

Interactive comment on “Free amino acids in Antarctic aerosol: potential markers for the evolution and fate of marine aerosol” by E. Barbaro et al.

Anonymous Referee #2

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Review on manuscript acp-2014-1007 “Free amino acids in Antarctic aerosol: potential markers for the evolution and fate of marine aerosol” by E. Barbaro et al.

This manuscript is much better than the previous version. The discussion is much clearer and the authors made some efforts to take into account the referee’s comments. In particular, it is now clearly explained that the reported amino acid concentrations are corrected for blank values. The method paper Barbaro et al. Anal. Bioanal. Chem. 2014 is also available, and I was able to check that the analytical procedure is fine.

I only have one last question on the discussion, that might need to be clarified: when

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comparing the amino acid loadings measured in this study and at other locations in previous works (section 3.1), or between aerosol size fractions (section 3.2) is the total aerosol loading somehow taken into account? Because larger amino acids concentration per volume of air could just be due to larger aerosol masses, not necessarily to higher amino acid concentrations in the particles. In particular, is it clear that the “enrichment” of the coarse fraction in amino acids (and corresponding “depletion” of the fine fraction) discussed in Section 3.2 corresponds really to higher amino acid concentrations in the particles and not just to a higher aerosol mass in the coarse fraction (which is usually the case)? An easy way to answer would be to measure the sampled aerosol mass (= weight the filters before and after sampling) and express the amino acid concentrations per mass of aerosol sample instead of m³ of air. Alternatively, the mass in each aerosol fraction could have been measured by a SMPS instrument sampling next to the filter collection . . . If this has not been taken into account, it might be worth considering in the discussion.

Other than that, the manuscript seems fit for publication.

Interactive comment on Atmos. Chem. Phys. Discuss., 15, 1269, 2015.

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