

Supporting Table S2

Identities, origins, substrates, elemental C and N content and bulk isotope values of laboratory samples.

Phylogeny	Code	Origin	Nutrient source ^s	Sub- strate	°C	%C	%N	C:N (atomic)	Bulk $\delta^{13}\text{C}$	Bulk $\delta^{15}\text{N}$
Bacteria										
<i>Burkholderia xenovorans</i>	B1	culture collection*	MAG [1,2]	Agar	22	47.2	12.5	3.2	-12.5	-8.1
<i>Methylobacterium</i> sp	B2	isolated from boreal forest*	MAG	Liquid	25	44.8	9.0	4.3	-13.3	-10.0
<i>Klebsiella</i> sp	B3	isolated from boreal forest*	MAG	Agar	22	45.1	11.0	3.5	-22.9	-4.0
<i>Rhodococcus</i> spp.	B4	isolated from boreal forest*	Czapek	Liquid	25	54.9	4.9	9.5	-22.7	5.1
Unidentified	B5	isolated from tundra soil	MAG	Agar	22	44.2	11.2	3.4	-16.2	-0.1
Unidentified	B6	isolated from tundra soil	MAG	Agar	22	43.6	10.6	3.5	-16.6	2.1
Unidentified	B7	isolated from tundra soil	MAG	Agar	22	44.1	10.4	3.6	-16.2	0.4
Unidentified	B8	isolated from arctic lake	MAG	Agar	22	44.2	10.4	3.7	-15.5	0.1
Unidentified	B9	isolated from tundra soil	MAG	Agar	22	43.7	10.3	3.6	-22.9	-7.0
Unidentified	B10	isolated from tundra soil	MAG	Agar	22	40.3	7.9	4.4	-17.4	-1.1
Unidentified	B11	isolated from tundra soil	MAG	Agar	22	41.7	8.4	4.3	-17.9	0.9
Unidentified	B12	isolated from arctic lake	MAG	Agar	22	42.5	9.9	3.7	-23.2	-2.5
Fungi										
<i>Ascomycota</i>	F1	isolated from boreal forest*	Czapek	Liquid	25	47.3	1.9	21.1	-25.0	2.8
<i>Aureobasidium pullulans</i>	F2	isolated from boreal forest*	MAG	Liquid	25	41.5	6.0	5.9	-22.6	2.6
<i>Bionectria orhroleuca</i>	F3	isolated from boreal forest*	Czapek	Agar	22	42.5	4.5	8.2	-24.6	4.0
<i>Nectria vilior</i>	F4	isolated from boreal forest*	Czapek	Liquid	25	34.7	2.9	10.3	-23.6	2.8
<i>Mortierella alpina</i>	F8	culture collection*	MMN [3]	Agar	22	40.5	6.0	5.8	-8.7	9.5
Unidentified	F5	isolated from tundra soil	MMN	Liquid	25	53.6	2.3	19.8	-10.7	6.5
Unidentified	F6	isolated from tundra soil	MMN	Liquid	25	55.0	1.6	29.4	-11.3	8.7
Unidentified	F7	isolated from tundra soil	MMN	Liquid	25	47.9	4.0	10.3	-10.9	8.4
Unidentified	F9	isolated from tundra soil	MMN	Liquid	25	49.9	3.3	12.9	-10.9	8.2
Microalgae										
<i>Cyanothece</i> sp	C1	GEOMAR [†]	no nutrients added	SW	29	42.9	3.7	9.9	-20.1	-1.2
<i>Merismopedia punctata</i>	C2	GEOMAR	f/2 diluted 1:4 [4,5]	BW	20	20.1	3.1	5.6	-25.9	5.4
<i>Anabaena cylindrica</i>	C3	SAG [‡]	no nutrients added	FW	20	46.6	9.0	4.5	-19.3	-1.0
<i>Nostoc muscorum</i>	C4	SAG	no nutrients added	FW	20	50.5	6.3	6.9	-19.1	3.6
<i>Achnanthes brevipes</i>	D1	GEOMAR	f/2	BW	20	28.8	1.9	13.1	-12.8	4.6
<i>Amphora coffaeiformis</i>	D2	GEOMAR	f/2	BW	20	24.7	2.2	9.6	-10.5	5.5
<i>Melosira varians</i>	D3	GEOMAR	f/2	BW	20	24.0	3.2	6.5	-14.6	4.0
<i>Phaeodactylum tricornutum</i>	D4	SAG	f/2	SW	20	18.8	3.1	5.1	-19.4	10.4
<i>Stauroneis constricta</i>	D5	GEOMAR	f/2	SW	20	24.7	1.2	17.6	-9.1	5.1

