

Table S1. PCR and sequencing primers used in this study.

Primer name (direction)	Nucleotide sequence (5' → 3')	Utilization	Reference
18S-F (forward)	TCCTGCCAGTAGTCATATGC	18S rDNA: PCR with primer 18S-PROT-R	Grzebyk et al. (1998)
18S-PROT-R (reverse)	TGATCCTTCYGCAGGTTTAC	18S rDNA: PCR and sequencing	Grzebyk et al. (2022)
D3b-R (reverse)	TCGGAGGGAACCAGCTACTA	PCR of ITSs + D1-D3 of 28S rDNA with primer 18S-I3F	Nunn et al. (1996)
18S-I1NF (forward)	AAGGAAGSCAGCAGGCG	18S rDNA sequencing	Grzebyk et al. (2022)
18S-I2NR (reverse)	TGCTGGCACCAGACTTG	18S rDNA sequencing	Grzebyk et al. (2022)
18S-I3F (forward)	GGGAGTATGGTCGCAAGG	18S rDNA sequencing, and PCR with primer D3b-R	Grzebyk et al. (2022)
18S-I4N2R (reverse)	CACCCATAGAATCAAGAAAGA	18S rDNA sequencing	Grzebyk et al. (2022)
18S-ITS1-F (forward)	CTTAGAGGAAGGAGAAGTCG	ITSs sequencing	Grzebyk et al. (2022)
D1Rev (reverse)	TATGCTTAAATTCAGCRGGT	ITSs sequencing	Grzebyk et al. (2022)
D1R (forward)	ACCCGCTGAATTTAAGCATA	28S rDNA sequencing	Scholin et al. (1994)
D2C (reverse)	CCTTGGTCCGTGTTTCAAGA	28S rDNA sequencing	Scholin et al. (1994)
D3SEQ-F (forward)	AGRRCTTTGRAAAGAGAG	28S rDNA sequencing	Grzebyk et al. (2022)

Grzebyk, D., Sako, Y., Berland, B., 1998. Phylogenetic analysis of nine species of *Prorocentrum* (Dinophyceae) inferred from 18S ribosomal DNA sequences, morphological comparisons, and description of *Prorocentrum panamensis*, sp. nov. *J. Phycol.* 34:1055–68.

Grzebyk, D., Pasqualini, V., Garrido, M., Quilichini, Y., Pereto, C., Cecchi, P., 2022. Insight into the morphology and genetic diversity of the *Chaetoceros tenuissimus* (Bacillariophyta) species complex. *Eur. J. Phycol.* 57, 507-525.

Nunn, G., Theisen, B., Christensen, B., Arctander, P., 1996. Simplicity-correlated size growth of the nuclear 28S ribosomal RNA D3 expansion segment in the crustacean order isopoda. *J. Mol. Evol.* 42(2):211–23.

Scholin, C.A., Herzog, M., Sogin, M., Anderson, D.M., 1994. Identification of group- and strain-specific genetic markers for globally distributed *Alexandrium* (Dinophyceae). II. Sequence analysis of a fragment of the LSU rRNA gene. *J. Phycol.* 30:999–1011.

Table S2. Variability and frequency (n: number of observations) in the number of large pores in the pore groups on the right and left thecal plates (as defined in Fig. 4E) between cells in the two *P. venetum* strains.

