Supplementary Materials

Response of bacterioplankton community structure to an artificial gradient of pCO_2 in the Arctic Ocean

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Fig. S1. MDS plots, based on single enzyme digested T-RFLP analysis, showing bacterial community dynamics during mesocosm experiment. A: displaying with mesocosm; B: displaying with incubation time.

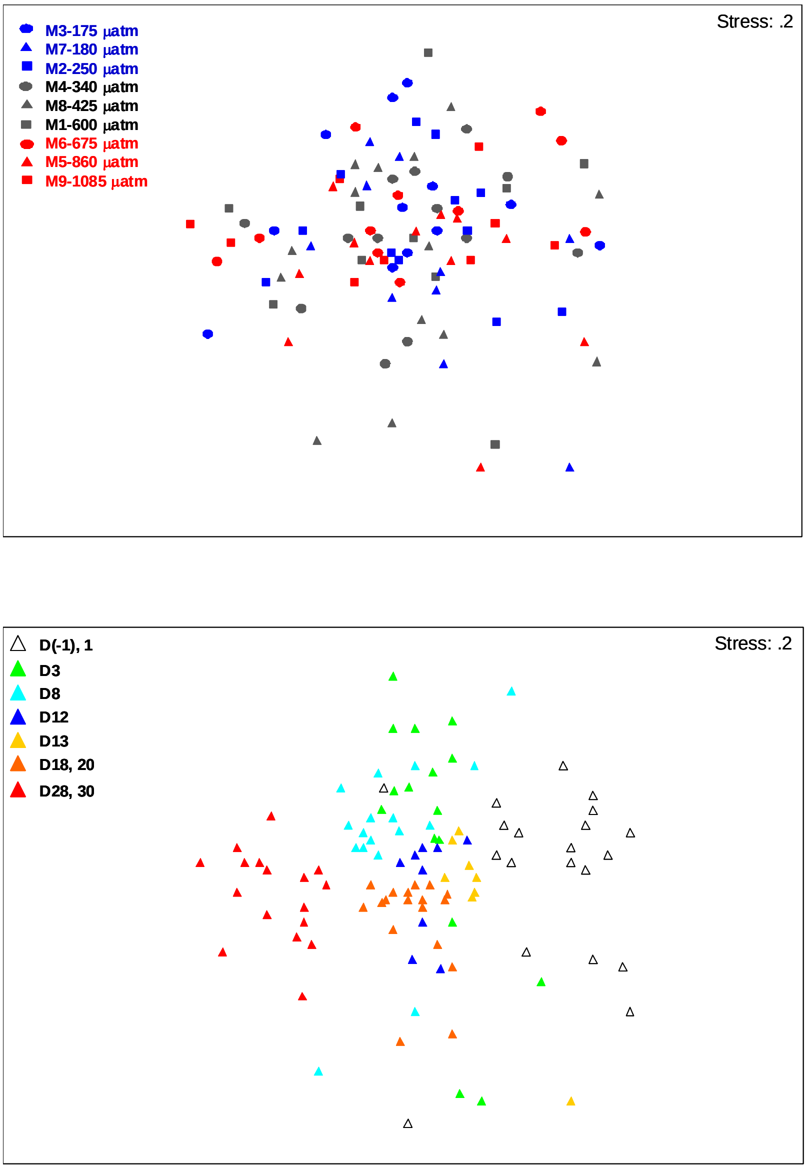

Fig. S2. Rare fraction analysis of eight clone libraries constructed for Day30 samples.