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Table S2 continued

Phylogeny	Code	Origin	Nutrient source [§]	Substrate	°C	%C	%N	C:N (atomic)	Bulk $\delta^{13}\text{C}$	Bulk $\delta^{15}\text{N}$
Microalgae										
<i>Emiliana huxleyi</i>	H1	GEOMAR	f/2 w/o silica	SW	20	NA	NA	NA	NA	NA
<i>Emiliana huxleyi</i>	H2	GEOMAR	f/2 w/o silica	BW	20	NA	NA	NA	NA	NA
<i>Isochrysis galbana</i>	H3	GEOMAR	f/2 w/o silica	BW	20	NA	NA	NA	NA	NA
<i>Corcontochrysis noctivaga</i>	H4	SAG	no nutrients added	FW	20	NA	NA	NA	NA	NA
<i>Dunaliella</i> sp.	K1	GEOMAR	f/2 w/o silica	SW	20	10.3	1.6	5.5	-16.3	8.9
<i>Prasinocladus marinus</i>	K2	GEOMAR	f/2 w/o silica	BW	20	38.4	4.0	8.3	-17.0	8.4
<i>Ankistrodesmus falcatus</i>	K3	SAG	f/2 w/o silica	FW	20	NA	NA	NA	NA	NA
<i>Chlamydocapsa maxima</i>	K4	SAG	no nutrients added	FW	20	NA	NA	NA	NA	NA
<i>Chlamydomonas asymmetrica</i>	K5	SAG	f/2 w/o silica	FW	20	48.6	2.8	14.8	-19.3	1.9
<i>Chlamydomonas gigantea</i>	K6	SAG	f/2 w/o silica	FW	20	NA	NA	NA	NA	NA
<i>Ochromonas minima</i>	X1	GEOMAR	JM SW modified[6]	BW	20	29.2	4.4	5.7	-27.7	-8.8
<i>Ochromonas villosa</i>	X2	GEOMAR	JM SW modified	BW	20	40.6	5.9	5.9	-25.7	-3.4
<i>Ochromonas danica</i>	X3	SAG	no nutrients added	FW	20	40.5	7.0	5.0	-21.4	-3.5
<i>Chromulina</i> sp	X4	SAG	no nutrients added	FW	20	NA	NA	NA	NA	NA
<i>Cryptomonas</i> sp	Y1	SAG	no nutrients added	FW	20	45.7	4.3	9.1	-15.6	3.9
Composite natural sample [§]	N1	Kiel fjord	no nutrients added	BW	16	NA	NA	NA	NA	NA
Composite natural sample [§]	N2	Kiel fjord	no nutrients added	BW	16	NA	NA	NA	NA	NA
Composite natural sample [§]	N3	Kiel fjord	no nutrients added	BW	16	NA	NA	NA	NA	NA

Table footnotes. *Samples were obtained from the study Larsen et al. [7]; [§] Carbon and nitrogen sources in bacterial and fungal media: Czapek contains 30 g/L sucrose and 3 g/L sodium nitrate, modified arabinose gluconate (MAG) contains 1 g/L L-arabinose, 1 g/L D-gluconic acid, and 0.32 g/L ammonium chloride and Melin-Norkrans (MMN) agar medium contains 10 g/L D-glucose and 0.25 g/L ammonium phosphate. See Larsen et al. [7] for $\delta^{13}\text{C}$ values of the substrates. Algae were grown at 12h/12h dark/light cycles at 80-100 ($\mu\text{E}/\text{m}^2\text{s}$) in either natural brackish (BW) or seawater (SW). [†] GEOMAR - Helmholtz Centre for Ocean Research Kiel; [‡] SAG - The Culture Collection of Algae at Goettingen University. [§]We estimated by visual inspection that diatoms comprised between 60 and 80% of the algal cells in the natural samples.

S2 references

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