^{-1}	2.63	46	17.5	77.362	[106]	Haptophyta: Prymnesiophyceae	Flameling & Kromkamp 1998 [Olenina et al. 2006]	cells dark-adapted for 15 mins		
111. Phaeodactylum tricornutum	C	MIN	10^{-5} mol O_2 (mol C)$^{-1}$ s^{-1}	0.38	21	18	34.115	[120]	Bacillariophyta: Bacillariophyceae	Quigg & Beardall 2003 [Glover et al. 1987]	1.2		
112. Phaeodactylum tricornutum	Chl		mg O_2 (mg Chl)$^{-1}$ hr^{-1}	1.23	21	15	42.000	[120]	Bacillariophyta: Bacillariophyceae	Flameling & Kromkamp 1998 [Glover et al. 1987]	cells dark-adapted for 15 mins		
113. Phaeodactylum tricornutum	Chl		mg O_2 (mg Chl)$^{-1}$ hr^{-1}	1.33	23	15	46.000	[120]	Bacillariophyta: Bacillariophyceae	Flameling & Kromkamp 1998 [Glover et al. 1987]	cells dark-adapted for 15 mins		
114. Phaeodactylum tricornutum	C		10^{-5} mol O_2 (mol C)$^{-1}$ s^{-1}	0.51	29	18	47.111	[120]	Bacillariophyta: Bacillariophyceae	Quigg & Beardall 2003 [Glover et al. 1987]	0.55	Chl a/C=4.5% Pr/cell=3.49 pg C/N=4.9	9.3
115. Phaeodactylum tricornutum	Chl		mg O_2 (mg Chl)$^{-1}$ hr^{-1}	1.49	26	15	52.000	[120]	Bacillariophyta: Bacillariophyceae	Flameling & Kromkamp 1998 [Glover et al. 1987]	cells dark-adapted for 15 mins		
116. Phaeodactylum tricornutum	C		10^{-5} mol O_2 (mol C)$^{-1}$ s^{-1}	0.63	35	18	56.858	[120]	Bacillariophyta: Bacillariophyceae	Quigg & Beardall 2003 [Glover et al. 1987]	0.2	Chl a/C=4.6% Pr/cell=2.73 pg C/N=4.4	10
117. Phaeodactylum tricornutum	C		µmol O_2 cell^{-1} min^{-1} × 10^{10} at 13 pg C per cell	4.21	36	18	58.482	[60]	Bacillariophyta: Bacillariophyceae	Greene et al. 1991 [calculated from Chl a content]		Chl a/cell=0.250 pg Chl a/C=1.94% C/N=5.3	13

118. Phaeodactylum tricornutum	C		10^{-5} mol O_2 (mol C)$^{-1}$ s^{-1}	0.67	38	18	61.731	[120]	Bacillariophyta: Bacillariophyceae	Quigg & Beardall 2003 [Glover et al. 1987]	0.95	Chl a/C=3.4% C/N=4.4	11
119. Phaeodactylum tricornutum	C		10^{-5} mol O_2 (mol C)$^{-1}$ s^{-1}	0.76	43	18	69.854	[120]	Bacillariophyta: Bacillariophyceae	Quigg & Beardall 2003 [Glover et al. 1987]	1.15	Chl a/C=2.1% Pr/cell=2.34 pg C/N=5.3	15
120. Phaeodactylum tricornutum	C		10^{-5} mol O_2 (mol C)$^{-1}$ s^{-1}	0.80	45	18	73.103	[120]	Bacillariophyta: Bacillariophyceae	Quigg & Beardall 2003 [Glover et al. 1987]	1	Chl a/C=5.6% C/N=4.6	14
121. Phaeodactylum tricornutum	C		10^{-5} mol O_2 (mol C)$^{-1}$ s^{-1}	0.93	52	18	84.474	[120]	Bacillariophyta: Bacillariophyceae	Quigg & Beardall 2003 [Glover et al. 1987]	0.4	Chl a/C=7.5% Pr/cell=3.85 pg	
122. Prorocentrum micans	C	MIN	μmol O_2 cell^{-1} min^{-1} × 10^{10} at 1068 pg C per cell	70	7.3	18	11.859	4340	Myzozoa: Dinophyceae	Falkowski et al. 1985	0.075 (70 μmol m^{-2} s^{-1}) ; steady growth	C/cell=1068 pg C/V=0.246 pg/μm^3 C/N=3.7 Chl/C=0.62%	0.5
