

Interactive comment on “Low-molecular-weight hydroxyacids in marine atmospheric aerosol: evidence of a marine microbial origin” by Y. Miyazaki et al.

Anonymous Referee #2

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General comments:

This manuscript reports the concentrations of lactic acid and glycolic acid in the gas- and particle-phases from the samples collected during a cruise in the subarctic North Pacific Ocean. The authors report that the concentrations of both lactic acid and glycolic acid were higher in the particle-phase than the gas-phase, and the lactic acid concentrations correlate well with chlorophyll a in the samples collected during high biological activity, indicating that lactic acid likely originates from marine biological activity. Overall, the manuscript is well written, the dataset presented here is unique and the focus of this manuscript certainly meets the scope of the journal. I recommend the publication of this manuscript after addressing following minor comments.

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Specific comments:

P5745 L14-15: Do the authors mean “a number of carbon and oxygen atoms in species”?

P5746 2.1 Aerosol and gas sampling: Have the authors estimated an artifact formation from a double filter pack sampling system? The reason I ask this question is that I have a concern that particle-phase lactic acid and glycolic acid might evaporate off from the first filter during the sampling, and collected in the second KOH impregnated filter as gas-phase compounds, potentially underestimating the particle-phase organic acids (and vice-versa for the gas-phase). Do the authors have reasons not to use a denuder filter sampling system, which can minimize such an artifact, other than logistic difficulty? It would be helpful for readers to add a sentence or two about an artifact formation here.

P5746 L10: Can the authors add a cruise and sampling point map?

P5750 L14-20 (and elsewhere): ‘±’ should be replaced with ‘σ=’ or ‘SD=’ if these are average values and their standard deviations.

P5752 L15: Have the authors detected carbohydrates in the samples? I imagine that these compounds can also be detected by the method the authors used. Can the authors comment on this in the revised manuscript?

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