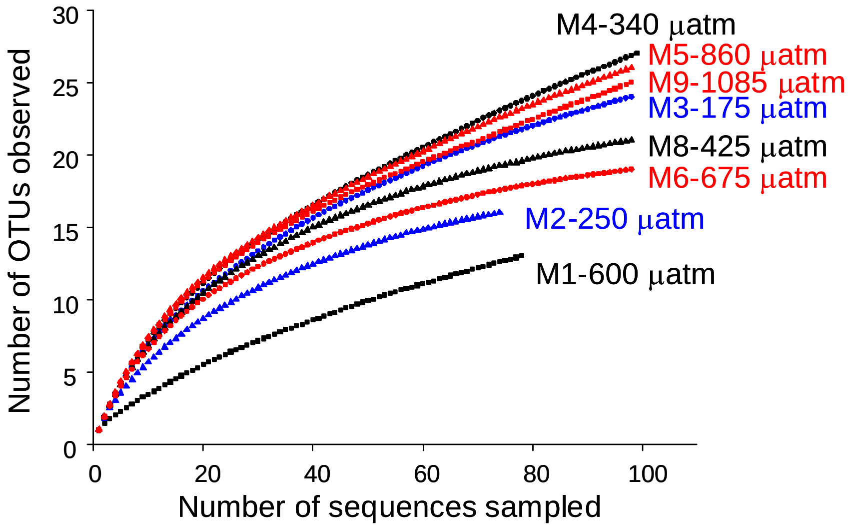

Table S1. ANOSIM analysis based on the matrix of T-RF position and peak area showing similarity among nine mesocoms. R statistic and significance level (%) are shown for each pair comparison.

	M3-175 μatm	M7-180 μatm	M2-250 μatm	M4-340 μatm	M8-425 μatm	M1-600 μatm	M6-675 μatm	M5-860 μatm	M9-1085 μatm
M3-175 μatm									
M7-180 μatm	−0. 041 (89. 2)								
M2-250 μatm	−0. 063 (98. 3)	−0. 022 (70. 3)							
M4-340 μatm	−0. 059 (97. 1)	−0. 021 (69. 8)	−0. 058 (99. 0)						
M8-425 μatm	−0. 053 (94. 8)	−0. 026 (73. 5)	−0. 055 (96. 9)	−0. 036 (88. 7)					
M1-600 μatm	−0. 030 (79. 0)	−0. 014 (62. 0)	0. 007 (34. 4)	−0. 033 (82. 5)	−0. 020 (66. 1)				
M6-675 μatm	−0. 008 (50. 7)	0. 035 (14. 9)	−0. 003 (43. 6)	−0. 019 (71. 5)	−0. 015 (63. 8)	−0. 017 (63. 8)			
M5-860 μatm	−0. 050 (96. 5)	−0. 036 (89. 9)	−0. 030 (83. 8)	−0. 030 (84. 5)	−0. 049 (97. 0)	−0. 030 (80. 5)	−0. 005 (50. 5)		
M9-1085 μatm	−0. 024 (71. 5)	0. 011 (32. 0)	−0. 020 (70. 7)	−0. 013 (62. 3)	−0. 053 (98. 6)	−0. 018 (63. 7)	−0. 017 (68. 1)	−0. 024 (76. 2)	

Table S2. ANOSIM analysis based on the matrix of T-RF position and peak area showing similarity among incubation days. R statistic and significance level (%) are shown for each pair comparison.

	D(-1)	D1	D3	D4	D5	D7	D8	D10	D12	D13	D14	D16	D18	D20	D22	D24	D26	D28	D30
D(-1)																			
D1	0.343(0.6)																		
D3	0.427(0.2)	0.051(19.1)																	
D4	0.574(0.1)	0.163(4.9)	-0.034(62.4)																
D5	0.702(0.1)	0.421(0.1)	0.09(13.9)	0.111(3.6)															
D7	0.643(0.1)	0.313(0.2)	0.117(9.5)	0.148(2.9)	0.142(3.8)														
D8	0.928(0.1)	0.580(0.1)	0.592(0.1)	0.381(0.1)	0.621(0.1)	0.123(4.3)													
D10	0.613(0.1)	0.319(0.7)	0.365(0.5)	0.296(0.6)	0.431(0.1)	0.163(3.5)	0.271(0.5)												
D12	0.674(0.2)	0.447(0.1)	0.565(0.1)	0.466(0.1)	0.735(0.1)	0.442(0.1)	0.574(0.1)	0.120(7.5)											
D13	0.511(0.2)	0.515(0.2)	0.554(0.1)	0.428(0.1)	0.589(0.1)	0.352(0.1)	0.709(0.1)	0.155(3.6)	0.298(0.1)										
D1	0.600(	0.533(	0.638(0	0.595(	0.742(	0.505(	0.848(	0.321(	0.281(	0.069(									