123. Prorocentrum micans	C		μmol O_2 cell^{-1} min^{-1} × 10^{10} at 1096 pg C per cell	85	8.7	18	14.133	5096	Myzozoa: Dinophyceae	Falkowski et al. 1985	0.108 (150 μmol m^{-2} s^{-1}) ; steady growth	C/cell=1096 pg C/V=0.215 pg/μm^3 C/N=4.1 Chl/C=0.47%	2.0
124. Prorocentrum micans	C		μmol O_2 cell^{-1} min^{-1} × 10^{10} at 1117 pg C per cell	125	13	18	21.119	5122	Myzozoa: Dinophyceae	Falkowski et al. 1985	0.164 (320 μmol m^{-2} s^{-1}) ; steady growth	C/cell=1117 pg C/V=0.218 pg/μm^3 C/N=4.1 Chl/C=0.29%	3.4
125. Prorocentrum micans	C		μmol O_2 cell^{-1} min^{-1} × 10^{10} at 1178 pg C per cell	150	14	18	22.743	5350	Myzozoa: Dinophyceae	Falkowski et al. 1985	0.178 (600 μmol m^{-2} s^{-1}) ; steady growth	C/cell=1178 pg C/V=0.220 pg/μm^3 C/N=3.9 Chl/C=0.24%	3.7
126. Scenedesmus obliquus	W	MIN	ml O_2 (10^8 cells)$^{-1}$ hr^{-1}	0.04	1	20	1.414	220	Chlorophyta: Chlorophyceae	Vladimirova & Zotin 1983, 1985 (data of Margalef 1954)			
127. Scenedesmus protuberans	Chl	MIN	mg O_2 (mg Chl)$^{-1}$ hr^{-1}	0.36	6.3	20	8.910		Chlorophyta: Chlorophyceae	Flameling & Kromkamp 1998	cells dark-adapted for 15 mins		
128. Scenedesmus protuberans	Chl		mg O_2 (mg Chl)$^{-1}$ hr^{-1}	0.50	8.7	20	12.304		Chlorophyta: Chlorophyceae	Flameling & Kromkamp 1998	cells dark-adapted for 15 mins		
129. Scenedesmus protuberans	Chl		mg O_2 (mg Chl)$^{-1}$ hr^{-1}	0.67	12	20	16.971		Chlorophyta: Chlorophyceae	Flameling & Kromkamp 1998	cells dark-adapted for 15 mins		

130. Scenedesmus quadricauda	C	MIN	μmol O_2 (mg C)$^{-1}$ (6 hr)$^{-1}$	1.3	4	20	5.657	[80]	Chlorophyta: Chlorophyceae	Healey 1979 [calculated from C content]	3 days of nitrate deprivation	C/cell=8 pg C/N=15 C/P=33 Chl a/C=0.8% Pr/C=0.45 Carbohydr/C=0.81	4.0
131. Scenedesmus quadricauda	C		μmol O_2 (mg C)$^{-1}$ (6 hr)$^{-1}$	1.4	4.4	20	6.223	[70]	Chlorophyta: Chlorophyceae	Healey 1979 [calculated from C content]	7 days of P deprivation	C/cell=10 pg C/N=6.2 C/P=204 Chl a/C=1.5% Pr/C=0.72 Carbohydr/C=0.82	1.8
132. Scenedesmus quadricauda	C		μmol O_2 (mg C)$^{-1}$ (6 hr)$^{-1}$	2.0	6.2	20	8.768		Chlorophyta: Chlorophyceae	Healey 1979	addition of N after 3 days of nitrate deprivation	24 hr after addition of N to 2 days' N-starved cells: C/cell=9pg C/N=5.1 C/P=19 Chl a/C=1.3% Pr/C=0.72 Carbohydr/C=0.72	
133. Scenedesmus quadricauda	C		μmol O_2 (mg C)$^{-1}$ (6 hr)$^{-1}$	2.2	6.8	20	9.617		Chlorophyta: Chlorophyceae	Healey 1979	addition of P after 7 days of P deprivation	36 hr after addition of P to 3 days' P-starved cells: C/cell=12pg C/N=4.7 C/P=26 Chl a/C=3.4% Pr/C=0.98 Carbohydr/C=0.54	