Pore group number (*)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10		L1	L2	L3	L4	L5	L6	L7	L8	L9	L10
Strain AYR19-3C4																					
Maximum pore number	5 n=6	3 n=4	5 n=5	7 n=3		6 n=2	5 n=8	5 n=4	5 n=2	3 n=2		4 n=1	4 n=2	5 n=2	8 n=2		8 n=2	5 n=1	4 n=12	4 n=1	3 n=1
Median +1	5 n=6	3 n=4	5 n=5	6 n=7		5 n=13	5 n=8	4 n=16	4 n=5	3 n=2		4 n=1	3 n=7	5 n=2	6 n=6		7 n=3	5 n=1		4 n=1	3 n=1
Median or Top frequency	4 n=34	2 n=27	4 n=20	5 n=14	1 n=40	4 n=22	4 n=18	3 n=18	3 n=23	2 n=38		3 n=13	2 n=8	4 n=11	5 n=5	1 n=18	6 n=8	4 n=10	4 n=12	3 n=13	2 n=16
Median - 1	3 n=1	1 n=8	3 n=13	4 n=12		3 n=4	3 n=13	2 n=3	2 n=10	1 n=1		2 n=4	1 n=1	3 n=4			5 n=4	3 n=7	3 n=5	2 n=3	1 n=1
				3 n=3																	
Minimum pore number	3 n=1	1 n=8	2 n=2	1 n=1		3 n=4	2 n=2	2 n=3	1 n=1	1 n=1		2 n=4	1 n=1	2 n=1	4 n=5		3 n=1	3 n=7	2 n=1	2 n=3	1 n=1
Observation number	41	39	40	40	40	41	41	41	41	41		18	18	18	18	18	18	18	18	17	18
Strain AYR19-3E9																					
Maximum pore number	5 n=2	4 n=2	4 n=10	9 n=1		8 n=1	5 n=1	4 n=5	4 n=1	3 n=2		4 n=2	3 n=3	4 n=4	7 n=1		8 n=1	6 n=1	4 n=4	4 n=1	3 n=2
						7 n=1															
Median +1	5 n=2	4 n=2		6 n=2		6 n=1	5 n=1	4 n=5	4 n=1	3 n=2		3 n=2	3 n=3				7 n=2	5 n=1	4 n=4	4 n=1	3 n=2
Median or Top frequency	4 n=13	3 n=8	4 n=10	5 n=8	1 n=17	5 n=9	4 n=11	3 n=13	3 n=11	2 n=14		2 n=4	2 n=6	4 n=4	5 n=6	1 n=9	6 n=4	4 n=5	3 n=5	3 n=5	2 n=7
Median - 1	3 n=2	2 n=8	3 n=6	4 n=6		4 n=5	3 n=6		2 n=6	1 n=1		1 n=1		3 n=4	4 n=1		5 n=2	3 n=1		2 n=3	
Minimum pore number	1 n=1	2 n=8	2 n=2	3 n=1	0 n=1	3 n=1	3 n=6	3 n=13	2 n=6	1 n=1		1 n=1	2 n=6	3 n=4	3 n=1		5 n=2	2 n=1	3 n=5	2 n=3	2 n=7
Observation number	18	18	18	18	18	18	18	18	18	17		9	9	8	9	9	9	9	9	9	9

(*) R for right plate, L for left plate.

Table S3. Variability and frequency (n: number of observations) in the number of small pores in the pore groups on the right and left thecal plates (as defined in Fig. 4E) between cells in the two *P. venetum* strains.

Pore group number (*)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10		L1	L2	L3	L4	L5	L6	L7	L8	L9	L10
Strain AYR19-3C4																					
Maximum pore number		2 n=6	2 n=3	2 n=3				2 n=3	3 n=1	2 n=4			3 n=1	2 n=3	2 n=3				2 n=1	3 n=1	2 n=3
Top frequency	1 n=41	1 n=27	1 n=37	1 n=37	1 n=41		1 n=37	1 n=38	2 n=23	1 n=36		1 n=18	2 n=11	1 n=15	1 n=14	1 n=18		1 n=14	1 n=15	2 n=10	1 n=13
									1 n=17	1 n=1			1 n=6		?			?	?	1 n=7	?
		0 n=6	0? n=1	0? n=1		0 n=41	0? n=4			0? n=1							0 n=18	0 n=1	0 n=1		0 n=1
Observation number	41	41	41	41	41	41	41	41	41	41		18	18	18	18	18	18	18	18	18	18
Strain AYR19-3E9																					
Maximum pore number		3 n=1		2 n=2						2 n=1			3 n=1							2 n=4	2 n=1
Top frequency	1 n=16	2 n=8	1 n=17	1 n=14	1 n=18		1 n=13	1 n=16	2 n=13	1 n=14		1 n=6	2 n=6	1 n=8	1 n=8	1 n=8		1 n=7	1 n=9	1 n=5	1 n=8
		1 n=5					?		1 n=3	?		?	1 n=2		?	?		?			
	0 n=1	0? n=3		0 n=1		0 n=18	0 n=3	0 n=1	?	0 n=1		0? n=1		0? n=1			0 n=9	0? n=1			
Observation number	17	17	17	17	18	18	17	17	17	17		9	9	9	9	9	9	9	9	9	9

(*) R for right plate, L for left plate.

Note. Because the surface of the thecal plates was not always clean (e.g., because a film of mucus), the orifice of small pores was sometimes difficult to see, resulting in the uncertain absence of pore (indicated by 0?) or the unverifiable presence of a pore (indicated by ?). One or two (rarely three) more small pores were sometimes present on both lateral plates between pore groups 2 and 3, and between groups 8 and 9, in particular when the total number of small pores was greater than the median number for each plate.