

Supplementary Material

Dimethylsulfoniopropionate (DMSP) and dimethylsulfoxide (DMSO) cell quotas variations due to sea ice shifts of salinity and temperature in the Prymnesiophyceae *Phaeocystis antarctica*

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Fig S1 Schematic description of the experimental setup. Control cultures are maintained at S34 and 4°C. White boxes with stars represent the cooling alcohol bath. S = salinity, mQ = milliQ water. Salinities mentioned in the black boxes are salinities of solution used to change the salinity. Salinities mentioned in the color boxes are the actual salinities of the experiments. a. Salinity increase experiments, b. Salinity increase and Temperature decrease experiments and c. Salinity decrease experiment.

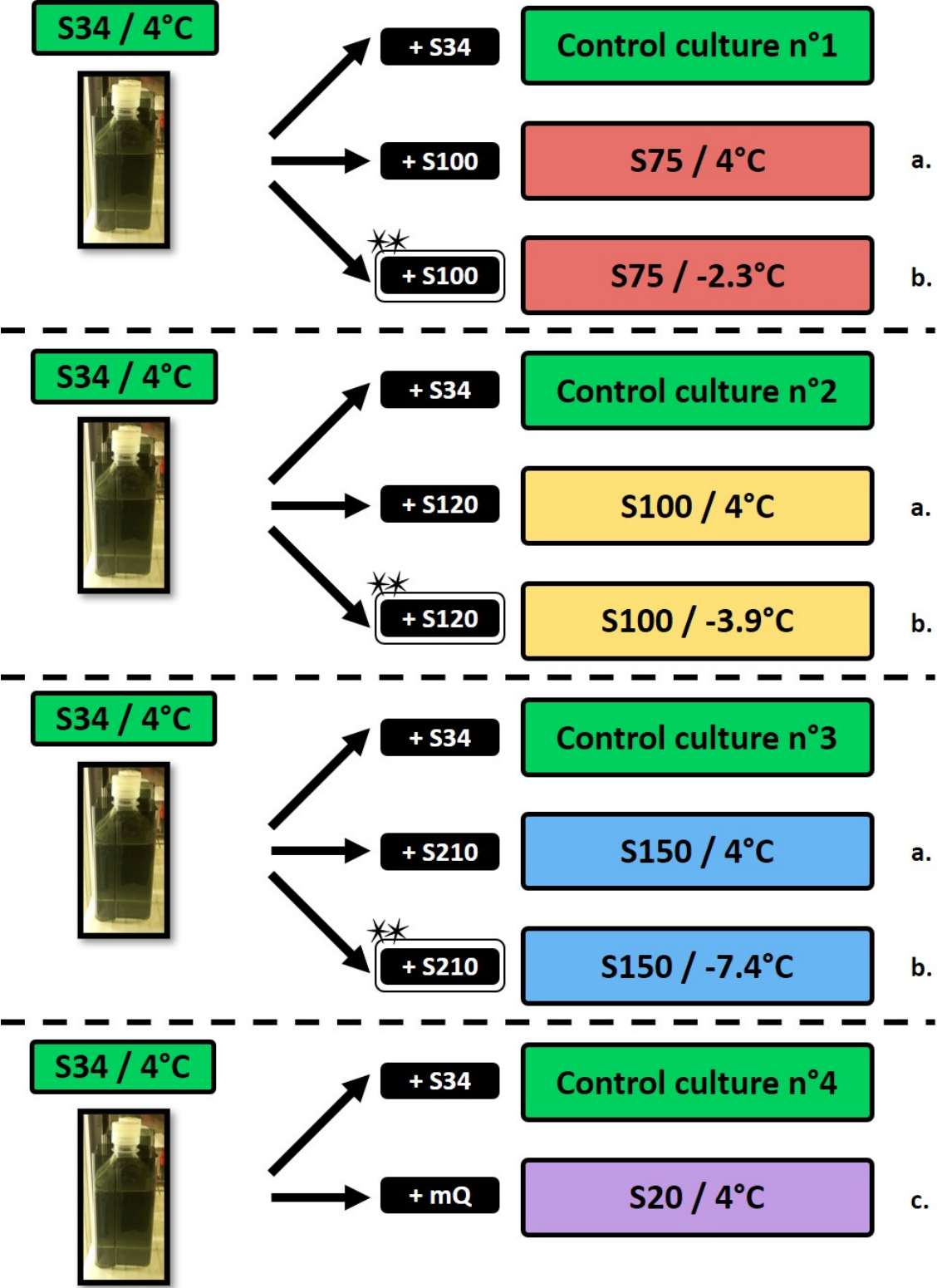


Fig S2 Changes of cell density for three sets of 9-days experiments conducted on *P. antarctica*: **a.** increase of salinity (S) at constant temperature (T), **b.** increase of salinity associated with a decrease of temperature and **c.