134. Selenastrum capricornutum	Chl	MIN	nmol O_2 (10^6 cells)$^{-1}$ min^{-1} at 0.31 pg Chl a per cell	0.12	13	21	17.154	[50]	Chlorophyta: Chlorophyceae	Beardall et al. 1997 [Hall & Golding 1998]	(550 μmol m^{-2} s^{-1}; 22 hr in darkness)		
135. Selenastrum capricornutum	Chl		nmol O_2 (10^6 cells)$^{-1}$ min^{-1} at 0.35 pg Chl a per cell	0.15	14	21	18.473	[50]	Chlorophyta: Chlorophyceae	Beardall et al. 1997 [Hall & Golding 1998]	(100 μmol m^{-2} s^{-1}; 0 hr in darkness)		
136. Selenastrum capricornutum	Chl		nmol O_2 (10^6 cells)$^{-1}$ min^{-1} at 0.29 pg Chl a per cell	0.12	14	21	18.473	[50]	Chlorophyta: Chlorophyceae	Beardall et al. 1997 [Hall & Golding 1998]	(100 μmol m^{-2} s^{-1}; 3.8 hr in darkness)		
137. Selenastrum capricornutum	Chl		nmol O_2 (10^6 cells)$^{-1}$ min^{-1} at 0.38 pg Chl a per cell	0.16	14	21	18.473	[50]	Chlorophyta: Chlorophyceae	Beardall et al. 1997 [Hall & Golding 1998]	(100 μmol m^{-2} s^{-1}; 22 hr in darkness)		
138. Selenastrum capricornutum	Chl		nmol O_2 (10^6 cells)$^{-1}$ min^{-1} at 0.28 pg Chl a per cell	0.14	17	21	22.432	[50]	Chlorophyta: Chlorophyceae	Beardall et al. 1997 [Hall & Golding 1998]	(300 μmol m^{-2} s^{-1}; 22 hr in darkness)		

139. Selenastrum capricornutum	Chl		nmol O_2 (10^6 cells)$^{-1}$ min^{-1} at 0.22 pg Chl a per cell	0.14	21	21	27.710	[50]	Chlorophyta: Chlorophyceae	Beardall et al. 1997 [Hall & Golding 1998]	(300 μmol m^{-2} s^{-1}; 3.8 hr in darkness)		
140. Selenastrum capricornutum	Chl		nmol O_2 (10^6 cells)$^{-1}$ min^{-1} at 0.32 pg Chl a per cell	0.20	21	21	27.710	[50]	Chlorophyta: Chlorophyceae	Beardall et al. 1997 [Hall & Golding 1998]	(550 μmol m^{-2} s^{-1}; 3.8 hr in darkness)		
141. Selenastrum capricornutum	Chl		nmol O_2 (10^6 cells)$^{-1}$ min^{-1} at 0.30 pg Chl a per cell	0.23	26	21	34.307	[50]	Chlorophyta: Chlorophyceae	Beardall et al. 1997 [Hall & Golding 1998]	(300 μmol m^{-2} s^{-1}; 0 hr in darkness)		
142. Selenastrum capricornutum	Chl		nmol O_2 (10^6 cells)$^{-1}$ min^{-1} at 0.28 pg Chl a per cell	0.48	57	21	75.212	[50]	Chlorophyta: Chlorophyceae	Beardall et al. 1997 [Hall & Golding 1998]	(550 μmol m^{-2} s^{-1}; 0 hr in darkness)		
143. Selenastrum minutum	Chl	MIN	fmol O_2 cell^{-1} hr^{-1}	4	6.4	20	9.051	77	Chlorophyta: Chlorophyceae	Theodorou et al. 1991	0.6	Chl/cell=0.235 pg	
144. Selenastrum minutum	Chl		fmol O_2 cell^{-1} hr^{-1}	24	43	20	60.811	69	Chlorophyta: Chlorophyceae	Theodorou et al. 1991	1.68	Chl/cell=0.717 pg	
145. Skeletonema costatum	C	MIN	10^{-3} μmol O_2 (μg C)$^{-1}$ hr^{-1}	0.11	2.1	15	4.200	65	Bacillariophyta: Coscinodiscophyceae	Langdon 1987	0.056	C/cell=16 pg C/V=0.246 pg/μm^3 C/N=6.8 C/Chl a=22.9	0.9