4	0.1)	0.1)	.1)	0.1)	0.1)	0.1)	0.1)	0.1)	0.4)	18.3)								
D16	0.614(0.1)	0.573(0.1)	0.721(0.1)	0.626(0.1)	0.828(0.1)	0.482(0.1)	0.744(0.1)	0.192(5.3)	0.182(5.3)	0.132(5.3)	0.057(22.3)							
D18	0.725(0.2)	0.597(0.1)	0.611(0.1)	0.538(0.1)	0.685(0.1)	0.421(0.1)	0.505(0.1)	0.193(1.3)	0.226(0.3)	0.152(1.4)	0.221(0.2)	0.003(40.8)						
D20	0.909(0.1)	0.752(0.1)	0.771(0.1)	0.657(0.1)	0.798(0.1)	0.621(0.1)	0.606(0.1)	0.342(0.2)	0.301(0.1)	0.418(0.1)	0.450(0.1)	0.113(10.8)	0.035(22.8)					
D22	0.824(0.1)	0.626(0.1)	0.650(0.1)	0.592(0.1)	0.754(0.1)	0.545(0.1)	0.619(0.1)	0.284(0.1)	0.390(0.1)	0.417(0.1)	0.478(0.1)	0.224(1.6)	0.066(12.2)	0.052(18.6)				
D24	0.911(0.1)	0.659(0.1)	0.684(0.1)	0.635(0.1)	0.836(0.1)	0.636(0.1)	0.612(0.1)	0.365(0.9)	0.459(0.2)	0.547(0.2)	0.609(0.1)	0.299(0.6)	0.164(2.9)	0.034(27.6)	0.051(24.0)			
D26	0.943(0.1)	0.653(0.1)	0.818(0.2)	0.684(0.1)	0.934(0.1)	0.712(0.1)	0.761(0.1)	0.540(0.1)	0.641(0.2)	0.824(0.1)	0.854(0.1)	0.673(0.2)	0.528(0.2)	0.542(0.1)	0.268(1.8)	0.209(3.9)		
D28	0.951(0.1)	0.794(0.1)	0.838(0.1)	0.750(0.1)	0.891(0.1)	0.848(0.1)	0.759(0.1)	0.519(0.1)	0.484(0.1)	0.780(0.1)	0.679(0.1)	0.464(0.2)	0.474(0.1)	0.522(0.1)	0.312(0.3)	0.405(0.1)	0.106(11.0)	
D30	0.939(0.1)	0.810(0.1)	0.901(0.1)	0.750(0.1)	0.967(0.1)	0.866(0.1)	0.948(0.2)	0.719(0.1)	0.875(0.1)	0.863(0.1)	0.943(0.1)	0.828(0.1)	0.650(0.2)	0.825(0.1)	0.517(0.1)	0.574(0.1)	0.222(1.5)	0.351(0.1)

Table S3. Pair comparisons of clone library using Libshuff analysis. $C_{column, row}$ and $C_{row, column}$ are given above and below the diagonal, respectively. P values of less than 0.05 are in bold. Underlining indicates that both $C_{column, row}$ and $C_{row, column}$ are significant.

	M3	M2	M4	M8	M1	M6	M5	M9
M3		**<0.0001**	0.2613	0.083	**<0.0001**	**0.0018**	**0.0167**	**0.0309**
M2	**0.0166**		0.3881	0.9202	**0.012**	0.0719	0.7214	0.2917
M4	**0.0241**	0.5284		0.7007	**0.0243**	0.2199	0.5103	0.15
M8	**0.0214**	**<0.0001**	**0.0191**		**0.0012**	**0.0057**	**0.0468**	0.1291
M1	0.5041	0.4231	0.3848	0.388		0.2846	0.6417	0.0837
M6	**<0.0001**	**0.0002**	0.1391	**0.0491**	**0.001**		0.616	**0.0098**
M5	**0.002**	**0.0002**	0.602	**0.0309**	**0.0009**	0.2673		**0.0073**
M9	**0.0295**	**0.0016**	0.1932	0.6272	**0.0148**	0.0974	0.5661	