** decrease of salinity at constant temperature. For each experiment, the control culture is the green line at S = 34, T = 4°C and is the mean of four biological replicates. Shifts of salinity to S20, S75 and S100 are represented by purple triangles, red squares and yellow diamonds respectively.

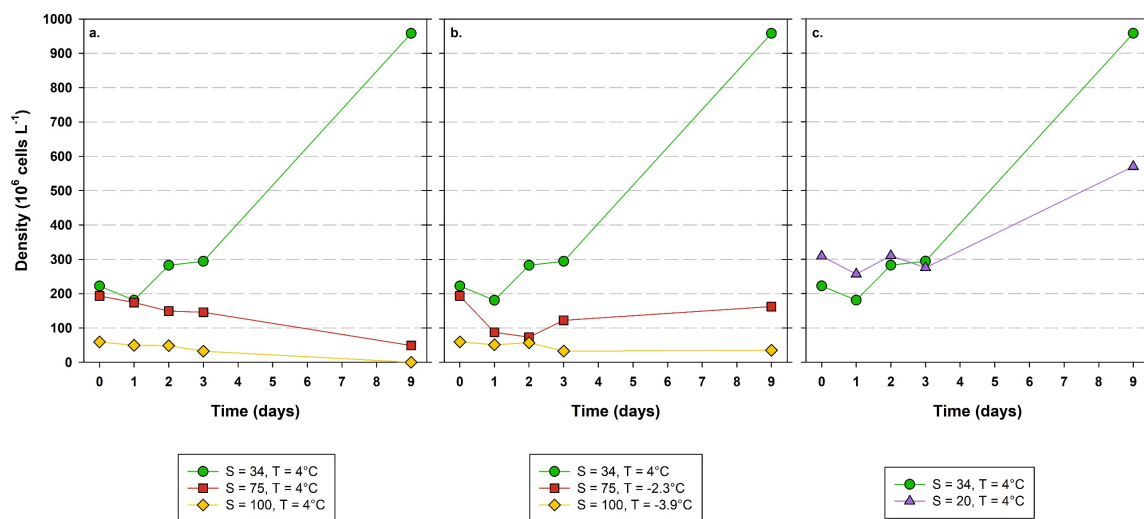


Table S1 Overview of the total volume of 1L-culture, saltier solutions and ultrapure water used to obtain the four salinities studied. We also present the variation of salinity step by step as well as the volume added at each step.

Test	Volume sampled in 1L culture, mL (S34, 4°C)	Total added volume for dilution, mL (diluent salinity)	Step 1: Salinity shift (volume added, mL)	Step 2: Salinity shift (volume added, mL)	Step 3: Salinity shift (volume added, mL)
S20	250	178 (ultrapure water)	- 4.66 (43)	- 4.66 (56)	- 4.66 (83)
S75	250	415 (S100)	+ 13.95 (64)	+ 13.97 (111)	+ 14.00 (240)
S100	200	623 (S120)	+ 22.08 (65)	+ 22.03 (133)	+ 21.99 (425)
S150	250	432 (S210)	+ 38.37 (62)	+ 38.90 (112)	+ 38.95 (258)