146. Skeletonema costatum	C		μmol O_2 cell^{-1} min^{-1} × 10^{10} at 14.6 pg C per cell	0.47	2.6	15	5.200	77	Bacillariophyta: Coscinodiscophyceae	Falkowski & Owens 1980	0.19; Log	C/V=0.260 pg/μm^3 C/N=4.5	0.7
147. Skeletonema costatum	C		μmol O_2 cell^{-1} min^{-1} × 10^{10} at 20 pg C per cell	0.59	3.3	15	6.600	79	Bacillariophyta: Coscinodiscophyceae	Falkowski & Owens 1980	0.28; Log	C/V=0.253 pg/μm^3 C/N=3.8	0.8
148. Skeletonema costatum	C		μmol O_2 cell^{-1} min^{-1} × 10^{10} at 19 pg C per cell	1.0	5.9	15	11.800	82	Bacillariophyta: Coscinodiscophyceae	Falkowski & Owens 1980	0.45; Log	C/V=0.232 pg/μm^3 C/N=4.3	1.7
149. Skeletonema costatum	C		g C (g cell C)$^{-1}$ hr^{-1}	0.0055	8.6	18	13.971	127	Bacillariophyta: Coscinodiscophyceae	Blasco et al. 1982	1.87; one division away from stationary phase	C/V=0.094 pg/μm^3 C/N=6.5 Chl a/C=1.56%	3.7
150. Skeletonema costatum	C		μmol O_2 cell^{-1} min^{-1} × 10^{10} at 17.5 pg C per cell	1.5	9.3	15	18.600	84	Bacillariophyta: Coscinodiscophyceae	Falkowski & Owens 1980	0.62; Log	C/V=0.214 pg/μm^3 C/N=3.4	2.1
151. Skeletonema costatum	C		10^{-3} μmol O_2 (μg C)$^{-1}$ hr^{-1}	0.60	11.2	15	22.400		Bacillariophyta: Coscinodiscophyceae	Langdon 1987	0.330	C/cell=15 pg C/N=8.2 C/Chl a=18.0	6.1
152. Skeletonema costatum	Chl		μmol O_2 (mg Chl)$^{-1}$ hr^{-1}	20	11.2	15	22.400		Bacillariophyta: Coscinodiscophyceae	Smith et al. 1992			
153. Skeletonema costatum	Chl		μmol O_2 (mg Chl)$^{-1}$ hr^{-1}	23	13	15	26.000		Bacillariophyta: Coscinodiscophyceae	Smith et al. 1992			
154. Skeletonema costatum	C		10^{-3} μmol O_2 (μg C)$^{-1}$ hr^{-1}	0.80	14.9	15	29.800		Bacillariophyta: Coscinodiscophyceae	Langdon 1987	1.410	C/cell=14 pg C/N=7.5 C/Chl a=18.9	7..5

155. Skeletonema costatum	Chl		μmol O_2 (mg Chl)$^{-1}$ hr^{-1}	27.5	15.4	15	30.800		Bacillariophyta: Coscinodiscophyceae	Smith et al. 1992			
156. Skeletonema costatum	C		10^{-3} μmol O_2 (μg C)$^{-1}$ hr^{-1}	0.83	15.5	15	31.000		Bacillariophyta: Coscinodiscophyceae	Langdon 1987	2.410	C/cell=31 pg C/N=8.1 C/Chl a=82.4	8.4
157. Skeletonema costatum	C		10^{-3} μmol O_2 (μg C)$^{-1}$ hr^{-1}	0.84	15.7	15	31.400		Bacillariophyta: Coscinodiscophyceae	Langdon 1987	1.240	C/cell=16 pg C/N=6.4 C/Chl a=29.4	6.7
158. Skeletonema costatum	C		μmol O_2 cell^{-1} min^{-1} $\times 10^{10}$ at 14 pg C per cell	2.3	16	15	32.000	91	Bacillariophyta: Coscinodiscophyceae	Falkowski & Owens 1980	0.95; Log	C/V=0.154 pg/μm^3 C/N=5.6	6.9
159. Skeletonema costatum	C		μmol O_2 cell^{-1} min^{-1} $\times 10^{10}$ at 16 pg C per cell	2.3	16	15	32.000	88	Bacillariophyta: Coscinodiscophyceae	Falkowski & Owens 1980	0.77; Log	C/V=0.182 pg/μm^3 C/N=3.7	4.0
