

Table S1

strain	species	origin	Acc. #
CAUP H6501	<i>Mychonastes homosphaera</i>	Freshwater, Lake Erken, Sweden	GU799581
SAG 37.98	<i>Mychonastes jurisii</i>	Freshwater, Lake Stechlin, Newglobso, Germany	GQ477038
CCAP 211/406	<i>Mychonastes afer</i>	Freshwater, Lake Victoria, Dunga, Kenya	GQ477049
CCAP 260/13	<i>Mychonastes ovahimbae</i>	Freshwater, Kunene, Angola	GQ477052
CCAP 260/9	<i>Mychonastes pushpae</i>	Freshwater, Amber Fort, India	GQ477046
CCAP 260/4	<i>Mychonastes pusillus</i>	Freshwater, Lake Victoria, Dunga Beach, Kenya	GQ477039
CCAP 222/52	<i>Mychonastes racemosus</i>	Freshwater, Kunene, Angola	GQ477051
Genome	<i>Chromochloris zofingiensis</i>	Soil, Ramooswald, near Zofingen, Switzerland	MW075306
SAG 211-14	<i>Chromochloris zofingiensis</i>	Soil, Ramooswald, near Zofingen, Switzerland	MW075307
SAG 4.80	<i>Chromochloris zofingiensis</i>	unknown	MW075308
SAG 31.80	<i>Chromochloris zofingiensis</i>	unknown	MW075309
SAG 34.80	<i>Chromochloris zofingiensis</i>	Bark of deciduous tree, near Marburg, Germany	MW075310
CCAP 211-14	<i>Chromochloris zofingiensis</i>	Soil, Ramooswald, near Zofingen, Switzerland	MW075311
CAUP H6503	<i>Chromochloris zofingiensis</i>	Soil, Ramooswald, near Zofingen, Switzerland	MW075312
CCALA 741	<i>Chromochloris zofingiensis</i>	Subglacial, soil, Austre Broeggerbreen, Svalbard, Norway	MW075313
SAG 221-2	<i>Chromochloris zofingiensis</i>	Soil, near Unterengadin, Switzerland	MW075314
SAG 261-2	<i>Pediastrum duplex</i>	Freshwater, Sweden	MW075315
SAG 261-3a	<i>Pediastrum duplex</i>	Freshwater, Malham, UK	MW075316
CAUP H6006	<i>Bracteacoccus</i> sp.	Soil, Bab, Slovakia	MW075317
CAUP H6007	<i>Bracteacoccus minor</i>	Periphyton in a thermal spring, Sklené Teplice - Spa, Slovakia	MW075318
SAG 221-1	<i>Bracteacoccus minor</i>	unknown	MW075319
SAG 61.80	<i>Bracteacoccus minor</i>	Soil, Negev Desert, Israel	MW075320
SAG 2032	<i>Bracteacoccus bullatus</i>	Soil, near Harz, Germany	MW075321
CCALA 733	<i>Bracteacoccus bullatus</i>	Subglacial, river sediment, Vestre Broeggerbreen, Svalbard, Norway	MW075322
SAG 262-1b	<i>Planktosphaeria gelatinosa</i>	Freshwater, pool in Gainesville, FL, USA	MW075323
SAG 217-1c	<i>Radiococcus polyococcus</i>	Freshwater, Botanical Garden, University of Cambridge, UK	MW075324
CCALA 714	<i>Pseudomuriella schumacherensis</i>	Subglacial, river sediment, Vestre Broeggerbreen, Svalbard, Norway	MW075325
SAG 221-5	<i>Pseudomuriella schumacherensis</i>	Freshwater, pond near Glasgow, Scotland	MW075326
SAG 2137	<i>Pseudomuriella schumacherensis</i>	Needles of Abies sp., Jutland, Denmark	MW075327
SAG 249-1	<i>Pseudomuriella engadiensis</i>	Wet tuff in garden, Basel, Switzerland	MW075328
SAG 221-3	<i>Pseudomuriella engadiensis</i>	Soil, near Unterengadin, Switzerland	MW075329
SAG 221-4	<i>Pseudomuriella engadiensis</i>	Soil, near Unterengadin, Switzerland	MW075330

Table S2

	PstI		
strain	F _{tot}	F _{poly} %	F _{uni}
Genome	240	49.08	23
SAG 211-14	235	48.06	10
SAG 34.80	213	43.56	10
SAG 4.80	250	51.12	40
SAG 31.80	189	38.65	3
SAG 221-2	183	37.42	228

Table S3

	survival rate [%]	0	F _{poly}	repaired	changed	variable	repaired	changed	variable	1	2	3	123	treated	F _{uni}	0>1/2/3	1>0/2/3	2/3>0/1	0>1/2/3	1>0/2/3	2/3>0/1
SAG 211-14	84.8	1078	393	57	159	177	14.50	40.46	45.04	160	10	12	182	234	159	173	148	72	44.02	37.66	18.32
Genome	66.1	980	454	60	254	140	13.22	55.95	30.84	190	15	14	219	200	254	92	212	150	20.26	46.70	33.04
SAG 4.80	54.5	1048	402	60	213	129	14.93	52.99	32.09	187	7	9	203	189	213	122	198	82	30.35	49.25	20.40
SAG 31.80	90.3	1028	475	68	256	151	14.32	53.89	31.79	137	6	7	150	219	256	205	200	70	43.16	42.11	14.74
SAG 34.80	98.1	836	774	67	173	534	8.66	22.35	68.99	41	0	2	43	600	174	301	321	152	38.89	41.47	19.64
SAG 221-2	96.4	1100	409	55	227	127	13.45	55.50	31.05	129	8	7	144	182	227	125	199	85	30.56	48.66	20.78