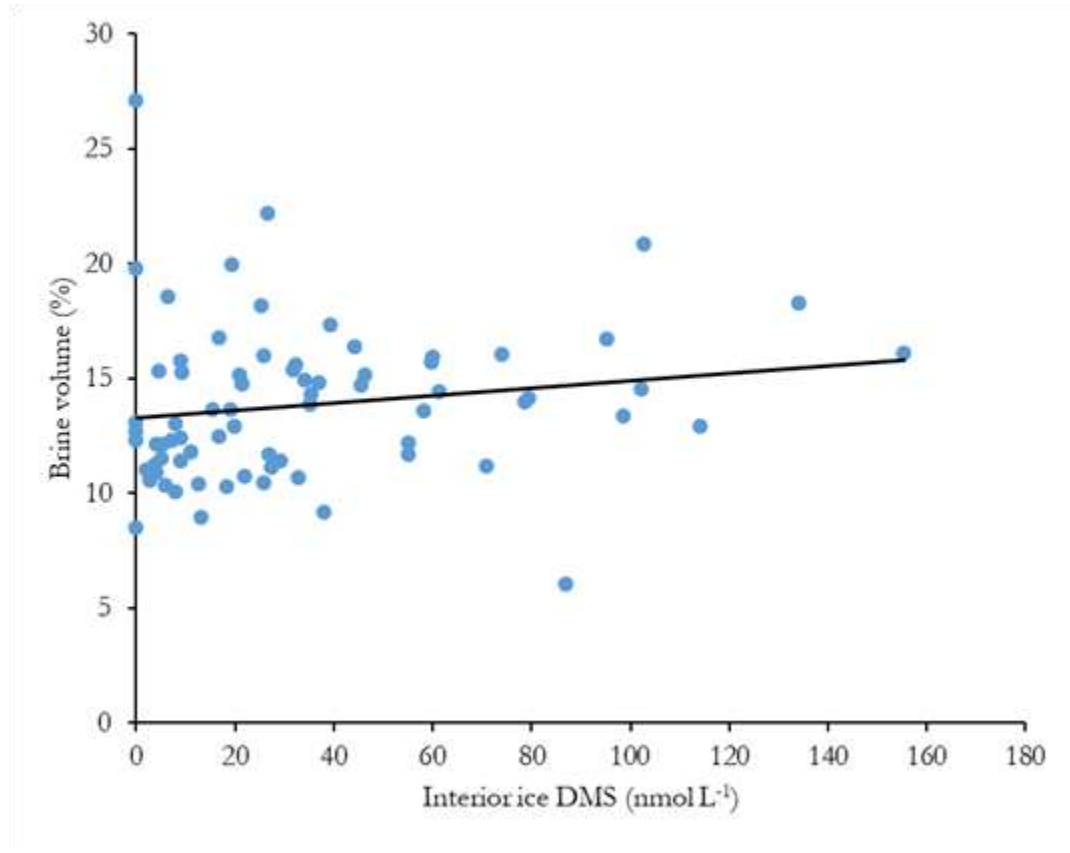


**Figure S4. Relationship between brine volume fraction and the corresponding bulk ice DMS concentrations in interior ice.**



Each data point represents the calculated brine volume fraction (%) and corresponding bulk-ice DMS concentration (nmol L<sup>-1</sup>) for each 0.1-m ice section sampled during the study. All of the data points obtained during the successive days of sampling are represented, i.e., every 0.1-m ice section of each vertical ice profile sampled, except for the bottommost 0.1 m of sea ice. Primary producers aggregate in large colonies in the bottommost 0.1 m of sea ice and become the predominant control of sea-ice DMS concentrations. This plot shows that, in interior sea ice, bulk-ice DMS concentration and calculated brine volume fraction were not significantly correlated ( $r_s = -0.23$ ;  $p > 0.05$ ;  $n = 74$ ) throughout the sampling campaign. The non-parametric Spearman's Rho test was used to measure the strength of the association between interior ice DMS and brine volume fraction as the data were non-normally distributed.