160. Skeletonema costatum	Chl		μmol O_2 (mg Chl)$^{-1}$ hr^{-1}	28	16	15	32.000		Bacillariophyta: Coscinodiscophyceae	Smith et al. 1992			
161. Skeletonema costatum	C		10^{-3} μmol O_2 (μg C)$^{-1}$ hr^{-1}	0.90	16.8	15	33.600	124	Bacillariophyta: Coscinodiscophyceae	Langdon 1987	1.880	C/cell=16 pg C/V=0.129 pg/μm^3 C/N=6.4 C/Chl a=51.3	7.2
162. Skeletonema costatum	C		μmol O_2 cell^{-1} min^{-1} $\times 10^{10}$ at 15 pg C per cell	2.2	18	15	36.000	92	Bacillariophyta: Coscinodiscophyceae	Falkowski & Owens 1980	0.88; Log	C/V=0.163 pg/μm^3 C/N=5.0	6.1
163. Skeletonema costatum	C		10^{-3} μmol O_2 (μg C)$^{-1}$ hr^{-1}	1.05	19.6	15	39.200		Bacillariophyta: Coscinodiscophyceae	Langdon 1987	2.340	C/cell=18 pg C/Chl a=54.4	
164. Skeletonema costatum	C		10^{-3} μmol O_2 (μg C)$^{-1}$ hr^{-1}	1.20	22.4	15	44.800	124	Bacillariophyta: Coscinodiscophyceae	Langdon 1987	1.930	C/cell=22 pg C/V=0.177 pg/μm^3 C/N=8.2 C/Chl a=29.0	12
165. Skeletonema costatum	C		10^{-3} μmol O_2 (μg C)$^{-1}$ hr^{-1}	1.20	22.4	15	44.800		Bacillariophyta: Coscinodiscophyceae	Langdon 1987	2.370	C/cell=29 pg C/N=9.0 C/Chl a=38.7	13
166. Skeletonema costatum	Chl		μmol O_2 (mg Chl)$^{-1}$ hr^{-1}	62.6	35	15	70.000		Bacillariophyta: Coscinodiscophyceae	Smith et al. 1992			
167. Skeletonema costatum	Chl		μmol O_2 (mg Chl)$^{-1}$ hr^{-1}	96	54	15	108.000		Bacillariophyta: Coscinodiscophyceae	Smith et al. 1992			
168. Stephanodiscus neoastraea	C	MIN	mg O_2 (mg Chl a)$^{-1}$ hr^{-1} at Chl a/C = 0.052	0.3	8.4	20	11.879	[14000]	Bacillariophyta: Coscinodiscophyceae	Fietz & Nicklisch 2002 [Olenina et al. 2006]		Silicates/DM=38% ODM/V=0.27 C/N=4.6 C/ODM=0.46 Chl a/ODM=0.024	2.8
169. Strombidium capitatum	C	MIN	nl O_2 cell^{-1} hr^{-1} at 2.8×10^3 pg C per cell	0.67	19	15	38.000	200000	Ologotrichia (ciliate)	Crawford & Stoecker 1996, Fig. 3	largest cells, little mortality during 24 hr starvation, active swimmer	The C/V ratio applied by the authors was 0.14 pg/μm^3 based on the data of Putt & Stoecker 1989 for ciliates	

170. Symbiodinium sp. (zooxanthellae from Aiptasia pallida)	Chl	MIN	μg O_2 (μg Chl)$^{-1}$ hr^{-1}	0.86	15	25	15.000	[500]	Myzozoa: Dinophyceae	Goulet et al. 2005 [calculated from mean Chl a content]		Chl a/cell=1.9 pg	
171. Symbiodinium sp. (zooxanthellae from Aiptasia pallida)	Chl		μg O_2 (μg Chl)$^{-1}$ hr^{-1}	1.24	22	25	22.000	[500]	Myzozoa: Dinophyceae	Goulet et al. 2005 [calculated from mean Chl a content]		Chl a/cell=2.8 pg	
172. Symbiodinium sp. (zooxanthellae from Aiptasia pallida)	Chl		μg O_2 (μg Chl)$^{-1}$ hr^{-1}	2.33	41	32	25.238	[500]	Myzozoa: Dinophyceae	Goulet et al. 2005 [calculated from mean Chl a content]		Chl a/cell=2.8 pg	
173. Symbiodinium sp. (zooxanthellae from Aiptasia pallida)	Chl		μg O_2 (μg Chl)$^{-1}$ hr^{-1}	4.26	77	32	47.399	[500]	Myzozoa: Dinophyceae	Goulet et al. 2005 [calculated from mean Chl a content]		Chl a/cell=1.9 pg	
174. Symbiodinium sp. (zooxanthellae from Aiptasia pallida)	Chl		μg O_2 (μg Chl)$^{-1}$ hr^{-1}	6.26	109	34	58.412	[500]	Myzozoa: Dinophyceae	Goulet et al. 2005 [calculated from mean Chl a content]		Chl a/cell=2.8 pg	
175. Symbiodinium sp. (zooxanthellae from Aiptasia pallida)	Chl		μg O_2 (μg Chl)$^{-1}$ hr^{-1}	6.26	109	34	58.412	[500]	Myzozoa: Dinophyceae	Goulet et al. 2005 [calculated from mean Chl a content]		Chl a/cell=1.9 pg	
176. Symbiodinium sp. (zooxanthellae from Pocillopora capitata)	Chl	MIN	μmol O_2 (mg Chl a)$^{-1}$ hr^{-1}	16.5/2.4	4	24	4.287		Myzozoa: Dinophyceae	Burris 1977			
177. Terpsinoe musica	D	MIN	mg O_2 (g DM)$^{-1}$ hr^{-1}	2.5	2.9	25	2.900		Bacillariophyta: Coscinodiscophyceae	Necchi 2004			
178. Thalassiosira allenii	C	MIN	g C (g cell C)$^{-1}$ day^{-1}	0.04	2.6	20	3.677	[300]	Bacillariophyta: Coscinodiscophyceae	Geider & Osborne 1989 (data of Laws & Wong 1978) [Cózar & Echevarría 2005, Table 1]			
179. Thalassiosira nordenskioeldii	C	MIN	g C (g cell C)$^{-1}$ hr^{-1}	0.0013	2	0.5	10.928	[500]	Bacillariophyta: Coscinodiscophyceae	Sakshaug et al. 1991 [calculated from C content using the formula of Verity 1981 for the similar-sized diatom Leptocylindrus danicus]	0.12	N/cell=9.0 pg C/cell=48 pg Chl a/cell=3.1 pg	0.7
180. Thalassiosira nordenskioeldii	C		g C (g cell C)$^{-1}$ hr^{-1}	0.0015	2.3	0.5	12.568	[470]	Bacillariophyta: Coscinodiscophyceae	Sakshaug et al. 1991 [calculated from C content using the formula of Verity 1981 for the similar-sized diatom Leptocylindrus danicus]	0.33	N/cell=9.1 pg C/cell=46 pg Chl a/cell=1.9 pg	0.7
181. Thalassiosira nordenskioeldii	C		g C (g cell C)$^{-1}$ hr^{-1}	0.0024	3.7	0.5	20.217	[430]	Bacillariophyta: Coscinodiscophyceae	Sakshaug et al. 1991 [calculated from C content using the formula of Verity 1981 for the similar-sized diatom Leptocylindrus danicus]	0.10	N/cell=7.8 pg C/cell=43 pg Chl a/cell=2.7 pg	1.4

182. Thalassiosira nordenskioeldii	C		g C (g cell C)$^{-1}$ hr^{-1}	0.0029	4.5	0.5	24.589	[830]	Bacillariophyta: Coscinodiscophyceae	Sakshaug et al. 1991 [calculated from C content using the formula of Verity 1981 for the similar-sized diatom Leptocylindrus danicus]	0.33	N/cell=13 pg C/cell=69 pg Chl a/cell=1.2 pg	1.6
183. Thalassiosira pseudonana	Chl	MIN	μmol O_2 (mg Chl a)$^{-1}$ hr^{-1}	74.6/8.3	5	24	5.359		Bacillariophyta: Coscinodiscophyceae	Burris 1977	late exp/ early stat		
184. Thalassiosira pseudonana	C		g C (g cell C)$^{-1}$ hr^{-1}	0.0080	12.4	18	20.144	77	Bacillariophyta: Coscinodiscophyceae	Blasco et al. 1982	1.92; Log	C/V=0.142 pg/μm^3 C/N=7.9 Chl a/C=1.33%	6.5
185. Thalassiosira weissflogii	C	MIN	μmol O_2 cell^{-1} min^{-1} × 10^{10} at 275 pg C per cell	20	8.1	18	13.158	1172	Bacillariophyta: Coscinodiscophyceae	Falkowski et al. 1985	0.25 (30 μmol m^{-2} s^{-1}); steady growth	C/cell=275 pg C/V=0.235 pg/μm^3 C/N=6.3 Chl/C=5.00%	3.4
186. Thalassiosira weissflogii	C		g C (g cell C)$^{-1}$ hr^{-1}	0.0097	15.1	18	24.530	529	Bacillariophyta: Coscinodiscophyceae	Blasco et al. 1982	1.25; Log	C/V=0.331 pg/μm^3 C/N=8.3 Chl a/C=1.43%	8.4
187. Thalassiosira weissflogii	C		μmol O_2 cell^{-1} min^{-1} × 10^{10} at 277 pg C per cell	47	19	18	30.866	1460	Bacillariophyta: Coscinodiscophyceae	Falkowski et al. 1985	0.62 (70 μmol m^{-2} s^{-1}) ; steady growth	C/cell=277 pg C/V=0.190 pg/μm^3 C/N=6.6 Chl/C=4.27%	8.4
188. Thalassiosira weissflogii	C		μmol O_2 cell^{-1} min^{-1} × 10^{10} at 328 pg C per cell	75	26	18	42.237	1364	Bacillariophyta: Coscinodiscophyceae	Falkowski et al. 1985	1.73 (320 μmol m^{-2} s^{-1}) ; steady growth	C/cell=328 pg C/V=0.240 pg/μm^3 C/N=8.3 Chl/C=2.11%	14
189. Thalassiosira weissflogii	C		μmol O_2 cell^{-1} min^{-1} × 10^{10} at 291 pg C per cell	72	28	18	45.486	1675	Bacillariophyta: Coscinodiscophyceae	Falkowski et al. 1985	1.15 (150 μmol m^{-2} s^{-1}) ; steady growth	C/cell=291 pg C/V=0.174 pg/μm^3 C/N=6.5 Chl/C=3.46%	12
190. Thalassiosira weissflogii	C		μmol O_2 cell^{-1} min^{-1} × 10^{10} at 326 pg C per cell	82	28	18	45.486	1480	Bacillariophyta: Coscinodiscophyceae	Falkowski et al. 1985	1.80 (600 μmol m^{-2} s^{-1}) ; steady growth	C/cell=326 pg C/V=0.220 pg/μm^3 C/N=8.1 Chl/C=1.55%	15
191. Trebouxia sp. (phycobiont of Caloplaca holocarpa)	D	MIN	μl O_2 (mg DM)$^{-1}$ hr^{-1}	0.77	1.4	20	1.980	[1000]	Chlorophyta: Trebouxiophyceae	Showman 1972 [Hirose & Yamagishi 1977, genus, diam 10-15 μm]	overnight incubation in darkness	Chl a/WM=0.000625	
192. Trebouxia sp. (phycobiont of Cladonia cristatella)	D	MIN	μl O_2 (mg DM)$^{-1}$ hr^{-1}	1.49	2.6	20	3.677	[1000]	Chlorophyta: Trebouxiophyceae	Showman 1972 [Hirose & Yamagishi 1977, genus, diam 10-15 μm]	overnight incubation in darkness	Chl a/WM=0.000358	

193. Trebouxia sp. (phycobiont of Lecanora dispersa)	D	MIN	μl O_2 (mg DM)$^{-1}$ hr^{-1}	0.96	1.7	20	2.404	[1000]	Chlorophyta: Trebouxiophyceae	Showman 1972 [Hirose & Yamagishi 1977, genus, diam 10-15 μm]	overnight incubation in darkness	Chl a/WM=0.000354

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